LOUISIANA DEPARTMENT OF AGRICULTURE & FORESTRY
MIKE STRAIN DVM, COMMISSIONER

Louisiana Specialty Crop Program
Final Performance Report

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CONTENTS

PROGRAM OVERVIEW

The Louisiana Department of Agriculture and Forestry (LDAF) was awarded $353,448.31 in funding for the FY 2010 Specialty Crop Block Grant Program (SCBGP). LDAF implemented projects to enhance the competitiveness of specialty crops throughout the state.

Louisiana's projects focused on programs working to inform consumers of the availability of Louisiana specialty crops, specific promotions of Louisiana pecans, promotion of Louisiana grown specialty crops statewide, and research efforts for treatments and production practices to increase yields in pecans and sweet potatoes. These projects were chosen for their importance to Louisiana's specialty crop industries and to help add money into the local economy. LDAF projects were designed to improve the competitiveness of Louisiana's specialty crops and capitalize on the growing demand for local foods and freshness.

LDAF staff monitored each project by requiring quarterly activity reports and maintaining periodic phone call and email update discussions. All invoicing and grant fund payments were completed. Two Change in Budget requests were made to the USDA and approvals were granted.

FURTHER DEVELOP AND IMPLEMENT A STATEWIDE LOUISIANA GROWN PROGRAM TO PROMOTE BUYING FRESH LOCAL SPECIALTY CROPS

Project Summary

The "Louisiana Grown Real. Fresh." statewide program to promote buying fresh local specialty crops was built on a prior year grant in which the "Louisiana Grown Real. Fresh." logo was established and basic website was designed. Under this grant's activities the program's structure was finalized, producers registered and consumers educated. This project developed and implemented the full functioning statewide promotion program to help specialty crop producers build on brand recognition and implemented focused advertising to increase sales. Through a combined effort Louisiana specialty crop producers capitalized on this brand recognition and consumer awareness of their local products helped them to compete.

The "Louisiana Grown Real. Fresh." program identifies and promotes Louisiana specialty crop agricultural and food products that are 100% grown, harvested, and processed in Louisiana. "Louisiana Grown Real. Fresh." provides consumers and retailers with a means to know that the specialty crop products they are buying are 100% grown in Louisiana by Louisiana farmers. Through this program specialty crop producers in Louisiana capitalized on name recognition and consumer awareness of their local product, helping them to compete against heavily subsidized foreign producers. Louisiana specialty crop producers were hit hard with hurricanes in 2005 and again in 2008 and 2012. Many lost entire crops and many suffered damage to their soil. As a

result of the hardships facing our Louisiana specialty crop producers the "Louisiana Grown Real. Fresh" program was implemented to help the producers better compete, educate the consumers as to the availability of specialty crops and open additional sales avenues. Demand for fresh local fruits and vegetables has increased in recent years, but many Louisiana farmers have found it extremely hard to connect to consumers and retailers with their products due to the extreme cost of developing a brand and the cost of advertising. This project worked to address this challenge by giving the local producer the ability to capitalize on a statewide promotion and advertising campaign designed to gain brand recognition and consumer awareness for Louisiana specialty crop producers' products and where they can be purchased.

Project Approach

The project during year one first focused on developing the structure for the "Louisiana Grown Real. Fresh." program. Program guidelines and criteria required to qualify and to register as a producing specialty crop member were developed. The branding was finalized after meeting with several specialty crop producer groups and even one on one individual specialty crop producer contact efforts were made to acquire input. This was completed and once the program details were established efforts to reach specialty crop producers to inform them of the statewide marketing project and the benefits of certifying and joining the "Louisiana Grown Real. Fresh." program took place. Outreach efforts were conducted. Staff attended producer conventions, field days, ag expos and many other events and agricultural venues were used throughout the state to reach producers.

Staff continued throughout years two and three to work with an advertising agency to develop and implement the advertising and promotion campaign to reach the consuming public. Through radio, television advertising and other promotion efforts consumers were educated on the availability of local specialty crops and where to find them available, and brand recognition was built. More than 47 radio stations aired 42 commercials per station and more than 380 television commercials ran over a four week period through Louisiana. Branded and messaged promotional items such as pens, logo'd cooking preparation items, tomato seed packets, and reusable grocery totes were developed to promote buying local specialty crops to increase brand recognition and educate the consumer on where to purchase. Food demonstrations were conducted at agriculture expos held in Louisiana and at Louisiana Restaurant Association annual conventions to help bring specialty crop producers, restaurateurs, and retailers together to open up additional direct marketing opportunities. Point-of-sale purchase materials such as bin signs, stickers and banners were developed and purchased to help producer members and retailers advertise to the consumer that they are "Louisiana Grown Real. Fresh." producers and the produce being sold was produced in Louisiana. A Louisiana Grown flip book was produced that contained educational information on eating specialty crops, recipes for seasonal specialty crops and messaging on eating fresh Louisiana Grown specialty crops. The information book also contained information on the "Louisiana Grown Real. Fresh." website to lead them to additional information and the purchasing contact information for member producers.

The "Louisiana Grown Real. Fresh." website was updated to include several new site pages to list the contact information for Louisiana Grown specialty crop producers in the program where they sell directly at their farms, roadside stands, or their local farmers' markets. Registration

information, recipe, media and other site pages were developed as well making the site more user friendly. Point of sale materials and signage were developed and provided to producers and retailers to promote the "Louisiana Grown Real. Fresh." members and bring awareness of their Louisianan Grown specialty crop products and the branding.

Goals and Outcomes Achieved

The statewide "Louisiana Grown Real. Fresh." program to promote buying fresh local specialty crops was a success. We reached and exceeded our goals. Our first goal was to conduct outreach to inform and recruit a minimum of 50 farmers to register as members of the Louisiana Grown program. This took place during years two and three once program criteria and advertising plan were developed. In order to become a "Louisiana Grown Real. Fresh." member a producer must be a specialty crop producer and grow 100% of the specialty crops they sell. "Louisiana Grown Real. Fresh." promotions and images can only be used on Louisiana specialty crops. To measure this goal achievement we used the registration certification records. We exceeded our goal by registering 76 producers by the end date of the grant period. We are still continuing our outreach efforts and are continuing to certify new producers into the "Louisiana Grown Real. Fresh." program at present.

The growth of the program and the consumer awareness of the brand drove consumers to begin requesting local products in the stores. We received several calls from major retail chains wanting licensing permission to use the "Louisiana Grown Real. Fresh." logo on advertisements and signage in their stores to point out the local specialty crop products as a result of customer inquiries at their stores.

The second goal of conducting promotional activities and purchasing advertisements to increase consumer awareness of the availability of Louisiana Grown products and increase the demand, thereby increasing sales, was reached and exceeded. The goal was to increase producer sales by 10 percent. To measure this goal achievement staff conducted a survey of "Louisiana Grown Real. Fresh." members' sales volume during the final year of the project. Producers surveyed reported that 85 percent realized an increase in their sales after becoming a member and the running of the promotion campaign compared to prior year sales before the campaign and 15 percent reported same sales as the past year. Of those that realized an increase in sales each gave a percentage of the increase they gained. We took those numbers and averaged them to give us our measurable. Producers' averaged sales were increased by 20 percent. The project's goal of increasing sales was met and exceeded.

The third goal was to increase the growth of an online website to increase the awareness of the statewide "Louisiana Grown Real. Fresh." program and brand. The goal was to experience at least 200 hits a month during the third year of the project once the program had been established. Staff tracked the monthly website hits to measure the achievement of the goal. The goal was met and greatly exceeded. As soon as the updated site launched during year two and our outreach efforts were underway we starting logging hit data of 260 hits in May of 2012. This proved extremely exciting to be reaching our goals prior to our targeted timeframe. With such successful numbers we increased our own goal to reach at least 300 a month in year three. This goal again

was reached. Taking the data from the final year of the project, year three, starting October 2012 through October of 2013 we averaged hits for each month and determined our averaged monthly total of 389 hits per month. This measurable was reached and exceeded showing that we did reach our consumers and they were taking an interest in our message and seeking additional information on our specialty crops and our producer members by visiting the site.

Beneficiaries

The 76 specialty crop members that joined the "Louisiana Grown Real. Fresh." program directly benefited by having their product branded and recognized as a Louisiana specialty crop product. The advertising dollars that were spent brought awareness of the specialty crops' harvesting season and drove consumers to the website where recipes and purchasing contact information could be accessed. By having their contact information and locations listed they were able to drive purchasing consumers to their businesses. This resulted in additional sales for the specialty crop members. Surveying member sales, post advertising, resulted in a reported increase of additional sales compared to prior year sales with most realizing a 10% to 30% sales increase. With the additional sales producers had more income to put into their local economy and some producers even expressed their intention of reinvesting to increase next season's production acreage.

Additionally, even Louisiana vegetable, sweet potato, citrus, strawberry, blueberry, peach, etc., producers that we are still reaching out to add to our Louisiana Grown program benefited from the consumer awareness ad campaign as well. Due to the advertising and media coverage more consumers were exposed to the availability of Louisiana specialty crops, delicious ways to prepare them and where to purchase. As a result of seeing our promotion campaign and being contacted by their customers requesting the managers to stock local crops, two major grocery store chains contacted our staff to request joining our program. They planned to use the branding logo and signage in more than 100 stores throughout Louisiana. This provided additional specialty crop exposure and advertising of the brand that was completely free.

Lessons Learned

The lesson learned with this project is that it is harder to reach the farming producers than had been anticipated. Producers are extremely busy and don't tend to go to many field days or community/regional events. We quickly learned that personal contact by mail or in person visits were more successful in reaching producers. Attending annual producer related conventions were also a great choice because those events tend to have the most consolidated attendance of producers at one time in one place. We had good success at the other venues, but learned that we need to incorporate all options to be successful. It was also learned that producers were a little skeptical to sign up for the program at first. Many producers found it hard to believe that they were going to get assistance with their marketing to the public. They assumed this was something they would never be able to afford. Once the program had been clearly explained as to the opportunities a statewide brand could provide, they were eager to get certified and passed the information on to fellow producers.

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Additional Information

Television Commercial

http://www.youtube.com/watch?v=HzeMY9CIQF8&feature=youtu.be

Website: louisianagrown.com

Signs/Banners

Stickers

Promotional pass out items, producer stickers, educational recipe flip book

EVALUATION AND COMPARISON OF PHOSPHOROUS ACID BIOFUNGICIDES AND FERTILIZER ON CONTROL OF PECAN SCAB

SUBGRANTEE: LOUISIANA STATE UNIVERSITY AGCENTER

Project Summary

Phosphorous acid releases a phosphonate ion (HPO^{-2}) which is highly water soluble, and when applied to plants is easily absorbed and translocated in plants (Brunings et al., 2005). Phosphite ions can have a direct fungitoxic effect on certain plant pathogens (Landschoot, 2005). There are various types of biofungicides, such as Fosphite®, Rampart®, and Phostrol®, that contain potassium, sodium and/or ammonium phosphites which have been combined with the alkali salt to reduce the acidity. In addition to the phosphite-based fungicides, there are several phosphite-

based fertilizers, "nutritional supplements", and "conditioners" on the market such as Nutri-Phite®. Generally, these have not been formally tested for disease control capabilities. Fertilizer materials and supplements can sometimes provide an increment of disease control, but the phosphite fertilizers do not come with explicit instructions on using them for disease control, because they cannot be marketed as disease-control chemicals without being subject to federal regulation. While most fungicides act either as contact or xylem translocated compounds, phosphonate fungicides and fertilizers move in both the xylem and phloem so that the phosphite ions can move from leaf tissues through the entire plant (Landschoot, 2005). These fungicides also have the ability to provide fungicidal control for long periods of time because of their chemical stability in the plant (Smillie et al., 1989). The efficacy of these different products or forms of phosphonates appear to vary according to the ability of the host plants to take up, transport and metabolize them (Brunings et al., 2005). In some instances phosphonates have been shown to act as both a curative and a preventative (Ouimette and Coffey (1998). Phosphonate fungicides have been found to interfere with phosphate metabolism in fungal cells by causing accumulation of polyphosphate and pyrophosphate diverting ATP from other metabolic pathways (Niere et al., 1994). These fungicides have also been shown to inhibit several key enzymes needed for growth of fungi (Stehmann and Grant, 2000) and they may have an indirect effect by stimulating the plant's natural defense response against pathogen attack (Smillie et al, 1989).

Fosphite® and other phosphonate fungicides are biopesticides that can be used alone, but recommended to be incorporated into existing fungicide programs for many horticultural crops. There are a wide variety of phosphonate fungicides available to the horticultural industry, but there is limited information available on the differences in their demonstrated efficacy and type of application. Although there are various types of fungicides that contain various forms of phosphorus acids, they differ in trade name, formulation, label terminology, uses and price.

Recent results obtained from an IR-4 Biopesticide project (2007) indicate that phosphorous acid can reduce disease pressure from pecan scab. Three biopesticides, Fosphite®, Kaligreen®, and Sil-MATRIX™, and an alternative conventional product, Enable®, were applied to determine their efficacy against pecan scab. Pecan scab ratings were done in August and September 2007. Fosphite®, Fosphite® alternated with Abound®, and the chemical control (Abound® alternated with Enable® all season) were not significantly different from each other in severity of scab infection in 'Kiowa' or 'Schley' pecan cultivars. All 3 treatments had significantly less scab infection than the unsprayed control, Sil-matrix, and Kaligreen® treatments in 'Kiowa' and 'Schley'. Sil-matrix and Kaligreen® were not significantly different from the unsprayed control in scab infection severity.

Pecan scab is the most economically important disease of pecan in Louisiana. In commercial pecan orchards, scab annually causes lower yields and greater management costs. The fungus that causes pecan scab (*Cladesporium caryigenum*) can infect growing stems, leaves, and nut shucks. Severe early infection of nuts can result in complete crop loss. Less severe infections and infections that occur later in the season reduce the growth of nuts which lowers yields. Damage to susceptible varieties depends on temperature, leaf wetness and tissue age. Rainfall creates conditions that result in infection periods when the pathogen is present. Cultivar susceptibility varies widely from extremely susceptible to infrequent infection; however, the pathogen has

often developed new races and most cultivars that were once not easily infected are now considered susceptible. A 2007 survey of pecan nurseries reported that the top 4 pecan varieties sold were 'Desirable', 'Choctaw', 'Stuart', and 'Pawnee' (Graham, 2007), all of which are susceptible to scab infection. Because of the often transient nature of cultivar resistance, commercial pecan growers in Louisiana are dependent on fungicides for control of pecan scab. Fungicides are applied from early spring up to harvest primarily with orchard blast sprayers to 75-80% of the improved acreage and approximately 30% of the native acreage. However, most pecans produced in Louisiana come from native groves that have been improved and are managed with few inputs (no fungicide sprays). Native pecan acreage is often grazed by cattle and this presents limitations for the use of pesticides.

Project Approach

Pecan Scab Ratings

The drought conditions that prevailed over most of the 2011 season did severely limit scab lesion growth on Candy nuts in July through early September. However, late season rains, especially those associated with Tropical Storm Lee did result in some late season infection by the time the nuts were harvested in late September (Table 1). Even with minimal scab pressure, all treatments with foliarly applied fungicides had significantly less scab infection than the control treatment. Likewise, trees receiving soil applications of Fosphite and Nutri-phyte, or foliar application of commercial fungicides had significantly less scab infection compared to the control trees. In 2012, scab pressure was high (Table 2), resulting in only two treatments being better than the control. Trees receiving a rotation of commercial fungicides had significantly less scab than all other soil treatments and the control. The soil applied Fosphite trees had significantly less scab than the control, but was not significantly different from the other phosphorous acid fungicide treatments. For foliar applications, all fungicide treatments were significantly better than the control trees, and the rotation of commercial fungicides was significantly better than all of the phosphorous acid treatments.

Even though the orchard in Red River parish was irrigated, the low humidity and above normal temperatures also severely limited scab growth on the Desirable pecan cultivar in 2011 (Table 3). The drought caused a delay in shucksplit so I was unable to harvest the Desirable shucks and nuts until early November, approximately 3 weeks later than usual. The control trees in the foliar and soil application tests had the highest scab rating of 1.5, but this is equivalent to only a couple of lesions on the shuck. There were no significantly differences among any of the treatment and the control. Pecan scab pressure was higher in 2012, resulting in severe infection on the control shucks (Table 4). All treatments of foliarly applied fungicides had significantly less scab infection than the controls. In contrast, for the soil applications, only Rampart had significantly less scab infection compared to the control. The trees receiving the rotation of foliarly applied commercial fungicides was significantly better than all of the phosphorous acid compounds applied to the soil and the control trees. The data for Candy and Desirable possibly suggests that soil applied phosphorous acid may provide some protection in low scab pressure situations, but had severe infections similar to control trees when the scab pressure was severe. Results were comparable to research reported on apple scab by Percival et. al. (2009). They found that phosphite provided a useful degree of scab control when used throughout the season compared to synthetic fungicides, but disease suppression was not as good as a conventional fungicide.

Table 1. Scab ratings on the shuck using the Hunter-Roberts scale on Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard located in Point Coupee Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Scab Rating	Scab Rating	Scab Rating	Scab Rating
	Early September	At Harvest	Early September	At Harvest
Control	2.6 a	3.3 a	2.2 a	2.4 a
Fosphite	2.2 b	1.8 bc	2.0 a	1.8 bc
Nutri-Phyte	1.6 c	1.9 b	2.2 a	1.9 bc
Phostrol	1.5 c	2.0 b	2.1 a	2.2 ab
Rampart	1.8 bc	2.0 b	2.0 a	2.0 ab
Commercial Spray	2.0 bc	1.5 c	1.6 a	1.5 c

Means in the same column with different letters are significantly different ($p<0.05$).

Table 2. Scab ratings on the shuck using the Hunter-Roberts scale on Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard located in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications		Soil Applications	
Treatment	Scab Rating	Scab Rating	Scab Rating	Scab Rating
	Early September	At Harvest	Early September	At Harvest
Control	4.9 a	4.9 a	4.7 a	5.0 a
Fosphite	4.1 bc	3.4 d	4.5 a	4.7 b
Nutri-Phyte	3.6 c	3.6 cd	4.8 a	4.9 ab
Phostrol	4.2 b	4.0 b	4.7 a	4.8 ab
Rampart	4.0 bc	3.8 bc	4.8 a	4.9 ab
Commercial Spray	4.0 bc	2.9 e	3.4 b	2.4 c

Means in the same column with different letters are significantly different ($p<0.05$).

Table 3. Scab ratings using the Hunter-Roberts scale on Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Scab Rating	Scab Rating	Scab Rating	Scab Rating
	Early September	At Harvest	Early September	At Harvest
Control	1.0 a	1.5 a	1.1 a	1.5 a
Fosphite	1.0 a	1.2 a	1.0 a	1.4 a
Nutri-Phyte	1.0 a	1.4 a	1.0 a	1.4 a
Phostrol	1.0 a	1.4 a	1.0 a	1.4 a
Rampart	1.0 a	1.4 a	1.0 a	1.2 a
Commercial Spray	1.0 a	1.3 a	1.0 a	1.1 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 4. Scab ratings using the Hunter-Roberts scale on Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications		Soil Applications	
Treatment	Scab Rating	Scab Rating	Scab Rating	Scab Rating
	Early September	At Harvest	Early September	At Harvest
Control	1.0 a	4.2 a	1.1 a	4.9 a
Fosphite	1.0 a	1.4 b	1.0 a	4.8 a
Nutri-Phyte	1.0 a	1.6 b	1.0 a	4.8 a
Phostrol	1.0 a	1.5 b	1.0 a	4.8 a
Rampart	1.0 a	1.5 b	1.0 a	4.6 b
Commercial Spray	1.0 a	1.2 b	1.0 a	1.3 c

Means in the same column with different letters are significantly different ($p<0.05$).

Leaf Nutrition

Leaflets collected in 2011 from trees receiving foliar applications of phosphites had no significant differences in the levels of B, Ca, Cu, Fe, Mg, Mn, N, P, or K. Significant differences in S and Zn for foliar and soil applications are shown in Table 5. In the soil application group, trees receiving standard commercial fungicides had significantly higher Ca than Phostrol treated trees and higher Mg than Nutri-Phyte treated trees. In 2012, foliar application of Nutri-Phyte increased phosphorus concentrations compared to Fosphite, control, and commercial fungicide treated trees (Table 6). Foliar application of phosphite compounds generally resulted in an increase in potassium concentrations, but this result did not occur following soil applications. In the foliar application group, Phostrol increased calcium levels over Fosphite and control trees; Nutri-Phyte and Phostrol increased sodium concentration over the control, Fosphite, Rampart, and commercial fungicide treated trees; and Rampart significantly increased boron compared to control trees (Table 7). Trees receiving foliar applications of Phostrol had significantly high levels of iron than control, Fosphite, and Rampart treated trees (Table 8).

Table 5. Sulfur and zinc levels in leaflets collected in July from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Sulfur	Zinc	Sulfur	Zinc
	Percent	□g/kg	Percent	□g/kg
Control	69 a	40.9 a	66 a	42.4 a
Fosphite	68 a	43.0 a	68 a	41.8 a
Nutri-Phyte	67 a	42.5 a	64 a	43.1 a
Phostrol	68 a	39.8 a	68 a	42.7 a
Rampart	67 a	41.0 a	67 a	43.2 a
Commercial Spray	64 a	43.0 a	66 a	43.8 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 6. Nitrogen, phosphorus, potassium, and sulfur levels in leaflets collected in July from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% N	% P	% K	% S	% N	% P	% K	% S

Control	2.26 a	0.145 bc	0.64 c	0.19 a	2.29 ab	0.15 a	0.66 a	0.20 a
Fosphite	2.28 a	0.138 c	0.68 abc	0.18 a	2.32 ab	0.15 a	0.69 a	0.19 ab
Nutri-Phyte	2.29 a	0.160 a	0.72 ab	0.20 a	2.42 a	0.15 a	0.70 a	0.20 a
Phostrol	2.29 a	0.152 ab	0.73 a	0.19 a	2.37 ab	0.14 a	0.64 a	0.20 ab
Rampart	2.29 a	0.154 ab	0.71 abc	0.20 a	2.35 ab	0.14 a	0.67 a	0.19 ab
Commercial Spray	2.23 a	0.135 c	0.65 bc	0.20 a	2.26 b	0.13 b	0.65 a	0.18 b

Means in the same column with different letters are significantly different ($p<0.05$).

Table 7. Calcium, magnesium, sodium, and boron levels in leaflets collected in July from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% Ca	% Mg	Na	B	% Ca	% Mg	Na	B
			□g/kg	□g/kg			□g/kg	□g/kg
Control	2.04 b	0.43 a	56 d	75 b	2.20 abc	0.54 a	83 a	81 ab
Fosphite	2.06 b	0.47 a	56 d	87 ab	2.24 ab	0.52 ab	89 a	74 b
Nutri-Phyte	2.30 ab	0.53 a	110 b	88 ab	1.96 c	0.40 b	76 a	72 b
Phostrol	2.36 a	0.56 a	148 a	80 ab	1.96 c	0.49 ab	80 a	85 ab
Rampart	2.21 ab	0.54 a	68 cd	93 a	1.99 bc	0.44 ab	81 a	95 a
Commercial Spray	2.24 ab	0.54 a	82 c	83 ab	2.38 a	0.55 a	86 a	96 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 8. Iron, manganese, zinc, and copper levels in leaflets collected in July from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	Fe	Mn	Zn	Cu	Fe	Mn	Zn	Cu
	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg
Control	49.0 c	686 a	133 ab	11.8 a	53.3 a	722 a	143 a	11.7 ab
Fosphite	49.2 c	745 a	105 c	10.3 a	48.3 a	913 a	128 a	11.1 ab
Nutri-Phyte	56.7 abc	909 a	117 bc	11.3 a	48.6 a	814 a	136 a	10.7 b
Phostrol	61.7 a	921 a	131 ab	11.5 a	47.8 a	859 a	124 a	11.6 ab
Rampart	53.0 bc	784 a	127 b	11.0 a	46.9 a	959 a	139 a	12.1 a
Commercial Spray	58.8 ab	1006 a	152 a	11.2 a	53.4 a	920 a	129 a	10.9 b

Means in the same column with different letters are significantly different ($p<0.05$).

There were no significant differences in leaf nutrient concentrations of Al, B, Ca, Mg, Mn, or S (data not shown) in trees receiving foliar applications of phosphite. The four most commonly monitored nutrients in commercial pecan production are nitrogen, phosphorus, potassium, and zinc (Table 9). Nitrogen and zinc concentrations were deficient in several of the treatments. Commercially, nitrogen concentrations should be 2.5% or higher and zinc concentrations should be 50 ppm or higher. In regard to soil application of phosphite, there were no significant differences in leaflet nutrient levels of Al, B, Cu, Fe, Mg, Mn, K, or Zn. Concentrations of N, P, Ca, and S had some significant differences shown in Table 10. In 2012, the trees receiving the rotation of commercial fungicides was routinely had the lowest concentration of a nutrient and it could be argued that it could have simply been due to a dilution factor. The commercial trees had significantly less scab and had larger, healthier leaves than the other treatments, thus allowing the nutrients to be not as concentrated as in stressed, rosette leaves. While not always statistically different, trees receiving the rotation of commercial fungicides had the lowest concentration of phosphorus, potassium, sulfur, magnesium, boron, and iron (Tables 11-13). Foliar applications of Nutri-Phyte and Phostrol increased the concentration of sodium compared to all other treatments.

Table 9. Elemental concentrations of leaflets collected in July from Desirable pecan variety receiving foliar applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2011.

Treatment	Nitrogen	Phosphorus	Potassium	Zinc
	Percent	Percent	Percent	g/kg
Control	2.55 a	0.11 b	0.68 b	50 b
Fosphite	2.49 ab	0.12 b	0.76 ab	42 b
Nutri-Phyte	2.52 ab	0.14 a	0.74 ab	44 b
Phostrol	2.52 ab	0.14 a	0.74 ab	46 b
Rampart	2.47 ab	0.14 a	0.87 a	35 ab
Commercial Spray	2.40 b	0.12 b	0.71 b	66 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 10. Elemental concentrations of leaflets collected in July from Desirable pecan variety receiving soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2011.

Treatment	Nitrogen	Phosphorus	Calcium	Sulfur
	Percent	Percent	Percent	Percent
Control	2.56 a	0.11 ab	1.44 ab	0.22 c
Fosphite	2.47 b	0.11 b	1.29 b	0.23 bc
Nutri-Phyte	2.47 b	0.11 ab	1.55 ab	0.23 bc
Phostrol	2.52 ab	0.12 a	1.74 a	0.24 a
Rampart	2.53 ab	0.11 ab	1.49 ab	0.24 ab
Commercial Spray	2.47 b	0.11 ab	1.37 b	0.23 bc

Means in the same column with different letters are significantly different ($p<0.05$).

Table 11. Nitrogen, phosphorus, potassium, and sulfur levels in leaflets collected in August from Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012..

	Foliar Applications				Soil Applications			
Treatment	% N	% P	% K	% S	% N	% P	% K	% S
Control	2.44 ab	0.115 a	0.66 a	0.20 a	2.29 ab	0.15 a	0.66 a	0.19 ab
Fosphite	2.38 b	0.113 ab	0.63 a	0.20 a	2.32 ab	0.15 a	0.69 a	0.19 a
Nutri-Phyte	2.42 ab	0.114 a	0.63 a	0.19 a	2.42 a	0.15 a	0.70 a	0.19 ab
Phostrol	2.52 a	0.107 abc	0.64 a	0.20 a	2.37 ab	0.14 a	0.64 a	0.19 ab
Rampart	2.46 ab	0.103 bc	0.68 a	0.19 a	2.35 ab	0.14 a	0.67 a	0.18 bc
Commercial Spray	2.41 ab	0.100 c	0.58 a	0.19 a	2.26 b	0.13 b	0.65 a	0.17 c

Means in the same column with different letters are significantly different ($p<0.05$).

Table 12. Calcium, magnesium, sodium, and boron levels in leaflets collected in August from Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% Ca	% Mg	Na	B	% Ca	% Mg	Na	B
			□g/kg	□g/kg			□g/kg	□g/kg
Control	1.91 a	0.52 a	64 d	140 a	1.75 ab	0.47 a	70 a	120 a
Fosphite	1.72 a	0.48 a	90 cd	135 a	1.44 b	0.44 a	73 a	126 a
Nutri-Phyte	1.71 a	0.49 a	315 b	149 a	1.70 ab	0.44 a	73 a	112 a
Phostrol	1.83 a	0.52 a	369 a	138 a	1.85 a	0.43 a	72 a	111 a
Rampart	1.74 a	0.47 a	118 c	142 a	1.62 ab	0.40 a	68 a	106 a
Commercial Spray	1.82 a	0.46 a	83 cd	116 b	1.42 b	0.41 a	75 a	110 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 13. Iron, manganese, zinc, and copper levels in leaflets collected in August from of Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	Fe	Mn	Zn	Cu	Fe	Mn	Zn	Cu
	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg
Control	64.8 a	643 a	22 b	7.6 a	59.0 ab	539 a	43 a	7.6 a
Fosphite	58.3 ab	386 a	30 ab	6.9 a	56.0 ab	396 a	36 ab	7.2 ab
Nutri-Phyte	54.9 ab	475 a	42 a	8.3 a	59.2 ab	485 a	42 ab	6.7 ab
Phostrol	58.6 ab	462 a	36 ab	8.3 a	64.2 a	546 a	30 ab	6.4 b
Rampart	54.8 ab	369 a	26 b	7.1 a	55.7 ab	549 a	29 b	6.5 b
Commercial Spray	52.3 b	420 a	33 ab	8.1 a	52.3 b	427 a	28 b	6.4 b

Means in the same column with different letters are significantly different ($p<0.05$).

Pecan Nut Shucksplit

As was discussed in the weather section, the drought adversely affected the normal opening of the pecan shucks. The drought caused a delay in shucksplit of the Desirable shucks and nuts at the Red River orchard such that harvest was delayed until early November, approximately 3 weeks later than usual. The drought effect may have masked any delays in shucksplit due to foliar phosphite application. In 2012, it was possible to collect nut samples from all trees in the soil application group, as well as the control trees and the commercial fungicide trees in the foliar application group on Sept. 7, 2012, but shucksplit had not occurred on the other treatments (Table 14). Part of the foliarly treated phosphite trees were able to be harvested on Sept. 14, 2012, with the remaining trees harvested on Sept. 21, 2012. Having observed this phenomenon on the Candy trees, it was decided to rate the Desirable trees prior to harvest (Table 15). Similar results were recorded on shucksplit of Desirable nuts as was observed on the Candy nuts, with all of the foliar phosphite treatments having a significantly lower incidence of shucksplit than the other treatments. This could have very important implications on late season application of phosphites, especially in pecan production areas striving for early harvest for the gift pack market.

Table 14. Percentage of trees harvested by date of Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications			Soil Applications
Treatment	Percentage of trees with completed harvest by date			Harvest date
	9/7/2012	9/14/2012	9/21/2012	9/7/2012
Control	100	100	100	100
Fosphite	0	33	100	100
Nutri-Phyte	0	0	100	100
Phostrol	0	33	100	100
Rampart	0	50	100	100
Commercial Spray	100	100	100	100

Table 15. Percent shucksplit of 30 clusters of Desirable pecan variety receiving foliar and soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana on October 5, 2012.

	Foliar Applications	Soil Applications
Treatment	Percent Shucksplit	Percent Shucksplit
	Of 30 Clusters	Of 30 Clusters
Control	86.6 a	83.2 a
Fosphite	45.2 b	72.4 a
Nutri-Phyte	21.6 c	73.4 a
Phostrol	42.8 b	77.8 a
Rampart	42.3 b	84.5 a
Commercial Spray	81.5 a	85.8 a

Means in the same column with different letters are significantly different ($p<0.05$).

Shuck Nutrition

For shuck tissue collected at Candy nut harvest, there were no significant differences in any of the nutrients measured in the foliar application group and only B, Mg, and Zn had differences in the soil application group (data not shown) in 2011. For the nutritional status of the shucks in 2012, all of the phosphorous acid foliar applications resulted in elevated levels of potassium, with Fosphite, Nutri-Phyte, and Phostrol having significantly higher levels compared to the control and commercial fungicide rotation (Table 16). This would be expected since all of the compounds tested are composed entirely or partially of potassium phosphite, so the trees were receiving foliar potassium sprays in addition to the phosphites. In contrast, trees receiving soil applications had slightly lower levels than the control and commercial fungicide rotation. Sodium was another macronutrient with elevated levels following foliar application (Table 17). Nutri-Phyte and Phostrol contain ammonium, potassium, and sodium phosphites, while Fosphite and Rampart are composed of strictly potassium phosphites. Trees receiving foliar applications of Nutri-Phyte and Phostrol had significantly higher concentrations of sodium than any other treatment. Additionally, all trees receiving foliar sprays had significantly higher concentrations of sodium compared to trees not receiving foliar sprays, suggesting the water source for sprayer contained elevated levels of sodium. For micronutrients, the trend was for trees receiving phosphite applications to be slightly depressed compared to the control trees (Table 18).

Table 16. Nitrogen, phosphorus, potassium, and sulfur levels in shucks collected in September from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% N	% P	% K	% S	% N	% P	% K	% S
Control	1.57 a	0.308 a	5.72 b	0.27 a	1.60 a	0.28 a	5.40 ab	0.27 a
Fosphite	1.69 a	0.333 a	6.63 a	0.28 a	1.50 ab	0.25 ab	5.18 ab	0.25 a
Nutri-Phyte	1.66 a	0.357 a	6.45 a	0.29 a	1.58 a	0.25 ab	4.98 b	0.26 a
Phostrol	1.55 a	0.338 a	6.43 a	0.27 a	1.47 ab	0.26 ab	5.28 ab	0.27 a
Rampart	1.56 a	0.310 a	6.28 ab	0.30 a	1.56 ab	0.27 a	5.42 ab	0.29 a
Commercial Spray	1.49 a	0.250 b	5.81 b	0.27 a	1.37 b	0.23 b	5.60 a	0.25 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 17. Calcium, magnesium, sodium, and boron levels in shucks collected in September from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% Ca	% Mg	Na	B	% Ca	% Mg	Na	B
			□g/kg	□g/kg			□g/kg	□g/kg
Control	0.99 a	0.39 a	74 c	27 a	0.92 ab	0.35 ab	105 b	25 a
Fosphite	0.90 a	0.37 a	153 b	28 a	0.94 ab	0.36 ab	99 b	24 a
Nutri-Phyte	0.88 a	0.37 a	379 a	27 a	0.91 ab	0.30 b	98 b	23 a
Phostrol	0.89 a	0.38 a	376 a	26 ab	0.99 a	0.39 a	98 b	24 a
Rampart	0.84 ab	0.37 a	177 b	27 a	1.04 a	0.35 ab	100 b	25 a
Commercial Spray	0.71 b	0.33 a	177 b	24 b	0.80 b	0.35 ab	183 a	24 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 18. Iron, manganese, zinc, and copper levels in shucks collected in September from Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	Fe	Mn	Zn	Cu	Fe	Mn	Zn	Cu
	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg
Control	27 a	420 a	81 a	16.3 a	18 a	365 a	72 a	13.7 ab
Fosphite	20 b	333 a	68 b	15.1 a	15 a	419 a	61 b	11.9 b
Nutri-Phyte	20 b	396 a	71 ab	17.5 a	15 a	404 a	71 a	12.5 ab
Phostrol	20 b	376 a	73 ab	15.4 a	17 a	487 a	66 ab	13.1 ab
Rampart	18 b	335 a	71 ab	15.3 a	16 a	541 a	72 a	14.4 a
Commercial Spray	17 b	358 a	68 b	14.8 a	17 a	373 a	60 b	13.5 ab

Means in the same column with different letters are significantly different ($p<0.05$).

For Desirable trees in 2011, shuck tissue collected at the time of nut harvest from trees receiving foliar applications of phosphites did not have any significant differences in Al, Ca, Fe, Mg, N, P, K, and S (data not shown). Nutrients which had differences were generally limited to a single treatment or two being different. For B, trees receiving foliar applications of Fosphite or Phostrol had significantly lower concentrations compared to the control trees. Manganese was significantly higher in control trees compared to all other treatments. Trees receiving standard commercial fungicides had higher levels of Zn compared with Fosphite and Rampart treated trees. For soil applications, harvested shucks had no significant differences in the levels of Al, Ca, Cu, N, P, K, S, and Zn. Trees receiving standard commercial fungicides had significantly higher B and Mg levels than trees receiving Fosphite, but lower concentrations of Fe than trees receiving Rampart treatments. Rampart treated trees also had higher concentrations of Mn than Fosphite treated trees.

In 2012, nutrient concentrations of harvested shucks were fairly inconsistent, with only a few clear differences being evident. Trees receiving the rotation of commercial fungicides tended to have lower levels of macronutrients than control trees or those receiving phosphite treatment (Table 19). This could have simply been due to a dilution factor. The commercial trees had significantly less scab and had larger, healthier leaves than the other treatments, thus allowing the nutrients to be not as concentrated as in stressed, rosette leaves. As previously discussed, foliar applications of Nutri-Phyte and Phostrol had significantly higher concentrations of sodium compared to all other treatments (Table 20). The same trend found in macronutrients was also present in the micronutrients. Trees receiving the rotation of commercial fungicides had the lowest concentration of iron, manganese, and copper for trees receiving foliar applications, and the lowest concentration of iron, manganese, zinc, and copper of tree receiving soil applications (Table 21).

Table 19. Nitrogen, phosphorus, potassium, and sulfur levels in shucks collected in October from Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% N	% P	% K	% S	% N	% P	% K	% S

Control	1.38 a	0.195 a	5.08 a	0.25 a	1.23 ab	0.17 a	4.41 a	0.19 b
Fosphite	1.15 b	0.154 b	5.05 a	0.21 ab	1.25 ab	0.18 a	4.48 a	0.20 ab
Nutri-Phyte	1.25 ab	0.181 ab	4.47 a	0.22 ab	1.31 a	0.19 a	4.23 a	0.20 ab
Phostrol	1.20 ab	0.165 ab	4.59 a	0.22 ab	1.29 a	0.19 a	4.62 a	0.21 ab
Rampart	1.20 ab	0.178 ab	4.45 a	0.22 ab	1.28 ab	0.17 a	4.79 a	0.22 a
Commercial Spray	1.13 b	0.152 b	4.87 a	0.20 b	1.11 b	0.13 b	4.50 a	0.19 b

Means in the same column with different letters are significantly different ($p<0.05$).

Table 20. Calcium, magnesium, sodium, and boron levels in shucks collected in October from Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	% Ca	% Mg	Na	B	% Ca	% Mg	Na	B
			□g/kg	□g/kg			□g/kg	□g/kg
Control	0.87 a	0.434 a	50 cd	24.0 a	0.87 abc	0.40 a	54 b	25 ab
Fosphite	0.79 a	0.373 ab	36 d	20.4 b	0.77 bc	0.45 a	55 b	26 a
Nutri-Phyte	0.77 a	0.358 b	100 a	20.0 b	0.90 ab	0.39 a	50 b	25 ab
Phostrol	0.81 a	0.365 ab	116 a	19.5 b	0.86 abc	0.40 a	56 b	23 b
Rampart	0.84 a	0.363 ab	71 b	21.6 b	1.03 a	0.42 a	70 a	27 a
Commercial Spray	0.73 a	0.343 b	63 bc	22.1 ab	0.69 c	0.43 a	58 b	24 b

Means in the same column with different letters are significantly different ($p<0.05$).

Table 21. Iron, manganese, zinc, and copper levels in shucks collected in October from of Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications				Soil Applications			
Treatment	Fe	Mn	Zn	Cu	Fe	Mn	Zn	Cu
	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg	□g/kg
Control	21 a	248 a	21 ab	8.6 a	21 ab	223 ab	38 a	8.8 a
Fosphite	16 b	121 b	14 b	5.2 b	21 ab	157 bc	35 a	8.2 a
Nutri-Phyte	16 b	162 b	20 ab	6.9 ab	24 ab	196 abc	32 a	8.3 a
Phostrol	16 b	138 b	22 ab	6.3 b	25 a	174 bc	27 a	8.0 a
Rampart	18 ab	140 b	15 b	5.5 b	25 a	254 a	24 a	7.5 a
Commercial Spray	17 b	117 b	30 a	7.2 ab	19 b	133 c	26 a	7.5 a

Means in the same column with different letters are significantly different ($p<0.05$).

Pecan Nut Size and Percent Kernel

There was a considerable difference in nut size and percent kernel in 2011 and 2012. In 2011, the crop was light and nut size was correspondingly large, however, kernel shellout was very low, ranging from 40-44 percent (average percent kernel for Candy is typically 48%) (Table 22). Scab pressure was low and there were no significant differences among treatments in foliar or soil applications. In 2012, crop load was heavy and disease pressure was considerably higher, resulting in a much small nut and a below average shellout (Table 23). All foliar applications of phosphite compounds and the commercial fungicides resulted in larger nut size compared to the control nuts. The commercial rotation of fungicides and Fosphite had a significantly higher percent kernel than the control and Nutri-Phyte, but not Rampart or Phostrol. For soil applications, there was no significant difference in nut size, but the rotation of commercial fungicides and Fosphite had a significantly higher percent kernel compared to the control, Nutri-Phyte, and Rampart, but not Phostrol. Gottwald and Bertrand (1983) reported that early season scab infection were result in a significant reduction in nut size and percent kernel, but late season infection would have little effect on nut quality.

Table 22. Nuts per pound and percent kernel of Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Nuts per Pound	Percent Kernel	Nuts per Pound	Percent Kernel
Control	69 a	40.9 a	66 a	42.4 a
Fosphite	68 a	43.0 a	68 a	41.8 a
Nutri-Phyte	67 a	42.5 a	64 a	43.1 a
Phostrol	68 a	39.8 a	68 a	42.7 a
Rampart	67 a	41.0 a	67 a	43.2 a
Commercial Spray	64 a	43.0 a	66 a	43.8 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 23. Nuts per pound and percent kernel of Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications		Soil Applications	
Treatment	Nuts per Pound	Percent Kernel	Nuts per Pound	Percent Kernel
Control	153 a	44.0 c	153 a	44.0 b
Fosphite	107 b	47.1 a	131 a	46.4 a
Nutri-Phyte	96 b	44.4 bc	133 a	43.9 b
Phostrol	105 b	45.7 abc	136 a	45.3 ab
Rampart	98 b	46.2 ab	135 a	43.1 b
Commercial Spray	98 b	47.7 a	95 a	47.0 a

Means in the same column with different letters are significantly different ($p<0.05$).

Even though the orchard in Red River parish was irrigated most of the season, the high heat and drought conditions had a slight impact on nut size, but a fairly significant influence on percent kernel

of the mature nuts in 2011. Desirable pecans are usually around 38 nuts/lb. and shell out about 54 percent kernel. Harvested nuts in the tests (Table 24) ranged from 39-46 nuts/lb. and roughly 48-52% kernel. This decrease cannot be attributed to scab because infection was minimal. For foliar applications, the control and commercial fungicides had significantly larger nuts than Rampart; and the rotation of commercial fungicides had a significantly higher percent kernel than Fosphite. For soil applications there were no differences in nut size and commercial fungicides had a significantly higher percent kernel Fosphite. In 2012, scab pressure was much higher and probably did impact nut size and shellout. Harvested nuts in the tests (Table 25) ranged from 39-46 nuts/lb. and roughly 47-54% kernel. For foliar applications, there were no differences in nut size among treatments. Trees receiving foliar applications of Fosphite, Phostrol, or the rotation of commercial fungicides had a significantly higher percent kernel than control trees. For soil applications, trees receiving the rotation of commercial fungicides had significantly larger nuts than the control, Fosphite, Nutri-Phyte, and Phostrol, but not Rampart. However, it only had a significantly higher percent kernel than Fosphite.

Table 24. Nuts per pound and percent kernel of Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Nuts per Pound	Percent Kernel	Nuts per Pound	Percent Kernel
Control	41 b	50.2 ab	41 a	50.8 ab
Fosphite	44 ab	48.5 b	39 a	49.4 b
Nutri-Phyte	45 ab	50.1 ab	40 a	50.8 ab
Phostrol	45 ab	49.3 ab	40 a	50.5 ab
Rampart	46 a	49.2 ab	39 a	50.4 ab
Commercial Spray	42 b	51.1 a	41 a	51.7 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 25. Nuts per pound and percent kernel of Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications		Soil Applications	
Treatment	Nuts per Pound	Percent Kernel	Nuts per Pound	Percent Kernel
Control	45 a	49.2 b	45 ab	48.7 bc
Fosphite	44 a	52.2 a	46 a	46.9 c
Nutri-Phyte	45 a	51.4 ab	46 a	48.3 bc
Phostrol	44 a	52.8 a	46 a	51.0 ab
Rampart	42 a	51.4 ab	42 bc	50.3 bc
Commercial Spray	42 a	53.6 a	39 c	54.0 a

Means in the same column with different letters are significantly different ($p<0.05$).

Kernel Quality

In 2011, there were no significant differences in phenolic content of kernels collected from trees in the foliar or soil application groups. Nuts harvested from trees treated with standard commercial fungicides had higher lipid levels than all other treatments in foliar applied treatments and significantly higher lipid levels than control trees in the soil application group (Table 26). Just as in the previous year, there were no significant differences in phenolic content of kernels collected from trees in the foliar or soil application groups (Table 27). Nuts harvested from trees treated with standard commercial fungicides had higher lipid levels than all other treatments in foliar applied treatments except the control, and significantly higher lipid levels than control trees in the soil application group. Rampart had significantly higher lipid levels than the control and Nutri-Phyte in the soil application group.

Table 26. Total phenolics and lipid concentration of Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Total Phenolics	Lipid	Total Phenolics	Lipid
	mg GAE/gm	Percent	mg GAE/gm	Percent
Control	11.3 a	69.9 b	14.3 a	70.1 b
Fosphite	12.8 a	70.1 b	12.9 a	70.9 ab
Nutri-Phyte	12.1 a	69.7 b	12.5 a	70.2 ab
Phostrol	12.2 a	69.5 b	13.0 a	70.8 ab
Rampart	13.6 a	69.5 b	12.9 a	71.1 ab
Commercial Spray	13.6 a	72.1 a	14.6 a	71.4 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 27. Total phenolics and lipid concentration of Candy pecan variety receiving foliar or soil applications of phosphites at the Verl Day orchard in Point Coupee Parish, Louisiana in 2012.

	Foliar Applications		Soil Applications	
Treatment	Total Phenolics	Lipid	Total Phenolics	Lipid
	mg GAE/gm	Percent	mg GAE/gm	Percent
Control	6.6 a	70.1 ab	8.9 a	66.4 c
Fosphite	6.2 a	70.4 bc	9.1 a	68.2 abc
Nutri-Phyte	7.2 a	67.6 c	8.1 a	67.8 bc
Phostrol	6.5 a	69.0 bc	9.0 a	68.5 abc
Rampart	7.4 a	69.0 bc	8.3 a	71.4 a
Commercial Spray	7.4 a	72.1 a	8.7 a	70.5 ab

Means in the same column with different letters are significantly different ($p<0.05$).

Previous studies on pecan kernels have reported total phenolic values of 7-14 mg GAE/gm pecan kernel and oil contents of 70-74%. It has been shown that genetics, harvest season, cultivation methodology, soil type, nut maturity, and environmental conditions can influence the phytochemical composition of nuts. Harvested Desirable nuts in 2011 in the phosphite test ranged from 12 to 16 mg GAE/gm of pecan kernel. Trees receiving foliar applications of Fosphite and Phostrol produce nuts with a significantly higher concentration of total phenolics when compared to control trees and trees receiving standard commercial fungicide sprays (Table 28). Lipid contents were in line with other reports, but gave conflicting results. Control trees in the ground application group had the

lowest oil content compared to other treatments, while control trees in the foliar application group had the highest oil content when compared to trees receiving fungicide sprays. In 2012, kernels from control trees contained a significantly higher concentration of total phenolics than Rampart, but did not differ from other treatments (Table 29). There were no significant differences in total phenolics in the soil application group. Kernels from control trees had a significantly higher level of lipids than all treatments in the foliar application group except trees receiving the rotation of commercial fungicides. However, in the soil application group, the control and Fosphite were significantly higher in lipids than Nutri-Phyte.

Table 28. Total phenolics and lipid concentration of Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2011.

	Foliar Applications		Soil Applications	
Treatment	Total Phenolics	Lipid	Total Phenolics	Lipid
	mg GAE/gm	Percent	mg GAE/gm	Percent
Control	12.7 b	72.0 a	14.1 ab	71.7 b
Fosphite	16.6 a	70.4 bc	16.3 a	72.2 b
Nutri-Phyte	14.3 ab	70.0 bc	14.5 ab	71.7 b
Phostrol	16.7 a	69.5 bc	13.1 ab	72.1 b
Rampart	15.3 ab	69.2 c	15.4 ab	73.0 ab
Commercial Spray	13.2 b	70.6 b	12.0 b	74.0 a

Means in the same column with different letters are significantly different ($p<0.05$).

Table 29. Total phenolics and lipid concentration of Desirable pecan variety receiving foliar or soil applications of phosphites at the Roger Wilson orchard in Red River Parish, Louisiana in 2012.

	Foliar Applications		Soil Applications	
Treatment	Total Phenolics	Lipid	Total Phenolics	Lipid
	mg GAE/gm	Percent	mg GAE/gm	Percent
Control	11.2 a	73.7 a	12.8 a	74.0 a
Fosphite	10.7 ab	70.9 bc	11.6 a	74.0 a
Nutri-Phyte	10.7 ab	70.2 c	12.7 a	65.2 b
Phostrol	10.7 ab	70.5 c	11.0 a	68.0 ab
Rampart	8.5 b	71.2 bc	11.3 a	71.6 ab
Commercial Spray	9.2 ab	72.4 ab	10.3 a	70.5 ab

Means in the same column with different letters are significantly different ($p<0.05$).

Goals and Outcomes Achieved

The *objectives* of this research are a) to compare the efficacy of foliar applications of Fosphite®, Rampart®, Phostrol® and Nutri-phite® on pecan scab (*Cladesporium caryigenum*) to a commonly used conventional fungicide, Enable®, and b) to determine if soil applications of Fosphite®, Rampart®, Phostrol® and Nutri-phite® provide any protection against pecan scab infection.

Two pecan orchards will be used in the phosphite tests in 2011. One orchard is in Red River Parish, at the Roger Wilson farm located at Harmon, LA (about 30 miles northwest of Nachitoches, LA). The 'Desirable' pecan variety was grafted onto native seedling pecan rootstock in 2003. The trees are planted on a 45 ft diagonal pattern with 21.5 trees per acre. The second location is in Pointe

Coupee Parish, at the Verl Day farm located near Bachelor, LA (about 50 miles northwest of Baton Rouge, LA). The 'Candy' pecan variety was grafted onto 'Stuart' rootstock in 1998. The trees are on a 50 ft diagonal pattern with 17.4 trees per acre.

The middle pair of leaflets from the middle leaf on current season's growth were collected and washed according to the procedure of Smith and Storey (1976) before being dried at 60 °C. The dried tissue was ground in a Wiley mill to pass a 40-mesh screen. Leaflet samples were analyzed for nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, sodium, boron, iron, manganese, zinc, copper, aluminum, and molybdenum concentrations at the LSU Soil Testing & Plant Analysis Lab. The nutrient values were entered into an excel spreadsheet and statistical analyzed using SAS.

Nut clusters were rated for pecan scab infection using the system of Hunter-Roberts (1978; Figure 1). Initial scab ratings were made from the ground on attached nut clusters in the tree. The final scab rating was done on harvested nuts prior to separating the shucks and nuts into individual samples. The shucks were handled using the procedure described above for the collected leaflet samples. The nuts were dried in the laboratory before postharvest analysis was conducted on the nuts and kernels. The shuck samples were stored on ice in the field and refrigerated in the lab until they could be washed by the method of Smith and Storey, 1976. The shucks were washed to remove all spray residues which may influence analysis results. All leaf and shuck samples were washed in a 1% nonionic detergent, rinsed in distilled water, then washed in a 1 % hydrochloric acid solution, followed by rinsing in three separate distilled water baths. The leaflets and shucks were dried in an oven and dry weights measured. The leaflet and shuck samples were ground in a Wiley mill to pass a 40 mesh screen and the ground powder sent to the LSU Soil Testing & Plant Analysis Lab for analysis.

Nut weight was measured prior to cracking and shelling. After shelling, the kernel weight was determined and the nuts/lb and percent kernel calculated for each sample. The kernels were ground into a full-fat flour using a Presto food processor prior to biochemical analysis. Pecan kernels were analyzed for total phenolics and oil content using standard lab procedures. The total phenolic content was estimated by the Folin-Ciocalteu colorimetric method described by Singleton et al. (1999). Approximately 250 mg of pecan kernel flour was extracted with methanol:water (1:1 volume) for two hours in a 90 C water bath. The cooled samples were centrifuged and the eluent used in the phenolic assay. Following reaction with the Folin-Ciocalteu reagent, absorbance of the reaction mixture was read at 760 nm in a Spectronic Genesys 5 spectrophotometer. The amount of phenolics in the extract was determined from the standard curve using gallic acid as a reference. The total phenolic content of the kernels was expressed as mg Gallic Acid Equivalent (GAE)/g of pecan kernel. Lipid analysis was determined using AOAC Official Method 948.22. Pecan full fat flours were weighed in cellulose thimbles and extracted with petroleum ether in a soxlet apparatus. The extracted thimbles were dried at ambient temperature in a fume hood to remove residual petroleum ether and the sample weights used to calculate the lipid content of the pecan kernels.

The research characterized the efficacy of biofungicides and fertilizers to protect pecan nuts from pecan scab in homeowner and commercial pecan trees. Prior to this study, no information was available using this application technique to control pecan scab. Completion of this project is expected to result in several trade journal publications and LSU Agricultural Center Cooperative Extension publications which will increase the visibility and comparative efficacy of Fosphite®, Rampart®, Phostrol® and Nutri-phite®. An article is currently being written for the ISHS 1st International Symposium on Pecans being held on July 17-20, 2013. Foliar applications of phosphite fungicides provided good control of pecan scab and should be considered for inclusion in

commercial fungicide rotations. Soil applications of phosphite fungicides did not provide adequate protection against pecan scab at the chemical rates used in the current study. Therefore, none of the phosphite materials tested would be recommended for scab control as a soil applied treatment. To disseminate this new information, research findings were presented at state and regional pecan field days and grower meetings for industry review. The success of the project was measured by attendance at these meetings.

Alabama Pecan Growers Association Conference, Fairhope, AL, 9/15/2011; Presented; "Phosphite: Is it a Fertilizer or a Fungicide". Attendance:50+

TriState Pecan Conference and Trade Show, Field Day Section, Shreveport, LA, 6/16/2011; Presented; "Phosphite Fungicide Research"; Annual meeting. Attendance:90

Southeastern Pecan Grower's Association Annual Convention and Trade Show, Point Clear, AL, 2/25/2012; Presented, "PHOSPHITE: Will Soil Applications be as Effective as Foliar?" Attendance:250+

Southeastern Pecan Grower's Association Annual Convention and Trade Show, Destin, FL, 2/27/2013; Presented, "PHOSPHITE: Will Soil Applications be as Effective as Foliar?" Attendance:300+

LSU AgCenter Pecan Research-Extension Station Annual Field Day, Shreveport, LA, 5/3/2013; Presented: Using Phosphite Fungicides in Commercial Pecan Orchards. Attendance:40

Beneficiaries

The 2009 LSU AgCenter Agriculture Summary reported over 9000 pecan producers in the state of Louisiana, many of which are located in urban settings. Homeowner pecan trees infected with diseases are almost impossible and impractical to treat. Most growers in Louisiana can't afford the specialized, expensive air-blast sprayers and enclosed cab tractors used by large commercial pecan growers. The likelihood of adoption of Fosphite®, Rampart®, Phostrol® and Nutri-phite® will be appealing to rural and urban sites alike. Demonstration of any differences in efficacy of these biopesticides used alone or in rotation with more common fungicides will help with grower adoption and use.

These phosphonate fungicides will provide an economical biopesticide for disease control that can be applied alone or alternated with other biopesticides, more expensive and/or toxic fungicides. These phosphonate fungicides have a low toxicity with a 4 hour restricted entry interval. The low toxicity of these phosphonate fungicides to humans, animals and the environment will also encourage its use especially in urban areas including residential and commercial crops.

Few broad spectrum biofungicides exist that can be used on a broad range of horticultural crops. Overuse of many of the more common fungicides has increased the likelihood of resistance. Implementing these fungicides in a pesticide program will greatly reduce the use of other more toxic pesticides. The phosphonate fungicides are more benign products than most fungicides and by alternating with these biopesticides the likelihood of resistance to an overused product will be much reduced.

Despite the hurricane, production was actually higher in some areas of Louisiana than originally forecast. The most recent report from the USDA showed Louisiana harvested 15.0 million pounds of pecans in 2012, well above the 10 year (2002-2011) state average of 12.1 million pounds, and 5.0 million pounds more than the 2011 crop. The crop consisted of 5 million pounds of improved pecans and 10 million pounds of native pecans. The USDA reported that wholesale prices in Louisiana for natives averaged $0.70 per pound, while improved pecans averaged $1.30 per pound. Combining all nuts together, Louisiana averaged $0.90/lb, which was the lowest average price in the US. The average price paid for a pound of pecans averaged across all states was $1.57. There was considerable variability on prices due to quality, location, time of sale, and quantity of pecans sold. The gross farm value was estimated to be $13.5 million.

Lessons Learned

Disease prevalence was much greater in trees receiving soil applications of phosphite fungicides compared to trees receiving foliar applications. Trees at both orchard locations received structural damage from thunderstorms associated with hurricane Isaac. Foliar applications of phosphite fungicides provided good control of pecan scab and should be considered for inclusion in commercial fungicide rotations. Soil applications of phosphite fungicides did not provide adequate protection against pecan scab at the chemical rates used in the current study. Foliar applications of phosphite fungicides resulted in delays in nut shucksplit in Candy and Desirable pecan varieties in 2012. Additional work is needed to determine if foliar applications of phosphite fungicides can delay shucksplit of pecan nuts. Additionally, some phytotoxicity was observed with foliar applications of phosphite compounds, with the marginal burn typically appearing on the leaf tips and lower leaflet margins where the solution had pooled and evaporated. It is unknown at this time how much of a role surfactants may play in this problem. Phytotoxicity of phosphite has been reported previously on other crops (Walker, 1989; Seymour et al., 1994). Data collected will be used to develop fungicide recommendations for commercial and residential pecan producers. These phosphonate fungicides have a low toxicity with a 4 hour restricted entry interval. Implementing these fungicides in a pesticide program will greatly reduce the use of other more toxic pesticides and environmental effects of other pesticides because of the ubiquitous nature of its components phosphorous acid (H_3PO_3).

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Additional Information

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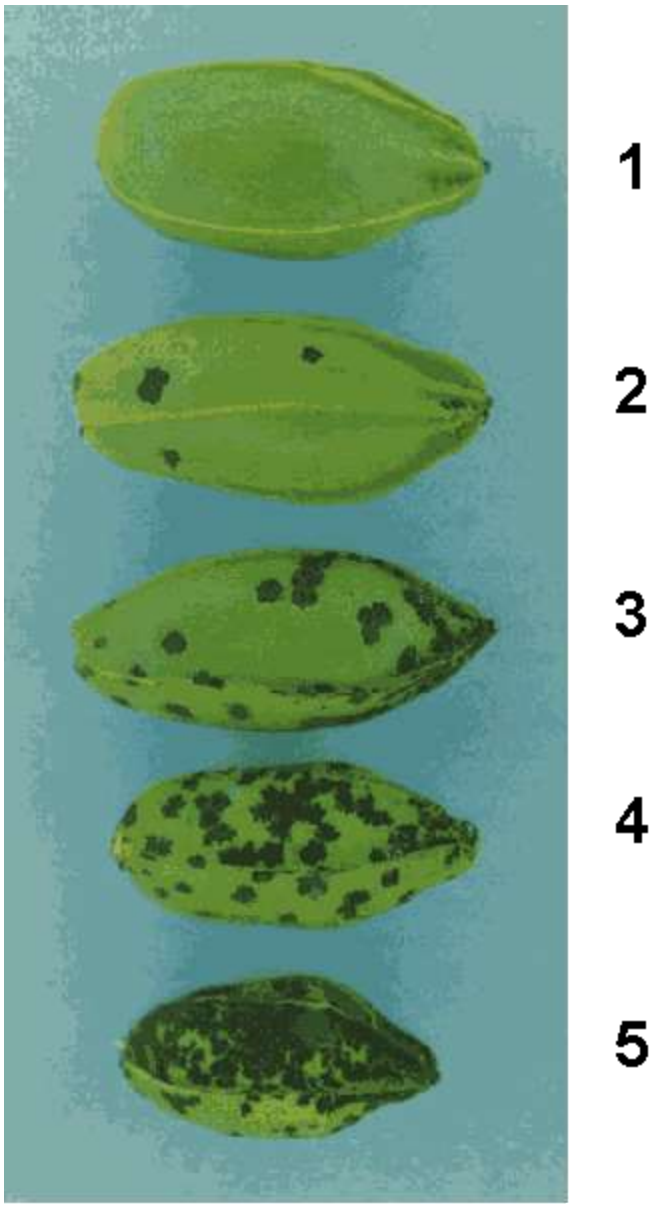
Figure 1. Photographic representation of the Hunter-Roberts pecan scab rating scale. 1 = no scab; 2 = trace to 10% infection; 3 = 11% to 25% infection; 4 = 26% to 50% infection; and 5 = 51% to 100% infection. The Pecan Quarterly 12(3):3-6.



AGMAGIC YOUTH EDUCATION PROGRAM – CONNECTING AGRUICULTURE AND FORESTRY TO HEALTHY FAMILY LIVING THROUGH THE WORLD OF SPECIATLY CROPS

SUBGRANTEE: LOUISIANA STATE UNIVERSITY AGCENTER

Project Summary

The LSU AgCenter moved its state livestock show off campus in 2004, AgCenter administrators felt it was time to make over and enhance the historically successful 4-H Mini Farm for children and adults in order to better inform the public about the value of agriculture and forestry in their daily lives. So in 2004, the LSU AgCenter initiated AgMagic to provide an interactive and education event to build awareness of food, nutrition, clothing, environment and forestry as important elements of everyday lives.

This two year specialty crops project built on and expanded the AgMagic program statewide by developing and distributing educational materials focusing on Louisiana Specialty Crops. These events were open to school groups and the general pubic. So in addition to linking food, fiber and nutrition needs to products we use every day, it also exposed and educated youth and adults about specialty crops. Our faculty and 4-H Agents had the opportunity to present to youth and educators the materials developed from the grant to promote growing locally grown plants, fruits and vegetables. Visitors were able to experience AgMagic through hands-on exhibits, games and lesson plans. Specialty Crops educational materials were added to these events through an activity/coloring book, teacher resources and posters for the classroom. The goal was to increase awareness of Louisiana Specialty Crops, their nutritional and economic value to Louisiana, with AgMagic school groups.

All of citizens of Louisiana have to eat food but also enjoy the intrinsic beauty and use of plants, flowers and trees. This is a timeless and necessary need. So it was critical satisfy this need by building awareness of Louisiana specialty crops to an information hungry audience of young elementary age children, their teachers and parents. Through the materials provided by this grant, they realized the importance that special crops play in their everyday lives.

Louisiana specialty crop producers are positioned to benefit from the increase in public awareness of value, availability, nutritional benefits and beauty of specialty crops that this grant provided.

- If the project built on a previously funded project with the SCBGP or SCBGP-FB describe how this project complimented and enhanced previously completed work.
  N/A

Project Approach

- This grant was divided into two year segments with the overall objective to increase child and adult awareness of Louisiana specialty crops through consumption, nutrition, economic and scientific information.
- So the main deliverables were to develop fun facts and activities that feature Louisiana specialty crops. This was achieved through an **activity/coloring book** were distributed to children attending AgMagic events across the state. The goal was to distribute 40,000 activity/coloring books through these events with 10,000 will be held in reserve for other promotional opportunities.
- We have reached 3,260 teachers/volunteers and 52,492 students based on distribution of materials, so we have reached 15,752 over the target of 40,000.
- We also distributed the books at the 2013 AgMagic after the grant ended and the total distribution was 32,600 of Year #1 book and 37,500 of year #2 book for a total distribution of **70,100 which is 30,100 over our target of 40,000.**
- **Title of the activity books was Louisiana's Crops…Special # 1 & #2** this title identified the educational materials for specialty crops, the graphic had the word "Special" stamped over "Louisiana's Crops. By doing it this way, we felt that we promoted what is special about these crops, their taste, beauty, nutrition and economic value.
- We identified **16 crops (8 for each year)** based on categories within the USDA definition of specialty crops and the economic value to Louisiana (AgSummary). We also wanted to make sure that if we included information or activities about growing plants that we had some that would be easy to grow.

Crops in Year 1	**Crops in Year 2**
Sweet Potatoes	Peaches
Pecans	Blueberries
Strawberries	Christmas Trees
Southern Peas	Peppers
Field Tomatoes	Sweet Corn
Watermelon	Okra
Cut Flowers	Nursery Plants/Bedding Plants
Citrus	Cabbage

- Two Teacher/classroom posters were developed to coincide with the activity books. One for each year of the grant with 2,000 of each being printed. All the posters have been distributed.
- To encourage teachers to attend the AgMagic events across the state and to receive the specialty crop materials, a special postcard was produced and mailed. We also sent this card in an electronic version.
- A survey was conducted in the spring 2011 to measure the knowledge prior to attending AgMagic events and receiving the Specialty Crops materials and after participation. The first survey was not successful with a poor return rate. A Zoomerang survey was sent to 350 school teachers that would be attending AgMagic. The results/responses to the survey are attached at the end of this report. A disappointing number responded (20) but this is attributed to the end of the school year when the survey was sent. Also a lot of the school e-mail systems do not allow incoming mail from external addresses so a lot of bounce backs were received.
- A new survey instrument to establish the teacher/student's knowledge base of specialty crops prior to and after attending the Baton Rouge AgMagic in April 2012 was sent via email. There were 104 surveys distributed and we received a 33percent response rate.
- This is an overview of the survey responses: Louisiana Specialty Crops...Connecting Agriculture and Forestry to Healthy Family Living through the World of Specialty Crops
    - 1. How many times have you visited AgMagic with one of your classes? *63.6% have attended AgMagic at least twice.*
    - 2. Which of the following BEST DESCRIBES your understanding of the term "specialty" crops?"
      43.8% answered the correctly, followed by 40.8% thought the term referred to a crop frequently grown in the state. This tells us we need to work on building awareness of what is the definition of specialty crops in Louisiana.
    - 3. Considering your students' recent participation in AgMagic, which of the following statements describe your experience? (Select all that apply)
      51.5% responded that their student's ability to recognize Louisiana specialty crops was significantly increased.
    - 4. If you feel your students' awareness and understanding of Louisiana's specialty crops has increased, how much?
      30.3% felt that their student's awareness and understanding increased 15-45%.
    - 5. How likely were/are your students to recognize each of these crops as Louisiana specialty crops prior to and following their participation in AgMagic? Pre & Post
      Prior to AgMagic of the eight specialty crops Peaches (57.1%) and Blueberries (60.7%) were the less likely to be recognized. Following AgMagic both of those crops were 50% fairly likely to be recognized; with Christmas trees (32.1%) being most recognized and peppers (64.3%) the most fairly recognized.
    - 6. How knowledgeable were/are your students about the NUTRITIONAL VALUE of each of these Louisiana and following their participation in AgMagic? Pre & Post
      Okra (50%) was the least known for its nutritive value prior to AgMagic – after it grew to

25% Peaches, Blueberries and Sweet Corn had the highest nutritive value awareness after AgMagic at 41.7%.

- 7. How knowledgeable were/are your students about the ECONOMIC VALUE of each of these Louisiana and following their participation in AgMagic? Pre & Post
  Cabbage (83.3%) was least known for its economic value prior to AgMagic and it increased to 66.7% gained a little knowledge after AgMagic with Blueberries (25%) and Nursery/bedding plants(25%) gaining the most moderate economic value knowledge.
- 8. How useful was the activity coloring book in teaching your students about Louisiana specialty crops?
  39.4% found the activity book very useful.
- 9. How useful was the educational classroom poster in teaching your students about Louisiana specialty crops?*39.4% found the classroom posters very useful*
- 10. Do you expect to visit AgMagic again next year with your class?
  57.6% would attend AgMagic again.
- 11. Which grade are your students in?
  45.5% of the students attending AgMagic were in grades 1 -3, followed by 24.2% in 4th – 6th grade and 21.2% in Pre-K.

- The project developed promotion and media relation materials to build awareness of specialty crops and grow attendance to AgMagic events across the state.
  - Direct mail cards to school teachers, principals and youth organization to grow attendance.
  - Press releases
  - Social networks sites
  - Acknowledgment of LDAF and the funding source on all materials developed with this grant.
    Post Specialty crop materials to our Websites
    The Web portal developed for this grant lists related resources and all the educational materials, the URL is:
    http://www.lsuagcenter.com/en/4H/Kids/AgMagic/Spring/specialty_crops
  - http://www.lsuagcenter.com/en/4H/Kids/AgMagic/Fall/
  -

- Recommendations: We have had requests for more posters so in hind sight we should have printed more. We will place the files on the AgMagic web site so that they can be printed on demand.
- We have had requests for the activity books to be in a mobile friendly form. So this maybe a project to consider for future funding – making them into a mobile application.
- We found that there was a better response to the e-invite than the postcard based on a random follow-up survey. We would do this electronic from now on. We surveyed 100 schools with 50 responses that stated that they preferred to receive their information electronically. The roadblock to this is that some schools block e-mails that are received from outside sources.

- Co-Project Director, Dr. Todd Tarifa, Professor, State 4-H Specialist was responsible for establishing the benchmark, conducting the surveys and gathering the results. He did leave the AgCenter halfway through the grant project. Co-Project Director, Dr. Pat Colyer, LSU AgCenter Professor and Northwest region Director, coordinated the project in north Louisiana. All the project directors will partner on conducting research and developing materials for the project content. We also made sure that The LDAF Logo, Administration and funding source from USDA was positioned on all educational materials.

Goals and Outcomes Achieved

The activities that were completed in order to achieve the performance goals and measurable outcomes for the project are listed below.

- Develop content, design and print activity/color books and teacher posters for each year of the project.
- Active distribution of materials across the state to as many Ag Awareness events as possible.
- Promote the specialty crops materials as often as possible in media and social media venues.
- Conduct Survey of pre- and Post- awareness of specialty crops and the knowledge gained.
- Our measurable outcomes were the number of materials distributed – 70,100 activity books and 4,000 posters.
- We have administered the knowledge gained survey with significant results and reached our target goal of more 15 % gain in awareness of specialty crops**. *51.5% responded that their student's ability to recognize Louisiana specialty crops was significantly increased and 30.3% responded that their student's awareness and understanding increased 15-45%.***

- This was a two- year grant so the outcome was accomplished in the grant period.

- We have reached 3,260 teachers/volunteers and 52,492 students based on distribution of materials, so we have reached 15,752 over the target of 40,000.
- We also distributed the books at the 2013 AgMagic after the grant ended which increased the total distribution to 32,600 of book#1 and 37,500 of book#2 for a total distribution of **70,100 which is 30,100 over our target of 40,000.**
- These materials were distributed in all areas of the state at different ag awareness events but the primary locations were **Baton Rouge, Shreveport, Monroe and Delhi.**
- **51.5%** responded that their student's ability to recognize Louisiana specialty crops was significantly increased and **30.3%** felt that their student's awareness and understanding increased **15-45%.** This met and exceeding our goal for knowledge gained.

- The number of books distributed was 70,100 which was 30,100 over our target of 40,000.
- 2,000 posters were printed for each year with all of them being distributed.

Beneficiaries

Groups that benefited were:

- **Children in grades K – 4th** were the target audience of materials produced and distributed through this project. (55,000)
- **Teachers** that attended the AgAwareness events and helped distribute the materials when they returned to the classroom. (2150)
- **Volunteers** at the events and schools that share the Specialty crop materials. (1450)

- **Parents of the children** attending the AgAwareness events where these materials were distributed. They may have attended with the child or the child may have shared the materials at home. (3,100)
- **Publics** that attended open days at the AgAwareness events and were able to pick up the specialty crop materials at distribution centers as they exited the event. (9,500)
- **AgCenter Faculty, Agents and staff** that helped develop and distribute the material gained more awareness of specialty crops. (150)
- **Louisiana specialty crop producers** benefit from the increased public awareness of the value, availability, nutritional benefits and beauty of specialty crops.

- The benefits that the recipients received was measured through primarily the survey results and the distribution numbers and remaining materials in stock. Our measurable outcomes were the number of materials distributed – 70,100 activity books and 4,000 posters.

The second survey administered showed the knowledge gained was significant and reached our target goal of more than 15 % awareness of specialty crops gained with 51.5% responded that their student's ability to recognize Louisiana specialty crops was significantly increased. 30.3% responded that their student's awareness and understanding increased 15-45%.

Lessons Learned

- We learned that youth, teachers, volunteers and our faculty were hungry for creative, comprehensive educational resources like the materials provided by this grant. This was evident by the materials requested, distributed and through the survey.
- What we did not anticipate was the poor survey results in the first instrument administered. This was probably due to the way the survey was constructed.
- The second survey was constructed in a better format and the response rate was greatly improved. This format asked for prior knowledge to the AgMagic event and then immediately asked for knowledge gained after attending the event so that the responder could make a more rational comparison.
- We did not anticipate the lack of some content specialists to help in the development of materials, probably mostly due to the budget and other constraints at our institution. A detailed outline rather than an umbrella goal of the tasks expected of content providers should been provided at the being of the grant and approved via a signature or email by the specialist.
- Overall the faculty involved in the development and distribution of the grant materials were thrilled with outcomes but we needed to more faculty onboard in the implementation of the grant.

- We did not develop enough educational posters for distribution. We could have distributed more based on the requests from agents.
- We have had requests for more information in digital form for the changing way that our audiences like to receive their information.
- Requests for internal faculty and staff to frame the posters for adding aesthetic value to the work environment.

After grant expenses, there was $8043.30 left in the budget. This excess was due to the actual printing costs and postage coming in under budget and we were not able to print the individual Black & white fact sheets on the different specialty crops due to faculty and specialists inability to meet the deadlines. Even though this task was not completed the goal of the grant was achieved.

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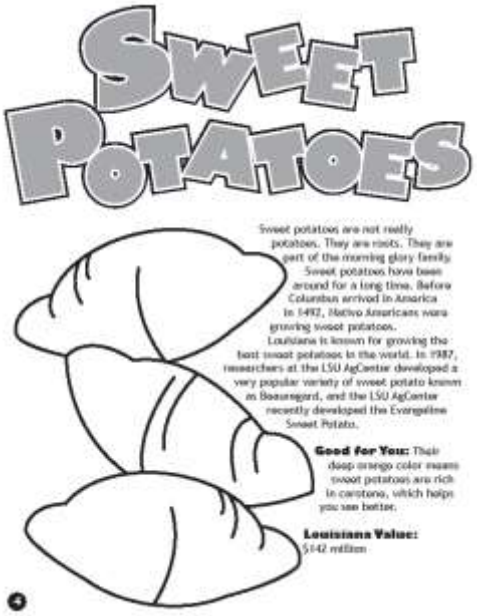
Additional Information

Postcard

Poster

Coloring Book Page Examples



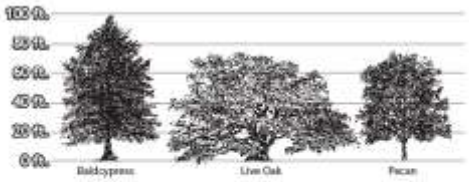
PECANS

Pecans are a delicious nut that grow on trees. Pecan trees grow to 70-100 feet, but some trees can grow as high as 150 feet or more.

Good for You: Pecans are a nutritious snack and are high in protein and fiber.

Louisiana Value: $25 million

6



Read the information about pecans on the opposite page to the left and study the chart above. Answer the questions below to see what you learned.

How high can pecan trees grow?

_____

How much did pecan production add to Louisiana's economy last year?

_____

Pecans are a delicious and nutritious snack. They are high in_____ and _____.

Compare the height, spread and shape of the trees above. See how many are in your neighborhood.

7

WATERMELONS

The watermelon is part of the gourd family, like cucumbers, squash and pumpkins. Watermelons are grown in 28 Louisiana parishes.

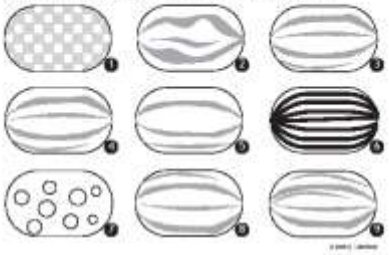
Good for You: Watermelon is an excellent source of vitamins A, B6 and C and potassium. It is high in lycopene, which protects against heart disease and some cancers.

Louisiana Value: $10 million

8

Match Game

Can you find the two watermelons that are alike?



Try this delicious recipe!

Red, White and Blue Watermelon Sundae

Enjoy watermelon often this summer for a tasty, healthful snack. Eat fresh, sliced watermelon, or try this fun recipe!

You will need:
4 cups watermelon balls
2 cups fresh blueberries
4 spoons whipped topping (low-fat)

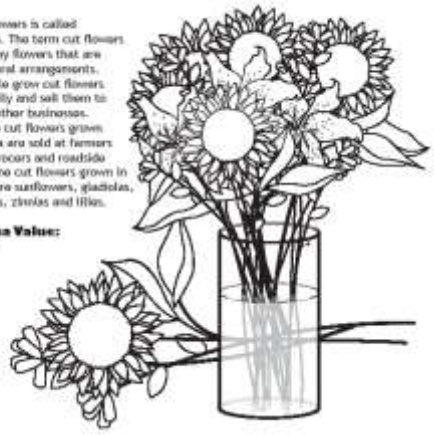
Gently mix together the watermelon and blueberries. Divide among four sundaes. Top each with a dollop of whipped topping. Serve immediately.

9

CUT FLOWERS

Growing flowers is called floriculture. The term cut flowers refers to any flowers that are used for floral arrangements. Some people grow cut flowers commercially and sell them to florists or other businesses. Most of the cut flowers grown in Louisiana are sold at farmers markets, grocers and roadside stands. Some cut flowers grown in Louisiana are sunflowers, gladiolas, cockscombs, zinnias and lilies.

Louisiana Value: $15 million



14

Find the flower!

Can you find the flower below? Start at the beginning and connect the dots to reveal a flower.

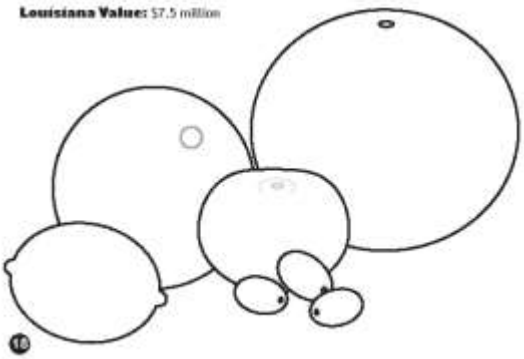
15

CITRUS

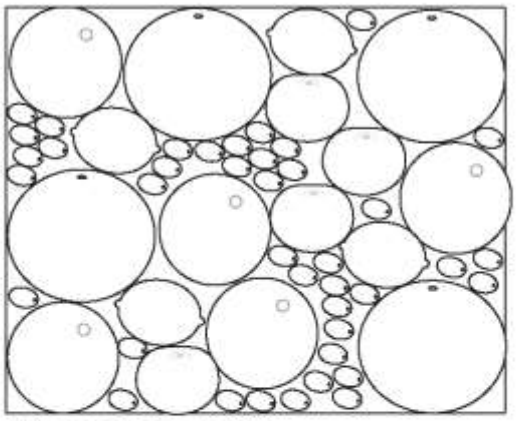
Did you know citrus fruit is grown in Louisiana? Navel oranges, satsumas, lemons, grapefruit and kumquats all grow in the state. Satsumas have a distinctive, sweet flavor and a loose skin that makes them easy to peel. The most widely available Louisiana-grown citrus fruit is the navel orange.

Good for You: Citrus is a good source of vitamin C.

Louisiana Value: $7.5 million

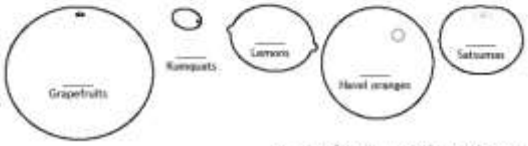


16



How many?

The box above is filled with Louisiana citrus fruit. Can you count how many there are of each fruit? Put your answers below.



19

LOUISIANA PECAN NUTRITION AWARENESS MARKETING PROGRAM

SUBGRANTEE: LOUISIANA PECAN GROWERS ASSOCIATION

Project Summary

Louisiana pecan growers have historically received lower prices for their product than the growers in the major pecan producing states such as Georgia and Texas. This is due in part to the majority of our pecans being sold out of state. The producer must absorb shipping costs and are subject to market price fluctuations. The target of this campaign was to increase market awareness of Louisiana grown pecans to the residents of the state. This would provide a much larger local market for the grower, thereby eliminating the need to export pecans out of state and would increase profitability. The key to the campaign was to promote the health benefits of pecans during the harvest and holiday seasons when pecan consumption is at its peak. People are more concerned today about healthy eating habits than any time in recent history.

Project Approach

The project was an educational campaign consisting of billboards placed at strategic locations in six major Louisiana cities promoting the nutritional qualities of Louisiana pecans during the peak pecan harvest season – September, October and November. Magazine advertisements were also placed in the September/October issues of *Louisiana Living* and *Louisiana Cookin*. The final step in this project was to distribute to the general public brochures highlighting the heart healthy value of pecans.

We learned by public comments that the billboards were reaching more of the public and decided to reduce the print ads to only two instead of the planned four ads. We used the funding to purchase additional billboard exposure.

The Louisiana Pecan Growers Association partnered with KJA Communications to develop the campaign. They were responsible for the design, content and securing the billboard locations. The objective was to make the public aware pecans are a part of a heart healthy lifestyle. The billboards and magazine advertisements directed the viewer to the Louisiana Pecan Growers Association web site where more specific health benefits were available. Web design was the responsibility of JDI Internet Services. By directing the viewer to our website, we were able to effectively gauge the success of our project. Website visits were measured both prior to the kickoff and during the campaign. All project activities were completed, our goal was exceeded and proposed project budget was in line with the actual expenditure, leaving only $115.40 to be reallocated by LDAF to other projects.

Goals and Outcomes Achieved

In July 2011, initial meetings were held to develop the pecan nutrition campaign theme, logo, billboard design and related materials.

Billboard design, print advertisement and related marketing materials were developed and approved.

During July and August 2011, benchmarks were established for the LAPGA website to collect site visits prior to the campaign. Enhancement of the LAPGA site to incorporate educational campaign them, pecan nutrition and marketing information was done.

Billboard locations were secured for the targeted cities of Shreveport, Baton Rouge, Alexandria, Lake Charles, Monroe and New Orleans.

September 2011 brochures were printed and distributed.

During the life of the project, all targeted completion dates were met without exception. Site visits for the months of July, August, and September 2011 were 846. Site visits during the campaign months of October, November, and December were 5,163. Comparing the three month period prior to that during the three campaign months shows a 510% increase. Our goal of increasing hits to the site by 5% was achieved and greatly surpassed.

Beneficiaries

The Louisiana pecan growers and the general public are beneficiaries of this successful project. This campaign made the general public more aware of the nutritional benefits of pecans. Now not only can people enjoy the good taste and versatility of the Louisiana Pecan, they can also benefit from its healthful qualities. Increased awareness of the product and its valuable qualities also increased state sales of pecans. Louisiana's approximately 800 growers benefited by increased awareness of their product and a better informed consumer base. Consumers benefited from their exposure to the messaging ads and the additional information provided on the website. Visits to the website jumped dramatically during the campaign.

Lessons Learned

Pecan sales will increase by educating the general public on the healthful qualities and good taste of pecans. Future projects of this nature could be directed toward the school lunch programs. Billboards could also be placed on major highways entering the state to take advantage of the many tourists that visit Louisiana.
We learned by public input that the billboards were reaching more of the public and decided to reduce the print ads to only two instead of the planned four ads. We used the funding to purchase additional billboard exposure.

Contact Person

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Additional Information

Billboards

Tri-fold

(Outside)

Tri-fold
(Inside)

Magazine Ads

IDENTIFICATION OF WEED MANAGEMENT STRATEGIES TO MAXIMIZE PROFITS FOR THE LOUISIANA SWEET POTATO INDUSTRY

Project Summary

The purpose of this project was to help identify the best systems approach for management of problematic weed species in the processing sweet potato sector utilizing current commercial herbicides along with production practices including cultivar selection and plant spacing.

Effective weed management is critical to successful sweet potato production. Weed species compete for nutrients, water, and sunlight and can impair harvest efficiency as well as crop yield and quality. Herbicides, in combination with timely cultivation, are used by producers to reduce weed competition, improve harvest efficiency, and increase crop productivity (Smith and Miller 2007). Unfortunately, in comparison to other crops produced in Louisiana, options for chemical weed management are very limited. Currently clomazone (Command), flumioxazin (Valor), carfentrazone-ethyl (Aim EC) and metolachlor (Dual Magnum) are registered for use in sweet potato. In addition, graminicides clethodim (Select), fluazifop (Fusilade DX), and sethoxydim (Poast) are also registered (Smith and Miller 2007). In order to meet the fresh market demand for large numbers of quality U.S. No.1 grade sweet potato roots, the highest rates of individual products in rate ranges labeled for use in the crop are required to reduce negative impacts of weed competition. With herbicides such as flumioxazin and metholachlor, such rates can result in crop injury and reduced production, especially when combined with adverse weather conditions (Kelly et al. 2006; Smith and Miller 2007). Current weed management strategies in Louisiana are focused primarily on those that result in the greatest production of U.S. No. 1 grade roots for the fresh market sector of the industry. With the future increase of acreage devoted to production for the processing sector, as well as different associated grading requirements, development of management strategies specifically targeting a reduction in negative weed impacts, while maintaining maximum tonnage production, is essential. Such strategies may not require highest labeled rates to produce an equal amount of tonnage. Such reduction in herbicide amounts applied will require "help" from the competiveness of the sweet potato plants to achieve maximum results. Therefore, it is essential that comparisons of cultivars Evangeline and Beauregard be made with respect to these reduced rate herbicide programs to identify possibly advantages from one cultivar over the other due to growth rate or habit (i.e. more shading, faster ground cover). In addition, plant spacing that results in faster ground cover will aid in overall weed management, therefore differing spacings (12" vs. 16") need to also be evaluated.

References

Kelly, S. T., M. W. Shankle, and D. K .Miller. 2006. Efficacy and tolerance of flumioxazin on sweet potato (*Ipomoea batatas*). Weed Technology. 20:334-339.

Smith, Tara P., and Donnie K. Miller. 2007. Weed Management in Sweet Potato. Louisiana Cooperative Extension Service. Publication No. 3007.

Recent economic developments in regards to the sweet potato processing sector have resulted in a potential increase for growth of the industry in Louisiana. Predictions are that the impact of these developments could be a two-fold increase in sweet potato production acreage in the state during the

next five years (Tara Smith, personal communication). Current weed management strategies focus on maximizing production and quality as determined by grading of fresh market sweet potatoes. Current strategies for managing weeds may not be the best "fit" for production systems aimed at grades and production for exclusive processing markets. A "ramping up" of information is needed for producers to potentially streamline inputs in regards to weed management in these newer systems. A potential reduction in herbicide usage, as a result of differing grading requirements, cultivar selection, and plant spacing to be addressed in the proposed research, could lead to a reduction in overall production costs. In addition, a reduction in pesticide usage would lead to favorable environmental impacts and views associated with sweet potato production in Louisiana.

Project Approach

A thorough evaluation of treatments was made to ensure successful matching with project goals each spring once data compilation and analysis were complete. As a result it was determined after the first year of the project that a refocus of treatments was necessary. The initial treatment structure included a 3-factor factorial arrangement. This treatment arrangement was applied to two varieties, Evangeline and Beauregard. It was determined that, due to the large number of factors in the original study plan, that results may be confounded and clear trends/statistical differences may be masked. As a result, beginning with the second field year of the study a more refined treatment structure with only two factors (herbicide treatment and plant row spacing) was utilized. In addition, due to the excellent results in agronomic trials with variety 07-146 (high yielding, quick growth and ground cover) and it's excellent fit for the processing factor of the industry, field trials in year two and three focused on this variety. As a result, conclusions, outcomes, and evaluation of the project were designated to be concluded after the final year of the project once data from both year two and three were completed. Each year field trials were initiated during summer with appropriate treatments applied at designated times. Visual estimates of weed control and crop tolerance were made at designated intervals to evaluate performance of each treatment. Plots were mechanically harvested in the fall of each year.

As a result of the shift in focus from year one to two, conclusions and results reflect only two years of repeated data. In year two, results indicate that total sweet potato yield was equally maximized with the following reduced rate programs when compared with what was considered the standard program of Valor applied preplant at 2 oz/A followed by Command applied immediately after planting at 2 pt/A (464 bu/A): Valor preplant at 2 oz/A followed by Dual Magnum at 1 pt/A immediately after planting (576 bu/A); Valor preplant at 1 oz/A followed by Dual Magnum immediately after planting at 0.75 pt/A (505 bu/A); Valor preplant at 1 oz/A followed by Command at 1 pt/A immediately after planting and Dual Magnum at 1 pt/A 10 d after planting (424 bu/A); and Valor preplant at 1 oz/A followed by Command at 1 pt/A immediately after planting and Dual Magnum at 1 pt/A 20 d after planting (422 bu/A). When comparing reduced rate programs, Valor at 2 oz/A preplant followed by Dual Magnum at 1 pt/A immediately after planting resulted in a total yield of 576 bu/A, which was equal to the 505 bu/A for Valor preplant at 1 oz/A followed by Dual Magnum at 0.75 pt/A immediately after planting, and greater than all other reduced rate programs. Total yield was not different regardless of the sweet potato plant spacing employed at planting. In addition, interactions between plant spacing and herbicide program were not observed, meaning programs responded similarly regardless of row spacing employed.

In year three, results indicated that total sweet potato yield was equally maximized with the following reduced rate programs when compared with what was considered the standard program of Valor applied preplant at 2 oz/A followed by Command applied immediately after planting at 2 pt/A (533 bu/A): Valor preplant at 2 oz/A followed by Dual Magnum at 1 pt/A immediately after planting (642 bu/A); Valor preplant at 1 oz/A followed by Dual Magnum immediately after planting at 0.75 pt/A (505 bu/A); Valor preplant at 1 oz/A followed by Command at 1 pt/A immediately after planting and Dual Magnum at 1 pt/A 10 d after planting (555 bu/A); and Dual Magnum at 1 pt/A immediately after planting (417 bu/A). When comparing reduced rate programs, Valor at 2 oz/A preplant followed by Dual Magnum at 1 pt/A immediately after planting resulted in a total yield of 642 bu/A, which was equal to the 555 bu/A for Valor preplant at 1 oz/A followed by Command at 1 pt/A immediately after planting and Dual Magnum at 1 pt/A applied 10 d after planting, and greater than all other reduced rate programs. Unlike in year two, total yield was greater for the narrower row spacing of 12" (495 bu/A) in comparison to the 16" (424 bu/A). Like in year two, interactions between plant spacing and herbicide program were not observed, meaning programs responded similarly regardless of row spacing employed.

Conclusions from the project are that, given the fast growth and groundcover ability of variety 07-146, optimum total yields can be produced with timely herbicide applications at rates below what are currently utilized in fresh market production systems. Such reduction in rates will potentially have a positive environmental impact and reduce overall production expenses. Complete data sets for years two and three are included as separate attachments to this report.

All project partners were heavily involve with their stated roles in the project proposal. Project Directors were heavily involved in the protocol establishment and evaluation after each year of the project. Such evaluation led to a need for treatment and plan revision after year one. In addition, Project Directors were heavily involved in the analysis of the data collected and will be heavily involved in the dissemination of results to appropriate audiences in the sweet potato industry now that the project is complete and data from year three is analyzed. Project leaders were also involved in varying degrees throughout the project in such activities as trial implementation and data collection. Other support staff listed on the project were heavily involved in the trail implementation and data collection phase of the project.

Goals and Outcomes Achieved

1). Protocol Establishment: During the first year of the project, project leaders developed a protocol for the project that included specific treatments to be evaluated and data to be collected at defined evaluation intervals. Following the first implementation year of the protocol, it was decided that a slight variation in treatments was needed to achieve the most practical information to meet the project objectives and provide the most pertinent information to be utilized by sweet potato producers in their weed management strategy decisions. The final treatment list is provided along with all data collected the final two years of the project in separate attachments to this final report.

2). Trial implementation, data collection, and analysis: As mentioned previously, field trails were implemented over a three year period in order to establish outcomes that are in line with objectives set out in the original proposal. Both qualitative (weed control ratings) and quantitative data (yield) were collected over various intervals within each trial year to assess effectiveness of treatments in ability to control weeds present and also maximize yield. Data collected were entered into data

management programs and appropriate statistical analysis was conducted to detect treatment differences within each year of the project. Due to the before stated variation in treatments evaluated between the first and second/third year of the project, analysis was only conducted on the final two years of data collected. Final analysis and yearly data for each treatment is provided in a separate attachment.

3). Dissemination of information to the sweet potato industry: Due to the shift in treatment focus, recommendations to the sweet potato industry as a result of project findings did not occur the first year of the project. At various local producer meetings and Sweet Potato Association meetings, along with individual contact with producers, the industry was made aware in the first year of the project that implementation was underway and results/recommendations would be forthcoming. As sound scientific research requires data that is repeatable and replicated, a final set of recommendations are currently being prepared following the completion of the project with two years of data instead of the initially proposed 3 year for the project. Data results and project progress were/are being relayed to various personnel of the industry through presentations at producer and Association meetings (winter of 2012 and 2013) and the Sweet Potato Research Station Field day held in August of 2011.

4). Project Evaluation: Due to the focus of the project being shifted toward years 2 and 3 following the treatment change after the first year, determination of a final set of recommendations and producer implementation as a result will not occur until the winter of 2013/2014 and summer of 2014. The proposed survey of producers to evaluate implementation of recommendations therefore will not occur until the fall of 2014.

Due to the project shift between years one and two, outcome measures became more long term than anticipated with conclusions not to be drawn until the completion of a second year of research with the same treatment structure. Measured outcomes will go beyond the duration of the project and will begin with project results discussion at various production meetings and discussions with producers one on one now that results are analyzed and conclusions can be drawn. Recommendations will also be made to producers with respect to weed management systems in a processing sector cropping system. These will be discussed with County Agents in parishes with sweet potato production and also at production meetings.

The majority of the actual accomplishments were directly in line with those established for the reporting period in the proposal. Field trails and data collection and analysis were completed within the timeframe for final reporting on the project. Due to the shift in the project focus between years one and two based on results and experiences from the first year of research, evaluation of producer implementation of results will not be measured during the reporting period as planned. The first production year for this will be summer of 2014. Results and conclusions will be presented to producers at various meetings during the winter of 2013-2014. These will be based on data from production years 2012 and 2013, with all analysis not completed until winter of 2013. Evaluation of the impact of the project based on producer adaptation and implementation will be completed during the summer 2014 production year and fall harvest.

Data collected from years two and three are provided in separate attachments to this final report. Results collected will be compiled into a final set of recommendations and disseminated at producer and Association meetings in winter of 2013/2014.

Beneficiaries

The primary beneficiaries of the project are the 70 sweet potato producers throughout the state that have already or are planning to devote a portion of their production systems to be geared toward the processing sector of the industry. Agronomic work has identified variety 07-146 as having a good fit for this type of system. As producers adapt to this variety, weed management systems are needed to compliment it. In addition to producers, consultants to the producers that are heavily involved with every aspect of their operation are beneficiaries. A secondary beneficiary is the processing plants that may see an increase in the number of acres devoted to production systems for the processing sector as a result of findings within this project.

The data from this project that has the potential for greatest economic impact to the beneficiaries is identification of weed management programs that are effective at controlling weeds and resulting in maximized yield at lower rates than are currently used. Adaptation of these programs within their management systems have the possibility of resulting in lower production costs and higher economic returns. A potentially positive environmental impact due to reduced amount of herbicides used may also be a benefit.

Lessons Learned

The primary lesson learned through completion of the project is that a great deal of flexibility needs to exist from project initiation to completion. A thorough evaluation of each step of the process is essential so that "path" changes can be initiated once weaknesses or confounding elements are identified. In this case, the original treatment structure was too large and confounded the clear delineation of results as they pertained to the project objectives. In addition, the information gained from other disciplines, in this case agronomics, as it relates to positive attributes of the 07-146 variety and its impact on the processing sector and aggressive growth habit impacts on weed management, was utilized to alter the focus of the project. This allowed the Project Leaders to more finely focus the treatment structure and variety selection so that producers get the maximum benefit from resulting data. Original proposal provide a good guideline for what is expected to be accomplished during the project, but realities often make it necessary to make adjustments when they are warranted.

For the most part, the outcomes and results that were achieved with respect to the research aspects were as expected. It was expected that there exist a possibility to control weeds and maximize yields with lower than currently used herbicide inputs. The impact of row spacing was expected to be a very important aspect to this. However, that was shown to be the case in only one of the two years. It was expected that the project would need to focus on two varieties currently utilized on a large scale in the fresh market sector, Beauregard and Evangeline. However, variety 07-146 has exhibited in other research trials that its aggressive growth habit and fit for the processing market made it a more fitting candidate for inclusion in the project after year one. It was also expected that the larger number of factors implemented in the original proposal would better help answer the questions put forth in the objectives. However, it became apparent after year one that a more focused set of factors and treatments was needed to provide more concise answers to the objectives set out in the proposal. As a result of this shift in focus during the project, the direct impact of the project and outcomes with respect to adaptation and implementation by producers will not be realized during the duration of the project.

Certain outcome measures will be achieved following the 2014 production year as a result of project refocus of treatments after year one. In retrospect, in the initial project submission an outcome of developing a set of recommendations should not have been a stated goal following year one, but at the completion of the 3 year project study. Ideally, if the set of treatments evaluated would have remained constant for the 3 years, a working set of recommendations could have been developed after year two. This would have led to a more timely completion of the producer survey for implementation of the recommendations. The survey will still take place and measuring will be conducted, but outside the time of grant period.

Contact Person

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Additional Information

See attachment file A
See attachment file B

LSU Ag Center Northeast Research Station

Pre, Post and Delayed Post Applications of Herbicides in Sweet Potato at Different Row Spacing Intervals

Trial ID: Protocol ID:
Location: Study Director:
Project ID: Investigator: Donnie Miller
Sponsor Contact:

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	1	2	3	4	5	6	7
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						ECHCG	PHYAN	POROL	CYPES	IPOHG	ECHCG	POROL
	Pest Scientific Name						Echinochloa cr>	Physalis angul>	Portulaca oler>	Cyperus escule>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>
	Pest Name						Common barnyar>	Cutleaf ground>	Common purslane	Yellow nutsedge	Entireleaf mor>	Common barnyar>	Common purslane
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Jul-31-2013	Jul-31-2013	Jul-31-2013	Jul-31-2013	Jul-31-2013	Aug-14-2013	Aug-14-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						14 DAP	14 DAP	14 DAP	14 DAP	14 DAP	28 DAP	28 DAP
	Days After First/Last Applic.						15 5	15 5	15 5	15 5	15 5	29 8	29 8
	Trt-Eval Interval											13 DAD	13 DAD
	Plant-Eval Interval						15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1	29 DP-1	29 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						91.9	90.9	99.6	86.6	99.9	88.0	100.0
	Replicate 2						90.8	89.3	93.3	81.8	93.6	91.9	99.7
	Replicate 3						91.1	89.6	99.1	88.7	100.0	87.3	99.9
	Replicate 4						89.6	87.9	98.8	93.8	100.0	88.2	99.7
	TABLE OF A (spacing) MEANS												
1	12" SPACING						90.9	86.9	96.4	88.5	96.8	91.2	100.0
2	16" SPACING						90.8	91.9	98.9	87.0	100.0	86.5	99.6
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	96.3	95.9	99.8	84.4	100.0	91.4	100.0
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	91.0	100.0	100.0	94.3	100.0	88.8	100.0
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	89.1	98.5	99.8	86.4	99.8	82.9	99.4
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	91.9	99.8	98.8	87.0	100.0	89.1	100.0
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	92.9	92.5	96.3	84.4	100.0	84.4	100.0
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	87.3	95.5	99.4	93.5	99.8	80.0	99.1
7	COMMAND	1	pt/a			B	91.0	45.6	100.0	84.5	100.0	94.1	100.0
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						87.5	87.5	87.5	87.5	87.5	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						98.8	97.8	100.0	87.5	100.0	95.3	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						93.8	94.0	99.5	81.3	100.0	87.5	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						93.8	100.0	100.0	95.3	100.0	91.3	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						88.3	100.0	100.0	93.3	100.0	86.3	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						94.5	99.5	100.0	89.5	99.5	93.3	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						83.8	97.5	99.5	83.3	100.0	72.5	98.8
3	VALOR	1	oz/a			A							

3	DUAL MAGNUM	0.75	pt/a	B								
1	12" SPACING				95.0	99.5	100.0	90.3	100.0	93.3	100.0	
4	VALOR	1	oz/a	A								
4	COMMAND	1	pt/a	B								
4	DUAL MAGNUM	1	pt/a	C								
2	16" SPACING				88.8	100.0	97.5	83.8	100.0	85.0	100.0	
4	VALOR	1	oz/a	A								
4	COMMAND	1	pt/a	B								
4	DUAL MAGNUM	1	pt/a	C								
1	12" SPACING				94.5	91.3	96.3	88.8	100.0	83.8	100.0	
5	VALOR	1	oz/a	A								
5	COMMAND	1	pt/a	B								
5	DUAL MAGNUM	1	pt/a	E								

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	1	2	3	4	5	6	7
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						ECHCG	PHYAN	POROL	CYPES	IPOHG	ECHCG	POROL
	Pest Scientific Name						Echinochloa cr>	Physalis angul>	Portulaca oler>	Cyperus escule>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>
	Pest Name						Common barnyar>	Cutleaf ground>	Common purslane	Yellow nutsedge	Entireleaf mor>	Common barnyar>	Common purslane
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Jul-31-2013	Jul-31-2013	Jul-31-2013	Jul-31-2013	Jul-31-2013	Aug-14-2013	Aug-14-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						14 DAP	14 DAP	14 DAP	14 DAP	14 DAP	28 DAP	28 DAP
	Days After First/Last Applic.						15 5	15 5	15 5	15 5	15 5	29 8	29 8
	Trt-Eval Interval											13 DAD	13 DAD
	Plant-Eval Interval						15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1	29 DP-1	29 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						91.3	93.8	96.3	80.0	100.0	85.0	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						86.3	93.3	100.0	93.8	99.5	78.8	100.0
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						88.3	97.8	98.8	93.3	100.0	81.3	98.3
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						89.5	38.8	100.0	87.8	100.0	93.8	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						92.5	52.5	100.0	81.3	100.0	94.5	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						75.0	75.0	75.0	75.0	75.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	8	9	10	11	12	13	14	15
	Pest Type						W Weed	W Weed	W Weed		W Weed	W Weed	W Weed	W Weed
	Pest Code						PHYAN	CYPES	IPOHG		ELEIN	ECHCG	POROL	PHYAN
	Pest Scientific Name						Physalis angul>	Cyperus escule>	Ipomoea hedera>		Eleusine indica	Echinochloa cr>	Portulaca oler>	Physalis angul>
	Pest Name						Cutleaf ground>	Yellow nutsedge	Entireleaf mor>		Goosegrass	Common barnyar>	Common purslane	Cutleaf ground>
	Crop Code						IPOBA	IPOBA	IPOBA		IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP		BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas		Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato		Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-14-2013	Aug-14-2013	Aug-14-2013	Aug-14-2013	Aug-23-2013	Aug-23-2013	Aug-23-2013	Aug-23-2013
	Rating Type						CONTROL	CONTROL	CONTROL	INJURY	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1	1
	Rating Timing						28 DAP	28 DAP	28 DAP	28 DAP	28 DAC	28 DAC	28 DAC	28 DAC
	Days After First/Last Applic.						29 8	29 8	29 8	29 8	38 17	38 17	38 17	38 17
	Trt-Eval Interval						13 DAD	13 DAD	13 DAD	13 DAD	17 DAE	17 DAE	17 DAE	17 DAE
	Plant-Eval Interval						29 DP-1	29 DP-1	29 DP-1	29 DP-1	38 DP-1	38 DP-1	38 DP-1	38 DP-1
	ARM Action Codes													
	Number of Decimals													
	TABLE OF R MEANS													
	Replicate 1						86.3	89.7	100.0	0.0	98.6	88.5	94.1	80.2
	Replicate 2						87.2	88.4	100.0	0.0	99.3	94.4	100.0	78.4
	Replicate 3						79.4	93.8	100.0	0.0	98.8	86.0	100.0	71.8
	Replicate 4						80.2	97.7	100.0	0.0	99.8	88.1	99.9	68.3
	TABLE OF A (spacing) MEANS													
1	12" SPACING						82.7	92.7	100.0	0.0	98.8	91.9	97.2	74.0
2	16" SPACING						83.8	92.1	100.0	0.0	99.4	86.6	99.8	75.4
	TABLE OF B (herbicides) MEANS													
1	VALOR	2	oz/a			A	88.8	81.9	100.0	0.0	100.0	92.9	100.0	73.8
1	COMMAND	2	pt/a			B								
2	VALOR	2	oz/a			A	97.9	93.8	100.0	0.0	99.5	88.5	100.0	95.8
2	DUAL MAGNUM	1	pt/a			B								
3	VALOR	1	oz/a			A	95.4	95.0	100.0	0.0	98.3	78.5	88.8	89.1
3	DUAL MAGNUM	0.75	pt/a			B								
4	VALOR	1	oz/a			A	93.9	91.9	100.0	0.0	99.8	94.8	99.4	86.0
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
5	VALOR	1	oz/a			A	81.9	86.0	100.0	0.0	98.8	91.9	100.0	62.9
5	COMMAND	1	pt/a			B								
5	DUAL MAGNUM	1	pt/a			E								
6	DUAL MAGNUM	1	pt/a			B	77.9	93.3	100.0	0.0	98.6	79.3	99.8	65.0
7	COMMAND	1	pt/a			B	30.6	97.5	100.0	0.0	97.8	88.3	100.0	25.0
7	DUAL MAGNUM	1	pt/a			D								
8	WEED FREE						100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS													
1	12" SPACING						88.8	82.5	100.0	0.0	100.0	94.5	100.0	73.8
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
2	16" SPACING						88.8	81.3	100.0	0.0	100.0	91.3	100.0	73.8
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
1	12" SPACING						98.3	90.0	100.0	0.0	99.5	90.8	100.0	97.8
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
2	16" SPACING						97.5	97.5	100.0	0.0	99.5	86.3	100.0	93.8
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
1	12" SPACING						99.5	93.8	100.0	0.0	97.0	92.0	77.5	94.5
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
2	16" SPACING						91.3	96.3	100.0	0.0	99.5	65.0	100.0	83.8
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
1	12" SPACING						95.8	91.3	100.0	0.0	100.0	95.0	100.0	85.0
4	VALOR	1	oz/a			A								
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
2	16" SPACING						92.0	92.5	100.0	0.0	99.5	94.5	98.8	87.0
4	VALOR	1	oz/a			A								

4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				78.8	93.3	100.0	0.0	98.5	90.0	100.0	58.3
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Pest Type	W Weed	W Weed	W Weed		W Weed	W Weed	W Weed	W Weed
Pest Code	PHYAN	CYPES	IPOHG		ELEIN	ECHCG	POROL	PHYAN
Pest Scientific Name	Physalis angul>	Cyperus escule>	Ipomoea hedera>		Eleusine indica	Echinochloa cr>	Portulaca oler>	Physalis angul>
Pest Name	Cutleaf ground>	Yellow nutsedge	Entireleaf mor>		Goosegrass	Common barnyar>	Common purslane	Cutleaf ground>
Crop Code	IPOBA	IPOBA	IPOBA		IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale	BVPP	BVPP	BVPP		BVPP	BVPP	BVPP	BVPP
Crop Scientific Name	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas		Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name	Sweet potato	Sweet potato	Sweet potato		Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date	Aug-14-2013	Aug-14-2013	Aug-14-2013	Aug-14-2013	Aug-23-2013	Aug-23-2013	Aug-23-2013	Aug-23-2013
Rating Type	CONTROL	CONTROL	CONTROL	INJURY	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1	1
Rating Timing	28 DAP	28 DAP	28 DAP	28 DAP	28 DAC	28 DAC	28 DAC	28 DAC
Days After First/Last Applic.	29 8	29 8	29 8	29 8	38 17	38 17	38 17	38 17
Trt-Eval Interval	13 DAD	13 DAD	13 DAD	13 DAD	17 DAE	17 DAE	17 DAE	17 DAE
Plant-Eval Interval	29 DP-1	29 DP-1	29 DP-1	29 DP-1	38 DP-1	38 DP-1	38 DP-1	38 DP-1
ARM Action Codes								
Number of Decimals								

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	8	9	10	11	12	13	14	15
2	16" SPACING						85.0	78.8	100.0	0.0	99.0	93.8	100.0	67.5
5	VALOR	1	oz/a			A								
5	COMMAND	1	pt/a			B								
5	DUAL MAGNUM	1	pt/a			E								
1	12" SPACING						82.0	92.0	100.0	0.0	98.5	82.8	100.0	65.0
6	DUAL MAGNUM	1	pt/a			B								
2	16" SPACING						73.8	94.5	100.0	0.0	98.8	75.8	99.5	65.0
6	DUAL MAGNUM	1	pt/a			B								
1	12" SPACING						18.8	98.8	100.0	0.0	96.5	90.3	100.0	17.5
7	COMMAND	1	pt/a			B								
7	DUAL MAGNUM	1	pt/a			D								
2	16" SPACING						42.5	96.3	100.0	0.0	99.0	86.3	100.0	32.5
7	COMMAND	1	pt/a			B								
7	DUAL MAGNUM	1	pt/a			D								
1	12" SPACING						100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0
8	WEED FREE													
2	16" SPACING						100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0
8	WEED FREE													

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	16	17	18	19	20	21	22
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						CYPES	IPOHG	ELEIN	ECHCG	POROL	PHYAN	CYPES
	Pest Scientific Name						Cyperus escule>	Ipomoea hedera>	Eleusine indica	Echinochloa cr>	Portulaca oler>	Physalis angul>	Cyperus escule>
	Pest Name						Yellow nutsedge	Entireleaf mor>	Goosegrass	Common barnyar>	Common purslane	Cutleaf ground>	Yellow nutsedge
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-23-2013	Aug-23-2013	Aug-28-2013	Aug-28-2013	Aug-28-2013	Aug-28-2013	Aug-28-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						28 DAC	28 DAC	42 DAP	42 DAP	42 DAP	42 DAP	42 DAP
	Days After First/Last Applic.						38 17	38 17	43 22	43 22	43 22	43 22	43 22
	Trt-Eval Interval						17 DAE	17 DAE	27 DAD	27 DAD	27 DAD	27 DAD	27 DAD
	Plant-Eval Interval						38 DP-1	38 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						83.9	100.0	97.9	87.9	100.0	83.8	90.9
	Replicate 2						85.5	100.0	99.1	95.9	99.9	82.3	89.3
	Replicate 3						92.6	100.0	99.1	83.4	100.0	75.1	97.1
	Replicate 4						96.6	100.0	99.5	87.3	100.0	70.2	98.3
	TABLE OF A (spacing) MEANS												
1	12" SPACING						91.3	100.0	98.6	91.2	100.0	78.2	92.5
2	16" SPACING						88.1	100.0	99.3	86.1	99.9	77.5	95.3
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	76.0	100.0	99.5	91.4	100.0	73.8	79.4
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	90.0	100.0	99.5	88.5	100.0	98.0	95.0
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	88.9	100.0	97.4	81.8	99.8	94.1	97.5
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	87.3	100.0	98.9	91.8	100.0	88.6	91.9
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	84.8	100.0	98.5	87.3	100.0	69.4	93.5
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	92.3	100.0	98.3	76.6	100.0	70.0	95.4
7	COMMAND	1	pt/a			B	98.1	100.0	99.3	91.8	100.0	28.8	98.5
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	100.0	100.0	100.0	100.0	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						79.5	100.0	99.0	95.8	100.0	73.8	73.8
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						72.5	100.0	100.0	87.0	100.0	73.8	85.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						91.3	100.0	99.5	88.8	100.0	99.0	91.3
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						88.8	100.0	99.5	88.3	100.0	97.0	98.8
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						89.5	100.0	95.8	96.0	100.0	97.0	95.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						88.3	100.0	99.0	67.5	99.5	91.3	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						85.8	100.0	99.5	94.0	100.0	84.5	91.3
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						88.8	100.0	98.3	89.5	100.0	92.8	92.5
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				92.0	100.0	98.8	86.3	100.0	62.5	94.5
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	16	17	18	19	20	21	22
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						CYPES	IPOHG	ELEIN	ECHCG	POROL	PHYAN	CYPES
	Pest Scientific Name						Cyperus escule>	Ipomoea hedera>	Eleusine indica	Echinochloa cr>	Portulaca oler>	Physalis angul>	Cyperus escule>
	Pest Name						Yellow nutsedge	Entireleaf mor>	Goosegrass	Common barnyar>	Common purslane	Cutleaf ground>	Yellow nutsedge
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-23-2013	Aug-23-2013	Aug-28-2013	Aug-28-2013	Aug-28-2013	Aug-28-2013	Aug-28-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						28 DAC	28 DAC	42 DAP	42 DAP	42 DAP	42 DAP	42 DAP
	Days After First/Last Applic.						38 17	38 17	43 22	43 22	43 22	43 22	43 22
	Trt-Eval Interval						17 DAE	17 DAE	27 DAD	27 DAD	27 DAD	27 DAD	27 DAD
	Plant-Eval Interval						38 DP-1	38 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						77.5	100.0	98.3	88.3	100.0	76.3	92.5
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						92.0	100.0	97.0	76.3	100.0	75.0	94.5
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						92.5	100.0	99.5	77.0	100.0	65.0	96.3
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	100.0	99.0	92.3	100.0	33.8	99.5
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						96.3	100.0	99.5	91.3	100.0	23.8	97.5
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	23	24	25	26	27	28	29
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						IPOHG	ELEIN	ECHCG	POROL	PHYAN	CYPES	IPOHG
	Pest Scientific Name						Ipomoea hedera>	Eleusine indica	Echinochloa cr>	Portulaca oler>	Physalis angul>	Cyperus escule>	Ipomoea hedera>
	Pest Name						Entireleaf mor>	Goosegrass	Common barnyar>	Common purslane	Cutleaf ground>	Yellow nutsedge	Entireleaf mor>
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-28-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						42 DAP	43 DAD	43 DAD	43 DAD	43 DAD	43 DAD	43 DAD
	Days After First/Last Applic.						43 22	59 38	59 38	59 38	59 38	59 38	59 38
	Trt-Eval Interval						27 DAD						
	Plant-Eval Interval						43 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						100.0	96.6	81.9	99.7	69.9	91.5	100.0
	Replicate 2						100.0	99.2	94.0	100.0	70.9	90.3	100.0
	Replicate 3						100.0	96.2	89.6	100.0	65.2	94.0	100.0
	Replicate 4						100.0	97.8	90.5	100.0	60.9	98.6	100.0
	TABLE OF A (spacing) MEANS												
1	12" SPACING						100.0	97.8	92.4	100.0	67.4	93.6	100.0
2	16" SPACING						100.0	97.1	85.6	99.8	66.0	93.7	100.0
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	100.0	99.5	93.5	100.0	58.8	81.6	100.0
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	100.0	98.5	85.4	100.0	96.0	95.0	100.0
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	100.0	95.8	76.9	100.0	84.8	92.4	100.0
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	100.0	97.6	88.8	99.4	80.6	91.6	100.0
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	100.0	93.9	91.4	100.0	56.3	93.5	100.0
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	100.0	97.5	79.1	100.0	49.4	95.0	100.0
7	COMMAND	1	pt/a			B	100.0	96.6	96.9	100.0	8.1	99.8	100.0
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	100.0	100.0	100.0	100.0	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						100.0	99.5	97.5	100.0	58.8	80.8	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						100.0	99.5	89.5	100.0	58.8	82.5	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						100.0	98.5	87.5	100.0	96.3	92.5	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						100.0	98.5	83.3	100.0	95.8	97.5	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	95.3	88.8	100.0	89.5	90.8	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						100.0	96.3	65.0	100.0	80.0	94.0	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						100.0	99.5	91.3	100.0	78.8	90.8	100.0
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						100.0	95.8	86.3	98.8	82.5	92.5	100.0
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B						
4	DUAL MAGNUM	1	pt/a	C						
1	12" SPACING				100.0	94.5	94.0	100.0	56.3	98.8	100.0
5	VALOR	1	oz/a	A						
5	COMMAND	1	pt/a	B						
5	DUAL MAGNUM	1	pt/a	E						

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	23	24	25	26	27	28	29
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						IPOHG	ELEIN	ECHCG	POROL	PHYAN	CYPES	IPOHG
	Pest Scientific Name						Ipomoea hedera>	Eleusine indica	Echinochloa cr>	Portulaca oler>	Physalis angul>	Cyperus escule>	Ipomoea hedera>
	Pest Name						Entireleaf mor>	Goosegrass	Common barnyar>	Common purslane	Cutleaf ground>	Yellow nutsedge	Entireleaf mor>
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-28-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013	Sep-13-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						42 DAP	43 DAD	43 DAD	43 DAD	43 DAD	43 DAD	43 DAD
	Days After First/Last Applic.						43 22	59 38	59 38	59 38	59 38	59 38	59 38
	Trt-Eval Interval						27 DAD						
	Plant-Eval Interval						43 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1	59 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						100.0	93.3	88.8	100.0	56.3	88.3	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						100.0	96.5	83.8	100.0	52.5	95.0	100.0
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						100.0	98.5	74.5	100.0	46.3	95.0	100.0
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	98.3	96.3	100.0	7.5	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						100.0	95.0	97.5	100.0	8.8	99.5	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Pest Type								W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
Pest Code								ELEIN	ECHCG	PHYAN	POROL	IPOHG	CYPES	
Pest Scientific Name								Eleusine indica	Echinochloa cr>	Physalis angul>	Portulaca oler>	Ipomoea hedera>	Cyperus escule>	
Pest Name								Goosegrass	Common barnyar>	Cutleaf ground>	Common purslane	Entireleaf mor>	Yellow nutsedge	
Crop Code								IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale								BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
Crop Scientific Name								Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name								Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date								Sep-19-2013	Sep-19-2013	Sep-19-2013	Sep-19-2013	Sep-19-2013	Sep-19-2013	Oct-28-2013
Rating Type								CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	ONES YIELD
Rating Unit								%	%	%	%	%	%	BU/A
Number of Subsamples								1	1	1	1	1	1	1
Rating Timing								44 DAE	44 DAE	44 DAE	44 DAE	44 DAE	44 DAE	
Days After First/Last Applic.								65 44	65 44	65 44	65 44	65 44	65 44	104 83
Trt-Eval Interval														
Plant-Eval Interval								65 DP-1	65 DP-1	65 DP-1	65 DP-1	65 DP-1	65 DP-1	104 DP-1
ARM Action Codes														TY2
Number of Decimals														1
Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code		30	31	32	33	34	35	37
TABLE OF R MEANS														
Replicate 1								96.9	87.1	69.7	100.0	100.0	92.9	319.5
Replicate 2								99.5	94.7	69.1	100.0	100.0	91.8	307.1
Replicate 3								97.9	90.6	61.9	100.0	100.0	94.8	329.5
Replicate 4								98.9	89.6	57.5	100.0	100.0	98.0	296.8
TABLE OF A (spacing) MEANS														
1	12" SPACING							98.5	93.9	66.4	100.0	100.0	94.7	330.1
2	16" SPACING							98.1	87.1	62.7	100.0	100.0	94.1	296.4
TABLE OF B (herbicides) MEANS														
1	VALOR	2	oz/a			A		100.0	93.3	55.6	100.0	100.0	84.8	371.5
1	COMMAND	2	pt/a			B								
2	VALOR	2	oz/a			A		98.6	88.3	93.8	100.0	100.0	94.5	445.6
2	DUAL MAGNUM	1	pt/a			B								
3	VALOR	1	oz/a			A		97.4	80.1	82.5	100.0	100.0	89.1	328.6
3	DUAL MAGNUM	0.75	pt/a			B								
4	VALOR	1	oz/a			A		95.9	93.0	74.4	100.0	100.0	92.0	402.0
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
5	VALOR	1	oz/a			A		97.6	91.1	54.4	100.0	100.0	96.3	271.3
5	COMMAND	1	pt/a			B								
5	DUAL MAGNUM	1	pt/a			E								
6	DUAL MAGNUM	1	pt/a			B		97.6	78.9	45.6	100.0	100.0	98.9	278.2
7	COMMAND	1	pt/a			B		99.3	99.3	10.0	100.0	100.0	99.5	158.1
7	DUAL MAGNUM	1	pt/a			D								
8	WEED FREE							100.0	100.0	100.0	100.0	100.0	100.0	250.8
TABLE OF A (spacing) B (herbicides) MEANS														
1	12" SPACING							100.0	95.8	53.8	100.0	100.0	82.0	349.7
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
2	16" SPACING							100.0	90.8	57.5	100.0	100.0	87.5	393.3
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
1	12" SPACING							99.0	91.3	95.0	100.0	100.0	94.0	482.9
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
2	16" SPACING							98.3	85.3	92.5	100.0	100.0	95.0	408.2
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
1	12" SPACING							95.3	92.8	88.8	100.0	100.0	91.3	347.2
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
2	16" SPACING							99.5	67.5	76.3	100.0	100.0	87.0	309.9
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
1	12" SPACING							98.5	94.5	76.3	100.0	100.0	92.0	407.0
4	VALOR	1	oz/a			A								
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
2	16" SPACING							93.3	91.5	72.5	100.0	100.0	92.0	397.0
4	VALOR	1	oz/a			A								

4	COMMAND	1	pt/a	B						
4	DUAL MAGNUM	1	pt/a	C						
1	12" SPACING				99.5	93.3	53.8	100.0	100.0	100.0	272.6
5	VALOR	1	oz/a	A						
5	COMMAND	1	pt/a	B						
5	DUAL MAGNUM	1	pt/a	E						

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	30	31	32	33	34	35	37
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	
	Pest Code						ELEIN	ECHCG	PHYAN	POROL	IPOHG	CYPES	
	Pest Scientific Name						Eleusine indica	Echinochloa cr>	Physalis angul>	Portulaca oler>	Ipomoea hedera>	Cyperus escule>	
	Pest Name						Goosegrass	Common barnyar>	Cutleaf ground>	Common purslane	Entireleaf mor>	Yellow nutsedge	
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Sep-19-2013	Sep-19-2013	Sep-19-2013	Sep-19-2013	Sep-19-2013	Sep-19-2013	Oct-28-2013
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	ONES YIELD
	Rating Unit						%	%	%	%	%	%	BU/A
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						44 DAE	44 DAE	44 DAE	44 DAE	44 DAE	44 DAE	
	Days After First/Last Applic.						65 44	65 44	65 44	65 44	65 44	65 44	104 83
	Trt-Eval Interval												
	Plant-Eval Interval						65 DP-1	65 DP-1	65 DP-1	65 DP-1	65 DP-1	65 DP-1	104 DP-1
	ARM Action Codes												TY2
	Number of Decimals												1
2	16" SPACING						95.8	89.0	55.0	100.0	100.0	92.5	270.1
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						96.5	84.5	53.8	100.0	100.0	98.8	319.9
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						98.8	73.3	37.5	100.0	100.0	99.0	236.5
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						99.5	99.0	10.0	100.0	100.0	99.5	151.8
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						99.0	99.5	10.0	100.0	100.0	99.5	164.3
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	309.9
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	191.7
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	39	41	43
Pest Type									
Pest Code									
Pest Scientific Name									
Pest Name									
Crop Code							IPOBA	IPOBA	IPOBA
BBCH Scale							BVPP	BVPP	BVPP
Crop Scientific Name							Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name							Sweet potato	Sweet potato	Sweet potato
Rating Date							Oct-28-2013	Oct-28-2013	Oct-28-2013
Rating Type							CANNERYIELD	JUMBOYIELD	TOTALYIELD
Rating Unit							BU/A	BU/A	BU/A
Number of Subsamples							1	1	1
Rating Timing									
Days After First/Last Applic.							104 83	104 83	104 83
Trt-Eval Interval									
Plant-Eval Interval							104 DP-1	104 DP-1	104 DP-1
ARM Action Codes							TY3	TY4	TY5
Number of Decimals							1	1	1
TABLE OF R MEANS									
Replicate 1							148.7	12.8	481.0
Replicate 2							133.2	1.6	441.8
Replicate 3							140.6	7.2	477.3
Replicate 4							132.9	9.3	439.0
TABLE OF A (spacing) MEANS									
1	12" SPACING						155.4	9.8	495.3
2	16" SPACING						122.3	5.6	424.2
TABLE OF B (herbicides) MEANS									
1	VALOR	2	oz/a			A	151.8	10.0	533.3
1	COMMAND	2	pt/a			B			
2	VALOR	2	oz/a			A	176.1	20.5	642.2
2	DUAL MAGNUM	1	pt/a			B			
3	VALOR	1	oz/a			A	159.3	17.4	505.3
3	DUAL MAGNUM	0.75	pt/a			B			
4	VALOR	1	oz/a			A	150.0	3.1	555.1
4	COMMAND	1	pt/a			B			
4	DUAL MAGNUM	1	pt/a			C			
5	VALOR	1	oz/a			A	115.1	0.0	386.4
5	COMMAND	1	pt/a			B			
5	DUAL MAGNUM	1	pt/a			E			
6	DUAL MAGNUM	1	pt/a			B	128.2	10.6	416.9
7	COMMAND	1	pt/a			B	107.7	0.0	265.7
7	DUAL MAGNUM	1	pt/a			D			
8	WEED FREE						122.6	0.0	373.4
TABLE OF A (spacing) B (herbicides) MEANS									
1	12" SPACING						189.2	6.2	545.1
1	VALOR	2	oz/a			A			
1	COMMAND	2	pt/a			B			
2	16" SPACING						114.5	13.7	521.5
1	VALOR	2	oz/a			A			
1	COMMAND	2	pt/a			B			
1	12" SPACING						184.2	19.9	687.0
2	VALOR	2	oz/a			A			
2	DUAL MAGNUM	1	pt/a			B			
2	16" SPACING						168.0	21.2	597.4
2	VALOR	2	oz/a			A			
2	DUAL MAGNUM	1	pt/a			B			
1	12" SPACING						178.0	28.6	553.8
3	VALOR	1	oz/a			A			
3	DUAL MAGNUM	0.75	pt/a			B			
2	16" SPACING						140.6	6.2	456.8
3	VALOR	1	oz/a			A			
3	DUAL MAGNUM	0.75	pt/a			B			
1	12" SPACING						160.5	6.2	573.7
4	VALOR	1	oz/a			A			
4	COMMAND	1	pt/a			B			
4	DUAL MAGNUM	1	pt/a			C			
2	16" SPACING						139.4	0.0	536.4
4	VALOR	1	oz/a			A			

4	COMMAND	1	pt/a	B			
4	DUAL MAGNUM	1	pt/a	C			
1	12" SPACING				123.2	0.0	395.8
5	VALOR	1	oz/a	A			
5	COMMAND	1	pt/a	B			
5	DUAL MAGNUM	1	pt/a	E			

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	39	41	43
	Pest Type								
	Pest Code								
	Pest Scientific Name								
	Pest Name								
	Crop Code						IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato
	Rating Date						Oct-28-2013	Oct-28-2013	Oct-28-2013
	Rating Type						CANNERYIELD	JUMBOYIELD	TOTALYIELD
	Rating Unit						BU/A	BU/A	BU/A
	Number of Subsamples						1	1	1
	Rating Timing								
	Days After First/Last Applic.						104 83	104 83	104 83
	Trt-Eval Interval								
	Plant-Eval Interval						104 DP-1	104 DP-1	104 DP-1
	ARM Action Codes						TY3	TY4	TY5
	Number of Decimals						1	1	1
2	16" SPACING						107.0	0.0	377.1
5	VALOR	1	oz/a			A			
5	COMMAND	1	pt/a			B			
5	DUAL MAGNUM	1	pt/a			E			
1	12" SPACING						154.3	17.4	491.6
6	DUAL MAGNUM	1	pt/a			B			
2	16" SPACING						102.1	3.7	342.3
6	DUAL MAGNUM	1	pt/a			B			
1	12" SPACING						109.5	0.0	261.4
7	COMMAND	1	pt/a			B			
7	DUAL MAGNUM	1	pt/a			D			
2	16" SPACING						105.8	0.0	270.1
7	COMMAND	1	pt/a			B			
7	DUAL MAGNUM	1	pt/a			D			
1	12" SPACING						144.4	0.0	454.3
8	WEED FREE								
2	16" SPACING						100.8	0.0	292.5
8	WEED FREE								

LSU Ag Center Northeast Research Station

Pre, Post and Delayed Post Applications of Herbicides in Sweet Potato at Different Row Spacing Intervals

Trial ID: Protocol ID:
Location: Study Director:
Project ID: Investigator: Donnie Miller
Sponsor Contact:

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	13147.734375				
R	3	46.671875	15.557292	0.067	0.9769	11.2
A	1	0.140625	0.140625	0.001	0.9833	13.1
RA	3	818.796875	272.932292	1.173	0.3438	15.9
B	7	492.109375	70.301339	0.285	0.9528	16.3
RB	21	5186.453125	246.973958	1.061	0.4464	31.7
AB	7	1716.734375	245.247768	1.054	0.4255	22.4
RAB	21	4886.828125	232.706101			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	13147.734375				
R	3	46.671875	15.557292	0.064	0.9785	11.1
A	1	0.140625	0.140625	0.001	0.9809	7.9
B	7	492.109375	70.301339	0.290	0.9543	15.7
AB	7	1716.734375	245.247768	1.013	0.4350	22.2
ERROR	45	10892.078125	242.046181			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	31353.437500				
R	3	73.187500	24.395833	0.111	0.9530	10.9
A	1	410.062500	410.062500	2.452	0.2153	10.3
RA	3	501.687500	167.229167	0.758	0.5303	15.4
B	7	18487.187500	2641.026786	9.338	0.0001	17.5
RB	21	5939.062500	282.812500	1.281	0.2875	30.9
AB	7	1307.687500	186.812500	0.846	0.5623	21.8
RAB	21	4634.562500	220.693452			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	31353.437500				
R	3	73.187500	24.395833	0.099	0.9601	11.2
A	1	410.062500	410.062500	1.666	0.2034	7.9
B	7	18487.187500	2641.026786	10.731	0.0001	15.9
AB	7	1307.687500	186.812500	0.759	0.6241	22.4
ERROR	45	11075.312500	246.118056			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	10186.109375				
R	3	410.796875	136.932292	0.817	0.4989	9.5
A	1	102.515625	102.515625	0.640	0.4820	10.1
RA	3	480.171875	160.057292	0.955	0.4322	13.5
B	7	1032.234375	147.462054	0.891	0.5310	13.4
RB	21	3476.578125	165.551339	0.988	0.5111	26.9
AB	7	1164.109375	166.301339	0.992	0.4635	19.0
RAB	21	3519.703125	167.604911			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	10186.109375				
R	3	410.796875	136.932292	0.824	0.4874	9.2
A	1	102.515625	102.515625	0.617	0.4363	6.5
B	7	1032.234375	147.462054	0.888	0.5241	13.0
AB	7	1164.109375	166.301339	1.001	0.4432	18.4
ERROR	45	7476.453125	166.143403			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	16786.484375				
R	3	1186.421875	395.473958	1.773	0.1831	11.0
A	1	34.515625	34.515625	0.038	0.8578	24.0
RA	3	2721.671875	907.223958	4.067	0.0200	15.5
B	7	889.359375	127.051339	0.479	0.8388	16.9
RB	21	5568.203125	265.152530	1.189	0.3478	31.1
AB	7	1702.359375	243.194196	1.090	0.4043	22.0
RAB	21	4683.953125	223.045387			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	16786.484375				
R	3	1186.421875	395.473958	1.372	0.2636	12.1
A	1	34.515625	34.515625	0.120	0.7310	8.6
B	7	889.359375	127.051339	0.441	0.8712	17.2
AB	7	1702.359375	243.194196	0.844	0.5576	24.3
ERROR	45	12973.828125	288.307292			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	9839.000000				
R	3	481.500000	160.500000	1.030	0.3994	9.2
A	1	169.000000	169.000000	1.053	0.3803	10.1
RA	3	481.500000	160.500000	1.030	0.3994	13.0
B	7	1082.000000	154.571429	0.992	0.4635	13.0
RB	21	3271.500000	155.785714	1.000	0.5000	26.0
AB	7	1082.000000	154.571429	0.992	0.4635	18.4
RAB	21	3271.500000	155.785714			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Jul-31-2013 CONTROL % 1 14 DAP 15 5 15 DP-1 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	9839.000000				
R	3	481.500000	160.500000	1.028	0.3891	8.9
A	1	169.000000	169.000000	1.083	0.3037	6.3
B	7	1082.000000	154.571429	0.990	0.4505	12.6
AB	7	1082.000000	154.571429	0.990	0.4505	17.9
ERROR	45	7024.500000	156.100000			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7757.109375				
R	3	205.921875	68.640625	0.563	0.6455	8.1
A	1	346.890625	346.890625	3.000	0.1817	8.6
RA	3	346.921875	115.640625	0.948	0.4353	11.5
B	7	2341.234375	334.462054	6.285	0.0005	7.6
RB	21	1117.453125	53.212054	0.436	0.9680	23.0
AB	7	837.234375	119.604911	0.981	0.4709	16.2
RAB	21	2561.453125	121.973958			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7757.109375				
R	3	205.921875	68.640625	0.767	0.5184	6.8
A	1	346.890625	346.890625	3.877	0.0551	4.8
B	7	2341.234375	334.462054	3.739	0.0028	9.6
AB	7	837.234375	119.604911	1.337	0.2556	13.5
ERROR	45	4025.828125	89.462847			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	51.750000				
R	3	1.125000	0.375000	0.474	0.7039	0.7
A	1	2.250000	2.250000	6.000	0.0917	0.5
RA	3	1.125000	0.375000	0.474	0.7039	0.9
B	7	7.000000	1.000000	1.263	0.3149	0.9
RB	21	16.625000	0.791667	1.000	0.5000	1.9
AB	7	7.000000	1.000000	1.263	0.3149	1.3
RAB	21	16.625000	0.791667			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	51.750000				
R	3	1.125000	0.375000	0.491	0.6904	0.6
A	1	2.250000	2.250000	2.945	0.0930	0.4
B	7	7.000000	1.000000	1.309	0.2681	0.9
AB	7	7.000000	1.000000	1.309	0.2681	1.2
ERROR	45	34.375000	0.763889			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	38780.937500				
R	3	780.687500	260.229167	1.483	0.2479	9.7
A	1	20.250000	20.250000	0.114	0.7580	10.6
RA	3	533.500000	177.833333	1.014	0.4064	13.8
B	7	28678.187500	4096.883929	23.918	0.0001	13.6
RB	21	3597.062500	171.288690	0.976	0.5215	27.5
AB	7	1487.500000	212.500000	1.211	0.3397	19.5
RAB	21	3683.750000	175.416667			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	38780.937500				
R	3	780.687500	260.229167	1.499	0.2278	9.4
A	1	20.250000	20.250000	0.117	0.7343	6.7
B	7	28678.187500	4096.883929	23.593	0.0001	13.3
AB	7	1487.500000	212.500000	1.224	0.3099	18.8
ERROR	45	7814.312500	173.651389			

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COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7621.437500				
R	3	848.187500	282.729167	1.941	0.1539	8.9
A	1	5.062500	5.062500	0.045	0.8451	8.4
RA	3	335.187500	111.729167	0.767	0.5253	12.6
B	7	1960.687500	280.098214	6.989	0.0002	6.6
RB	21	841.562500	40.074405	0.275	0.9977	25.1
AB	7	571.687500	81.669643	0.561	0.7790	17.8
RAB	21	3059.062500	145.669643			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7621.437500				
R	3	848.187500	282.729167	3.004	0.0402	6.9
A	1	5.062500	5.062500	0.054	0.8177	4.9
B	7	1960.687500	280.098214	2.976	0.0119	9.8
AB	7	571.687500	81.669643	0.868	0.5391	13.9
ERROR	45	4235.812500	94.129167			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-14-2013 CONTROL % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For Aug-14-2013 INJURY % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For Aug-14-2013 INJURY % 1 28 DAP 29 8 13 DAD 29 DP-1 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	238.609375				
R	3	13.671875	4.557292	1.073	0.3819	1.5
A	1	6.890625	6.890625	2.254	0.2303	1.4
RA	3	9.171875	3.057292	0.720	0.5513	2.1
B	7	40.734375	5.819196	2.047	0.0965	1.8
RB	21	59.703125	2.843006	0.669	0.8176	4.3
AB	7	19.234375	2.747768	0.647	0.7129	3.0
RAB	21	89.203125	4.247768			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	238.609375				
R	3	13.671875	4.557292	1.297	0.2870	1.3
A	1	6.890625	6.890625	1.962	0.1682	0.9
B	7	40.734375	5.819196	1.657	0.1444	1.9
AB	7	19.234375	2.747768	0.782	0.6056	2.7
ERROR	45	158.078125	3.512847			

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COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	12840.000000				
R	3	631.125000	210.375000	0.963	0.4286	10.9
A	1	451.562500	451.562500	2.111	0.2422	11.6
RA	3	641.812500	213.937500	0.979	0.4214	15.4
B	7	3063.750000	437.678571	4.109	0.0055	10.7
RB	21	2237.125000	106.529762	0.488	0.9462	30.7
AB	7	1226.687500	175.241071	0.802	0.5947	21.7
RAB	21	4587.937500	218.473214			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	12840.000000				
R	3	631.125000	210.375000	1.268	0.2968	9.2
A	1	451.562500	451.562500	2.721	0.1060	6.5
B	7	3063.750000	437.678571	2.638	0.0226	13.0
AB	7	1226.687500	175.241071	1.056	0.4069	18.4
ERROR	45	7466.875000	165.930556			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7981.984375				
R	3	417.296875	139.098958	1.080	0.3790	8.3
A	1	107.640625	107.640625	0.938	0.4042	8.5
RA	3	344.171875	114.723958	0.891	0.4621	11.8
B	7	869.109375	124.158482	0.991	0.4643	11.6
RB	21	2631.078125	125.289435	0.973	0.5247	23.6
AB	7	908.484375	129.783482	1.008	0.4536	16.7
RAB	21	2704.203125	128.771577			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7981.984375				
R	3	417.296875	139.098958	1.102	0.3582	8.0
A	1	107.640625	107.640625	0.853	0.3607	5.7
B	7	869.109375	124.158482	0.984	0.4550	11.4
AB	7	908.484375	129.783482	1.028	0.4249	16.1
ERROR	45	5679.453125	126.210069			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 15)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	47163.750000				
R	3	1491.500000	497.166667	2.022	0.1416	11.5
A	1	33.062500	33.062500	0.041	0.8522	22.5
RA	3	2410.187500	803.395833	3.268	0.0415	16.3
B	7	32991.000000	4713.000000	23.474	0.0001	14.7
RB	21	4216.250000	200.773810	0.817	0.6766	32.6
AB	7	859.187500	122.741071	0.499	0.8245	23.1
RAB	21	5162.562500	245.836310			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 15)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	47163.750000				
R	3	1491.500000	497.166667	1.898	0.1435	11.6
A	1	33.062500	33.062500	0.126	0.7241	8.2
B	7	32991.000000	4713.000000	17.990	0.0001	16.4
AB	7	859.187500	122.741071	0.469	0.8521	23.1
ERROR	45	11789.000000	261.977778			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	11876.437500				
R	3	1711.812500	570.604167	5.489	0.0061	7.5
A	1	162.562500	162.562500	0.230	0.6645	21.2
RA	3	2123.062500	707.687500	6.807	0.0022	10.6
B	7	3220.187500	460.026786	4.695	0.0027	10.3
RB	21	2057.437500	97.973214	0.942	0.5534	21.2
AB	7	418.187500	59.741071	0.575	0.7684	15.0
RAB	21	2183.187500	103.961310			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	11876.437500				
R	3	1711.812500	570.604167	4.035	0.0126	8.5
A	1	162.562500	162.562500	1.150	0.2894	6.0
B	7	3220.187500	460.026786	3.253	0.0070	12.0
AB	7	418.187500	59.741071	0.422	0.8832	17.0
ERROR	45	6363.687500	141.415278			

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COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 17)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-23-2013 CONTROL % 1 28 DAC 38 17 17 DAE 38 DP-1 (Data Column 17)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 18)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	283.437500				
R	3	24.187500	8.062500	2.685	0.0728	1.3
A	1	7.562500	7.562500	1.599	0.2953	1.7
RA	3	14.187500	4.729167	1.575	0.2252	1.8
B	7	39.687500	5.669643	1.161	0.3655	2.3
RB	21	102.562500	4.883929	1.626	0.1366	3.6
AB	7	32.187500	4.598214	1.531	0.2110	2.5
RAB	21	63.062500	3.002976			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 18)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	283.437500				
R	3	24.187500	8.062500	2.018	0.1249	1.4
A	1	7.562500	7.562500	1.893	0.1757	1.0
B	7	39.687500	5.669643	1.419	0.2215	2.0
AB	7	32.187500	4.598214	1.151	0.3497	2.9
ERROR	45	179.812500	3.995833			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 19)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	13225.000000				
R	3	1308.125000	436.041667	1.908	0.1592	11.1
A	1	410.062500	410.062500	2.341	0.2235	10.5
RA	3	525.562500	175.187500	0.767	0.5255	15.7
B	7	2797.250000	399.607143	4.269	0.0045	10.1
RB	21	1965.625000	93.601190	0.410	0.9767	31.4
AB	7	1419.687500	202.812500	0.888	0.5333	22.2
RAB	21	4798.687500	228.508929			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 19)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	13225.000000				
R	3	1308.125000	436.041667	2.692	0.0574	9.1
A	1	410.062500	410.062500	2.531	0.1186	6.4
B	7	2797.250000	399.607143	2.467	0.0313	12.9
AB	7	1419.687500	202.812500	1.252	0.2955	18.2
ERROR	45	7289.875000	161.997222			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 20)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	3.937500				
R	3	0.187500	0.062500	1.000	0.4123	0.2
A	1	0.062500	0.062500	1.000	0.3910	0.2
RA	3	0.187500	0.062500	1.000	0.4123	0.3
B	7	0.437500	0.062500	1.000	0.4586	0.3
RB	21	1.312500	0.062500	1.000	0.5000	0.5
AB	7	0.437500	0.062500	1.000	0.4586	0.4
RAB	21	1.312500	0.062500			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 20)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	3.937500				
R	3	0.187500	0.062500	1.000	0.4016	0.2
A	1	0.062500	0.062500	1.000	0.3227	0.1
B	7	0.437500	0.062500	1.000	0.4439	0.3
AB	7	0.437500	0.062500	1.000	0.4439	0.4
ERROR	45	2.812500	0.062500			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 21)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	46091.109375				
R	3	1942.296875	647.432292	2.116	0.1287	12.9
A	1	8.265625	8.265625	0.010	0.9259	22.6
RA	3	2426.671875	808.890625	2.643	0.0758	18.2
B	7	30709.484375	4387.069196	25.607	0.0001	13.6
RB	21	3597.828125	171.325149	0.560	0.9040	36.4
AB	7	980.109375	140.015625	0.458	0.8539	25.7
RAB	21	6426.453125	306.021577			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 21)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	46091.109375				
R	3	1942.296875	647.432292	2.340	0.0860	11.9
A	1	8.265625	8.265625	0.030	0.8636	8.4
B	7	30709.484375	4387.069196	15.856	0.0001	16.8
AB	7	980.109375	140.015625	0.506	0.8251	23.8
ERROR	45	12450.953125	276.687847			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 22)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7398.234375				
R	3	957.921875	319.307292	3.100	0.0487	7.5
A	1	129.390625	129.390625	0.747	0.4511	10.5
RA	3	519.796875	173.265625	1.682	0.2013	10.6
B	7	2319.609375	331.372768	6.978	0.0002	7.2
RB	21	997.203125	47.485863	0.461	0.9584	21.1
AB	7	311.484375	44.497768	0.432	0.8711	14.9
RAB	21	2162.828125	102.991815			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 22)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7398.234375				
R	3	957.921875	319.307292	3.905	0.0146	6.5
A	1	129.390625	129.390625	1.582	0.2149	4.6
B	7	2319.609375	331.372768	4.052	0.0016	9.1
AB	7	311.484375	44.497768	0.544	0.7963	12.9
ERROR	45	3679.828125	81.773958			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 23)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2013 CONTROL % 1 42 DAP 43 22 27 DAD 43 DP-1 (Data Column 23)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 24)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1379.609375				
R	3	87.796875	29.265625	1.260	0.3134	3.5
A	1	6.890625	6.890625	0.750	0.4501	2.4
RA	3	27.546875	9.182292	0.395	0.7576	5.0
B	7	225.484375	32.212054	1.384	0.2633	5.0
RB	21	488.828125	23.277530	1.003	0.4977	10.0
AB	7	55.484375	7.926339	0.341	0.9255	7.1
RAB	21	487.578125	23.218006			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 24)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1379.609375				
R	3	87.796875	29.265625	1.312	0.2823	3.4
A	1	6.890625	6.890625	0.309	0.5811	2.4
B	7	225.484375	32.212054	1.444	0.2119	4.8
AB	7	55.484375	7.926339	0.355	0.9231	6.7
ERROR	45	1003.953125	22.310069			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 25)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	14328.984375				
R	3	1253.296875	417.765625	2.238	0.1136	10.0
A	1	735.765625	735.765625	1.366	0.3269	18.5
RA	3	1616.046875	538.682292	2.886	0.0598	14.2
B	7	3733.109375	533.301339	5.011	0.0018	10.7
RB	21	2235.078125	106.432292	0.570	0.8969	28.4
AB	7	835.859375	119.408482	0.640	0.7184	20.1
RAB	21	3919.828125	186.658482			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 25)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	14328.984375				
R	3	1253.296875	417.765625	2.419	0.0785	9.4
A	1	735.765625	735.765625	4.261	0.0448	6.6
B	7	3733.109375	533.301339	3.088	0.0096	13.3
AB	7	835.859375	119.408482	0.691	0.6787	18.8
ERROR	45	7770.953125	172.687847			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 26)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	24.609375				
R	3	1.171875	0.390625	1.000	0.4123	0.5
A	1	0.390625	0.390625	1.000	0.3910	0.5
RA	3	1.171875	0.390625	1.000	0.4123	0.7
B	7	2.734375	0.390625	1.000	0.4586	0.7
RB	21	8.203125	0.390625	1.000	0.5000	1.3
AB	7	2.734375	0.390625	1.000	0.4586	0.9
RAB	21	8.203125	0.390625			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 26)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	24.609375				
R	3	1.171875	0.390625	1.000	0.4016	0.4
A	1	0.390625	0.390625	1.000	0.3227	0.3
B	7	2.734375	0.390625	1.000	0.4439	0.6
AB	7	2.734375	0.390625	1.000	0.4439	0.9
ERROR	45	17.578125	0.390625			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 27)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	68110.484375				
R	3	1016.421875	338.807292	0.934	0.4417	14.0
A	1	31.640625	31.640625	0.035	0.8640	24.0
RA	3	2729.796875	909.932292	2.509	0.0866	19.8
B	7	51125.359375	7303.622768	28.764	0.0001	16.6
RB	21	5332.203125	253.914435	0.700	0.7896	39.6
AB	7	258.734375	36.962054	0.102	0.9976	28.0
RAB	21	7616.328125	362.682292			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 27)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	68110.484375				
R	3	1016.421875	338.807292	0.972	0.4141	13.3
A	1	31.640625	31.640625	0.091	0.7645	9.4
B	7	51125.359375	7303.622768	20.963	0.0001	18.9
AB	7	258.734375	36.962054	0.106	0.9977	26.7
ERROR	45	15678.328125	348.407292			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 28)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7389.234375				
R	3	650.046875	216.682292	1.808	0.1767	8.1
A	1	0.140625	0.140625	0.001	0.9741	8.5
RA	3	340.921875	113.640625	0.948	0.4353	11.4
B	7	1852.109375	264.587054	3.222	0.0176	9.4
RB	21	1724.578125	82.122768	0.685	0.8034	22.8
AB	7	304.234375	43.462054	0.363	0.9138	16.1
RAB	21	2517.203125	119.866815			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 28)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	7389.234375				
R	3	650.046875	216.682292	2.128	0.1100	7.2
A	1	0.140625	0.140625	0.001	0.9705	5.1
B	7	1852.109375	264.587054	2.598	0.0243	10.2
AB	7	304.234375	43.462054	0.427	0.8804	14.4
ERROR	45	4582.703125	101.837847			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 29)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-13-2013 CONTROL % 1 43 DAD 59 38 59 DP-1 (Data Column 29)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 30)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	807.359375				
R	3	62.921875	20.973958	1.933	0.1551	2.4
A	1	3.515625	3.515625	1.398	0.3223	1.3
RA	3	7.546875	2.515625	0.232	0.8731	3.4
B	7	115.484375	16.497768	1.320	0.2896	3.7
RB	21	262.453125	12.497768	1.152	0.3744	6.9
AB	7	127.609375	18.229911	1.680	0.1683	4.8
RAB	21	227.828125	10.848958			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 30)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	807.359375				
R	3	62.921875	20.973958	1.896	0.1439	2.4
A	1	3.515625	3.515625	0.318	0.5757	1.7
B	7	115.484375	16.497768	1.491	0.1948	3.4
AB	7	127.609375	18.229911	1.648	0.1467	4.8
ERROR	45	497.828125	11.062847			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 31)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	12747.984375				
R	3	481.921875	160.640625	0.905	0.4554	9.8
A	1	735.765625	735.765625	2.183	0.2360	14.6
RA	3	1010.921875	336.973958	1.898	0.1608	13.9
B	7	3430.859375	490.122768	4.303	0.0043	11.1
RB	21	2391.703125	113.890625	0.642	0.8415	27.7
AB	7	969.109375	138.444196	0.780	0.6111	19.6
RAB	21	3727.703125	177.509673			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 31)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	12747.984375				
R	3	481.921875	160.640625	1.014	0.3955	9.0
A	1	735.765625	735.765625	4.643	0.0366	6.4
B	7	3430.859375	490.122768	3.093	0.0095	12.7
AB	7	969.109375	138.444196	0.874	0.5345	18.0
ERROR	45	7130.328125	158.451736			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 32)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	66435.937500				
R	3	1657.812500	552.604167	1.730	0.1916	13.1
A	1	225.000000	225.000000	0.250	0.6516	23.9
RA	3	2703.125000	901.041667	2.820	0.0638	18.6
B	7	48360.937500	6908.705357	23.815	0.0001	17.7
RB	21	6092.187500	290.104167	0.908	0.5865	37.2
AB	7	687.500000	98.214286	0.307	0.9426	26.3
RAB	21	6709.375000	319.494048			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 32)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	66435.937500				
R	3	1657.812500	552.604167	1.604	0.2017	13.3
A	1	225.000000	225.000000	0.653	0.4233	9.4
B	7	48360.937500	6908.705357	20.051	0.0001	18.8
AB	7	687.500000	98.214286	0.285	0.9565	26.5
ERROR	45	15504.687500	344.548611			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 33)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 33)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 34)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 34)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 35)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	5615.000000				
R	3	354.375000	118.125000	1.295	0.3022	7.0
A	1	6.250000	6.250000	0.032	0.8702	11.2
RA	3	593.375000	197.791667	2.169	0.1219	9.9
B	7	1660.250000	237.178571	5.658	0.0009	6.7
RB	21	880.375000	41.922619	0.460	0.9590	19.9
AB	7	205.000000	29.285714	0.321	0.9359	14.0
RAB	21	1915.375000	91.208333			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-19-2013 CONTROL % 1 44 DAE 65 44 65 DP-1 (Data Column 35)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	5615.000000				
R	3	354.375000	118.125000	1.568	0.2102	6.2
A	1	6.250000	6.250000	0.083	0.7746	4.4
B	7	1660.250000	237.178571	3.149	0.0085	8.8
AB	7	205.000000	29.285714	0.389	0.9040	12.4
ERROR	45	3389.125000	75.313889			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 ONES YIELD BU/A 1 104 83 104 DP-1 TY2 1 (Data Column 37)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	964037.146507				
R	3	9778.170180	3259.390060	0.337	0.7986	72.3
A	1	18234.711834	18234.711834	0.765	0.4461	122.8
RA	3	71491.785147	23830.595049	2.466	0.0904	102.2
B	7	479879.258740	68554.179820	10.297	0.0001	84.9
RB	21	139817.111973	6657.957713	0.689	0.7999	204.5
AB	7	41886.560253	5983.794322	0.619	0.7343	144.6
RAB	21	202949.548380	9664.264209			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 ONES YIELD BU/A 1 104 83 104 DP-1 TY2 1 (Data Column 37)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	964037.146507				
R	3	9778.170180	3259.390060	0.354	0.7864	68.6
A	1	18234.711834	18234.711834	1.981	0.1662	48.5
B	7	479879.258740	68554.179820	7.447	0.0001	97.0
AB	7	41886.560253	5983.794322	0.650	0.7123	137.1
ERROR	45	414258.445500	9205.743233			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 CANNERYIELD BU/A 1 104 83 104 DP-1 TY3 1 (Data Column 39)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	120651.049681				
R	3	2702.543928	900.847976	0.735	0.5427	25.7
A	1	17568.672050	17568.672050	4.904	0.1136	47.6
RA	3	10747.830755	3582.610252	2.924	0.0577	36.4
B	7	32103.315327	4586.187904	3.980	0.0064	35.3
RB	21	24196.661758	1152.221988	0.940	0.5553	72.8
AB	7	7601.896700	1085.985243	0.886	0.5341	51.5
RAB	21	25730.129164	1225.244246			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 CANNERYIELD BU/A 1 104 83 104 DP-1 TY3 1 (Data Column 39)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	120651.049681				
R	3	2702.543928	900.847976	0.668	0.5760	26.2
A	1	17568.672050	17568.672050	13.030	0.0008	18.6
B	7	32103.315327	4586.187904	3.401	0.0053	37.1
AB	7	7601.896700	1085.985243	0.805	0.5872	52.5
ERROR	45	60674.621676	1348.324926			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 JUMBOYIELD BU/A 1 104 83 104 DP-1 TY4 1 (Data Column 41)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	23342.413334				
R	3	1060.649104	353.549701	0.768	0.5245	15.8
A	1	282.297656	282.297656	0.493	0.5331	19.0
RA	3	1717.407203	572.469068	1.244	0.3188	22.3
B	7	3772.874984	538.982141	2.036	0.0981	16.9
RB	21	5559.598590	264.742790	0.575	0.8931	44.6
AB	7	1288.346095	184.049442	0.400	0.8915	31.5
RAB	21	9661.239703	460.059033			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 JUMBOYIELD BU/A 1 104 83 104 DP-1 TY4 1 (Data Column 41)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	23342.413334				
R	3	1060.649104	353.549701	0.939	0.4296	13.9
A	1	282.297656	282.297656	0.750	0.3911	9.8
B	7	3772.874984	538.982141	1.432	0.2164	19.6
AB	7	1288.346095	184.049442	0.489	0.8375	27.7
ERROR	45	16938.245496	376.405455			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 TOTALYIELD BU/A 1 104 83 104 DP-1 TY5 1 (Data Column 43)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1657973.890809				
R	3	24183.501351	8061.167117	0.500	0.6866	93.4
A	1	80874.573417	80874.573417	1.544	0.3023	182.1
RA	3	157139.872918	52379.957639	3.247	0.0424	132.1
B	7	817419.255457	116774.179351	13.343	0.0001	97.3
RB	21	183788.959633	8751.855221	0.542	0.9154	264.2
AB	7	55752.806595	7964.686656	0.494	0.8285	186.8
RAB	21	338814.921439	16134.043878			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Oct-28-2013 TOTALYIELD BU/A 1 104 83 104 DP-1 TY5 1 (Data Column 43)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1657973.890809				
R	3	24183.501351	8061.167117	0.534	0.6616	87.8
A	1	80874.573417	80874.573417	5.354	0.0253	62.1
B	7	817419.255457	116774.179351	7.731	0.0001	124.2
AB	7	55752.806595	7964.686656	0.527	0.8092	175.6
ERROR	45	679743.753989	15105.416755			

Pest Type
W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code
ECHCG, Echinochloa crus-galli, = US
PHYAN, Physalis angulata, = US
POROL, Portulaca oleracea, = US
CYPES, Cyperus esculentus, = US
IPOHG, Ipomoea hederacea integriuscul, = US
ELEIN, Eleusine indica, = US

Crop Code
IPOBA, BVPP, Ipomoea batatas, = US

Rating Unit
% = percent

Plant-Eval Interval
15 DP-1 = 1 IPOBA Jul-16-2013
29 DP-1 = 1 IPOBA Jul-16-2013
38 DP-1 = 1 IPOBA Jul-16-2013
43 DP-1 = 1 IPOBA Jul-16-2013
59 DP-1 = 1 IPOBA Jul-16-2013
65 DP-1 = 1 IPOBA Jul-16-2013
104 DP-1 = 1 IPOBA Jul-16-2013

ARM Action Codes
TY2 = 9.956572*[36]
TY3 = 9.956572*[38]
TY4 = 9.956572*[40]
TY5 = 9.956572*[42]

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Pre, Post and Delayed Post Applications of Herbicides in Sweet Potato at Different Row Spacing Intervals

Trial ID: Protocol ID:
Location: Study Director:
Project ID: Investigator: Donnie Miller
Sponsor Contact:

Pest Type							W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code							CYPES	PHYAN	IPOHG	ECHCG	POROL	MOLVE	AMASP
Pest Scientific Name							Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>	Mollugo vertic>	Amaranthus spi>
Pest Name							Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane	Carpetweed	Thorny pigweed
Crop Code							IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale							BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
Crop Scientific Name							Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name							Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date							Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012
Rating Type							CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							%	%	%	%	%	%	%
Number of Subsamples							1	1	1	1	1	1	1
Rating Timing							14 DAB	14 DAB	14 DAB	14 DAB	14 DAB	14 DAB	14 DAB
Days After First/Last Applic.							15 2	15 2	15 2	15 2	15 2	15 2	15 2
Trt-Eval Interval													
Plant-Eval Interval							15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1
ARM Action Codes													
Number of Decimals													
Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	1	2	3	4	5	6	7
TABLE OF R MEANS													
Replicate 1							88.8	95.6	95.6	100.0	100.0	100.0	100.0
Replicate 2							76.9	90.3	95.6	100.0	97.8	100.0	98.1
Replicate 3							78.1	87.5	99.4	99.7	99.4	100.0	100.0
Replicate 4							79.7	85.3	100.0	99.7	100.0	100.0	100.0
TABLE OF A (spacing) MEANS													
1	12" SPACING						81.4	89.8	96.9	100.0	99.8	100.0	100.0
2	16" SPACING						80.3	89.5	98.4	99.7	98.8	100.0	99.1
TABLE OF B (herbicides) MEANS													
1	VALOR	2	oz/a			A	63.1	93.8	100.0	100.0	100.0	100.0	100.0
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	82.5	100.0	100.0	100.0	100.0	100.0	100.0
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	88.1	100.0	96.3	99.4	99.4	100.0	100.0
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	79.4	96.3	97.5	100.0	99.4	100.0	100.0
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	78.8	92.5	96.3	99.4	98.8	100.0	100.0
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	85.0	90.0	95.6	100.0	96.9	100.0	96.3
7	COMMAND	1	pt/a			B	70.0	45.0	95.6	100.0	100.0	100.0	100.0
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	100.0	100.0	100.0	100.0	100.0	100.0
TABLE OF A (spacing) B (herbicides) MEANS													
1	12" SPACING						62.5	97.5	100.0	100.0	100.0	100.0	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						63.8	90.0	100.0	100.0	100.0	100.0	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						78.8	100.0	100.0	100.0	100.0	100.0	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						86.3	100.0	100.0	100.0	100.0	100.0	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						86.3	100.0	96.3	100.0	98.8	100.0	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						90.0	100.0	96.3	98.8	100.0	100.0	100.0
3	VALOR	1	oz/a			A							

3	DUAL MAGNUM	0.75	pt/a	B							
1	12" SPACING				72.5	92.5	96.3	100.0	100.0	100.0	100.0
4	VALOR	1	oz/a	A							
4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
2	16" SPACING				86.3	100.0	98.8	100.0	98.8	100.0	100.0
4	VALOR	1	oz/a	A							
4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				81.3	92.5	92.5	100.0	100.0	100.0	100.0
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	CYPES	PHYAN	IPOHG	ECHCG	POROL	MOLVE	AMASP
Pest Scientific Name	Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>	Mollugo vertic>	Amaranthus spi>
Pest Name	Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane	Carpetweed	Thorny pigweed
Crop Code	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
Crop Scientific Name	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012	Aug-1-2012
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Rating Timing	14 DAB	14 DAB	14 DAB	14 DAB	14 DAB	14 DAB	14 DAB
Days After First/Last Applic.	15 2	15 2	15 2	15 2	15 2	15 2	15 2
Trt-Eval Interval							
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1	15 DP-1
ARM Action Codes							
Number of Decimals							

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	1	2	3	4	5	6	7
2	16" SPACING						76.3	92.5	100.0	98.8	97.5	100.0	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						92.5	92.5	95.0	100.0	100.0	100.0	100.0
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						77.5	87.5	96.3	100.0	93.8	100.0	92.5
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						77.5	43.8	95.0	100.0	100.0	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						62.5	46.3	96.3	100.0	100.0	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	8	9	10	11	12	13	14
	Pest Type						W Weed		W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						ELEIN		CYPES	PHYAN	IPOHG	ECHCG	POROL
	Pest Scientific Name						Eleusine indica		Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>
	Pest Name						Goosegrass		Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-1-2012	Aug-1-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012
	Rating Type						CONTROL	INJURY	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%, 28DAB	%, 28DAB	%, 28DAB	%, 28DAB	%, 28DAB
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						14 DAB	14 DAB	16 DAC	16 DAC	16 DAC	16 DAC	16 DAC
	Days After First/Last Applic.						15 2	15 2	29 8	29 8	29 8	29 8	29 8
	Trt-Eval Interval								14 DAD	14 DAD	14 DAD	14 DAD	14 DAD
	Plant-Eval Interval						15 DP-1	15 DP-1	29 DP-1	29 DP-1	29 DP-1	29 DP-1	29 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						100.0	0.0	79.3	90.3	99.7	100.0	98.8
	Replicate 2						99.7	0.0	71.3	81.9	98.4	100.0	97.2
	Replicate 3						99.7	0.0	67.5	75.9	99.7	99.4	99.1
	Replicate 4						100.0	0.0	75.6	77.5	100.0	99.7	98.8
	TABLE OF A (spacing) MEANS												
1	12" SPACING						100.0	0.0	72.9	82.8	99.7	99.7	98.3
2	16" SPACING						99.7	0.0	73.9	80.0	99.2	99.8	98.6
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	100.0	0.0	44.3	81.9	100.0	100.0	100.0
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	100.0	0.0	73.8	100.0	98.8	100.0	99.4
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	99.4	0.0	75.6	96.3	99.4	100.0	96.3
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	100.0	0.0	66.9	82.5	100.0	99.4	98.1
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	100.0	0.0	73.1	78.1	100.0	98.8	97.5
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	100.0	0.0	80.0	80.0	98.8	100.0	96.3
7	COMMAND	1	pt/a			B	99.4	0.0	73.8	32.5	98.8	100.0	100.0
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	0.0	100.0	100.0	100.0	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						100.0	0.0	32.3	86.3	100.0	100.0	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						100.0	0.0	56.3	77.5	100.0	100.0	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						100.0	0.0	73.8	100.0	100.0	100.0	98.8
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						100.0	0.0	73.8	100.0	97.5	100.0	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	0.0	77.5	93.8	98.8	100.0	92.5
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						98.8	0.0	73.8	98.8	100.0	100.0	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						100.0	0.0	61.3	86.3	100.0	98.8	96.3
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						100.0	0.0	72.5	78.8	100.0	100.0	100.0
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				100.0	0.0	75.0	76.3	100.0	98.8	98.8
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Pest Type							W Weed		W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code							ELEIN		CYPES	PHYAN	IPOHG	ECHCG	POROL
Pest Scientific Name							Eleusine indica		Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>
Pest Name							Goosegrass		Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane
Crop Code							IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale							BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
Crop Scientific Name							Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name							Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date							Aug-1-2012	Aug-1-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012
Rating Type							CONTROL	INJURY	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit							%	%	%, 28DAB	%, 28DAB	%, 28DAB	%, 28DAB	%, 28DAB
Number of Subsamples							1	1	1	1	1	1	1
Rating Timing							14 DAB	14 DAB	16 DAC	16 DAC	16 DAC	16 DAC	16 DAC
Days After First/Last Applic.							15 2	15 2	29 8	29 8	29 8	29 8	29 8
Trt-Eval Interval									14 DAD	14 DAD	14 DAD	14 DAD	14 DAD
Plant-Eval Interval							15 DP-1	15 DP-1	29 DP-1	29 DP-1	29 DP-1	29 DP-1	29 DP-1
ARM Action Codes													
Number of Decimals													
Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	8	9	10	11	12	13	14
2	16" SPACING						100.0	0.0	71.3	80.0	100.0	98.8	96.3
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						100.0	0.0	85.0	86.3	98.8	100.0	100.0
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						100.0	0.0	75.0	73.8	98.8	100.0	92.5
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	0.0	78.8	33.8	100.0	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						98.8	0.0	68.8	31.3	97.5	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	0.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	0.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	15	16	17	18	19	20	21
	Pest Type						W Weed	W Weed	W Weed		W Weed	W Weed	W Weed
	Pest Code						MOLVE	AMASP	ELEIN		CYPES	PHYAN	IPOHG
	Pest Scientific Name						Mollugo vertic>	Amaranthus spi>	Eleusine indica		Cyperus escule>	Physalis angul>	Ipomoea hedera>
	Pest Name						Carpetweed	Thorny pigweed	Goosegrass		Yellow nutsedge	Cutleaf ground>	Entireleaf mor>
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012
	Rating Type						CONTROL	CONTROL	CONTROL	INJURY	CONTROL	CONTROL	CONTROL
	Rating Unit						%, 28DAB	%, 28DAB	%, 28DAB	%, 28DAB	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						16 DAC	16 DAC	16 DAC	16 DAC	14 DAE	14 DAE	14 DAE
	Days After First/Last Applic.						29 8	29 8	29 8	29 8	36 15	36 15	36 15
	Trt-Eval Interval						14 DAD	14 DAD	14 DAD	14 DAD			
	Plant-Eval Interval						29 DP-1	29 DP-1	29 DP-1	29 DP-1	36 DP-1	36 DP-1	36 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						99.4	100.0	100.0	0.0	91.7	93.0	92.1
	Replicate 2						100.0	97.8	99.4	0.0	89.2	86.5	95.9
	Replicate 3						99.4	100.0	99.4	0.0	91.0	88.8	100.0
	Replicate 4						99.4	99.7	100.0	0.0	94.0	88.7	100.0
	TABLE OF A (spacing) MEANS												
1	12" SPACING						99.7	99.8	100.0	0.0	90.6	86.6	94.4
2	16" SPACING						99.4	98.9	99.4	0.0	92.1	91.1	98.7
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	98.8	100.0	100.0	0.0	98.7	99.4	96.2
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	100.0	100.0	100.0	0.0	.	.	.
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	100.0	100.0	98.8	0.0	.	.	.
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	100.0	100.0	100.0	0.0	.	.	.
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	99.4	99.4	100.0	0.0	79.4	73.8	94.4
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	100.0	95.6	100.0	0.0	.	.	.
7	COMMAND	1	pt/a			B	98.1	100.0	98.8	0.0	.	.	.
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	100.0	100.0	0.0	100.0	99.7	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						97.5	100.0	100.0	0.0	.	.	.
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						100.0	100.0	100.0	0.0	98.7	99.4	96.2
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						100.0	100.0	100.0	0.0	.	.	.
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						100.0	100.0	100.0	0.0	.	.	.
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	100.0	100.0	0.0	.	.	.
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						100.0	100.0	97.5	0.0	.	.	.
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						100.0	100.0	100.0	0.0	.	.	.
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						100.0	100.0	100.0	0.0	.	.	.
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				100.0	98.8	100.0	0.0	81.3	73.8	88.8
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	15	16	17	18	19	20	21
Pest Type							W Weed	W Weed	W Weed		W Weed	W Weed	W Weed
Pest Code							MOLVE	AMASP	ELEIN		CYPES	PHYAN	IPOHG
Pest Scientific Name							Mollugo vertic>	Amaranthus spi>	Eleusine indica		Cyperus escule>	Physalis angul>	Ipomoea hedera>
Pest Name							Carpetweed	Thorny pigweed	Goosegrass		Yellow nutsedge	Cutleaf ground>	Entireleaf mor>
Crop Code							IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale							BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
Crop Scientific Name							Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name							Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date							Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-15-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012
Rating Type							CONTROL	CONTROL	CONTROL	INJURY	CONTROL	CONTROL	CONTROL
Rating Unit							%, 28DAB	%, 28DAB	%, 28DAB	%, 28DAB	%	%	%
Number of Subsamples							1	1	1	1	1	1	1
Rating Timing							16 DAC	16 DAC	16 DAC	16 DAC	14 DAE	14 DAE	14 DAE
Days After First/Last Applic.							29 8	29 8	29 8	29 8	36 15	36 15	36 15
Trt-Eval Interval							14 DAD	14 DAD	14 DAD	14 DAD			
Plant-Eval Interval							29 DP-1	29 DP-1	29 DP-1	29 DP-1	36 DP-1	36 DP-1	36 DP-1
ARM Action Codes													
Number of Decimals													
2	16" SPACING						98.8	100.0	100.0	0.0	77.5	73.8	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						100.0	100.0	100.0	0.0	.	.	.
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						100.0	91.3	100.0	0.0	.	.	.
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						100.0	100.0	100.0	0.0	.	.	.
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						96.3	100.0	97.5	0.0	.	.	.
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	100.0	0.0	100.0	99.4	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	0.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	22	23	24	25	26	27	28
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed		W Weed
	Pest Code						ECHCG	POROL	MOLVE	AMASP	ELEIN		CYPES
	Pest Scientific Name						Echinochloa cr>	Portulaca oler>	Mollugo vertic>	Amaranthus spi>	Eleusine indica		Cyperus escule>
	Pest Name						Common barnyar>	Common purslane	Carpetweed	Thorny pigweed	Goosegrass		Yellow nutsedge
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-28-2012
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	INJURY	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						14 DAE	14 DAE	14 DAE	14 DAE	14 DAE	14 DAE	29 DAC
	Days After First/Last Applic.						36 15	36 15	36 15	36 15	36 15	36 15	42 21
	Trt-Eval Interval												41 DAB
	Plant-Eval Interval						36 DP-1	36 DP-1	36 DP-1	36 DP-1	36 DP-1	36 DP-1	42 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						99.0	99.0	100.0	100.0	100.0	0.0	78.1
	Replicate 2						100.0	100.0	100.0	100.0	100.0	0.0	77.5
	Replicate 3						100.0	95.0	100.0	100.0	100.0	0.0	77.8
	Replicate 4						96.4	97.5	100.0	100.0	100.0	0.0	76.9
	TABLE OF A (spacing) MEANS												
1	12" SPACING						97.7	97.2	100.0	100.0	100.0	0.0	77.7
2	16" SPACING						99.6	98.3	100.0	100.0	100.0	0.0	77.5
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	100.0	100.0	99.9	99.9	99.9	0.0	51.9
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	.	.	.	.	.	.	75.0
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	.	.	.	.	.	.	74.4
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	.	.	.	.	.	.	75.6
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	97.5	95.6	100.0	100.0	100.0	0.0	80.0
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	.	.	.	.	.	.	86.9
7	COMMAND	1	pt/a			B	.	.	.	.	.	.	76.9
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						99.6	99.1	100.0	100.0	100.0	0.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						.	.	.	.	.	.	40.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						100.0	100.0	99.9	99.9	99.9	0.0	63.8
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						.	.	.	.	.	.	72.5
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	77.5
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						.	.	.	.	.	.	78.8
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	70.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						.	.	.	.	.	.	73.8
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						.	.	.	.	.	.	77.5
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B						
4	DUAL MAGNUM	1	pt/a	C						
1	12" SPACING				96.3	96.3	100.0	100.0	100.0	0.0	82.5
5	VALOR	1	oz/a	A						
5	COMMAND	1	pt/a	B						
5	DUAL MAGNUM	1	pt/a	E						

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	22	23	24	25	26	27	28
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed		W Weed
	Pest Code						ECHCG	POROL	MOLVE	AMASP	ELEIN		CYPES
	Pest Scientific Name						Echinochloa cr>	Portulaca oler>	Mollugo vertic>	Amaranthus spi>	Eleusine indica		Cyperus escule>
	Pest Name						Common barnyar>	Common purslane	Carpetweed	Thorny pigweed	Goosegrass		Yellow nutsedge
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-22-2012	Aug-28-2012
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	INJURY	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						14 DAE	14 DAE	14 DAE	14 DAE	14 DAE	14 DAE	29 DAC
	Days After First/Last Applic.						36 15	36 15	36 15	36 15	36 15	36 15	42 21
	Trt-Eval Interval												41 DAB
	Plant-Eval Interval						36 DP-1	36 DP-1	36 DP-1	36 DP-1	36 DP-1	36 DP-1	42 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						98.8	95.0	100.0	100.0	100.0	0.0	77.5
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						.	.	.	.	.	.	91.3
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	82.5
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						.	.	.	.	.	.	82.5
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						.	.	.	.	.	.	71.3
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						99.2	98.2	100.0	100.0	100.0	0.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	0.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	29	30	31	32	33	34	35
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						PHYAN	IPOHG	ECHCG	POROL	MOLVE	AMASP	ELEIN
	Pest Scientific Name						Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>	Mollugo vertic>	Amaranthus spi>	Eleusine indica
	Pest Name						Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane	Carpetweed	Thorny pigweed	Goosegrass
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						29 DAC	29 DAC	29 DAC	29 DAC	29 DAC	29 DAC	29 DAC
	Days After First/Last Applic.						42 21	42 21	42 21	42 21	42 21	42 21	42 21
	Trt-Eval Interval						41 DAB	41 DAB	41 DAB	41 DAB	41 DAB	41 DAB	41 DAB
	Plant-Eval Interval						42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						80.9	99.7	99.4	97.5	100.0	100.0	100.0
	Replicate 2						70.0	100.0	99.4	97.2	100.0	99.1	99.4
	Replicate 3						70.6	100.0	99.7	98.8	100.0	99.4	99.7
	Replicate 4						62.8	100.0	98.4	98.8	100.0	99.7	100.0
	TABLE OF A (spacing) MEANS												
1	12" SPACING						71.1	100.0	99.2	98.4	100.0	100.0	100.0
2	16" SPACING						71.1	99.8	99.2	97.7	100.0	99.1	99.5
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	72.5	100.0	98.8	100.0	100.0	100.0	100.0
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	95.0	100.0	99.4	98.1	100.0	100.0	100.0
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	94.4	100.0	99.4	97.5	100.0	100.0	99.4
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	71.9	100.0	100.0	96.9	100.0	100.0	100.0
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	68.1	100.0	98.1	96.9	100.0	100.0	100.0
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	60.0	99.4	100.0	95.0	100.0	97.5	100.0
7	COMMAND	1	pt/a			B	6.9	100.0	98.1	100.0	100.0	98.8	98.8
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	100.0	100.0	100.0	100.0	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						75.0	100.0	97.5	100.0	100.0	100.0	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						70.0	100.0	100.0	100.0	100.0	100.0	100.0
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						91.3	100.0	98.8	98.8	100.0	100.0	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						98.8	100.0	100.0	97.5	100.0	100.0	100.0
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						95.0	100.0	100.0	95.0	100.0	100.0	100.0
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						93.8	100.0	98.8	100.0	100.0	100.0	98.8
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						72.5	100.0	100.0	93.8	100.0	100.0	100.0
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						71.3	100.0	100.0	100.0	100.0	100.0	100.0
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B						
4	DUAL MAGNUM	1	pt/a	C						
1	12" SPACING				66.3	100.0	97.5	100.0	100.0	100.0	100.0
5	VALOR	1	oz/a	A						
5	COMMAND	1	pt/a	B						
5	DUAL MAGNUM	1	pt/a	E						

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	29	30	31	32	33	34	35
	Pest Type						W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code						PHYAN	IPOHG	ECHCG	POROL	MOLVE	AMASP	ELEIN
	Pest Scientific Name						Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>	Mollugo vertic>	Amaranthus spi>	Eleusine indica
	Pest Name						Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane	Carpetweed	Thorny pigweed	Goosegrass
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012	Aug-28-2012
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						29 DAC	29 DAC	29 DAC	29 DAC	29 DAC	29 DAC	29 DAC
	Days After First/Last Applic.						42 21	42 21	42 21	42 21	42 21	42 21	42 21
	Trt-Eval Interval						41 DAB	41 DAB	41 DAB	41 DAB	41 DAB	41 DAB	41 DAB
	Plant-Eval Interval						42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						70.0	100.0	98.8	93.8	100.0	100.0	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						63.8	100.0	100.0	100.0	100.0	100.0	100.0
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						56.3	98.8	100.0	90.0	100.0	95.0	100.0
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						5.0	100.0	100.0	100.0	100.0	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						8.8	100.0	96.3	100.0	100.0	97.5	97.5
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code							
Pest Type								W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code								CYPES	PHYAN	IPOHG	ECHCG	POROL	MOLVE
Pest Scientific Name								Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>	Mollugo vertic>
Pest Name								Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane	Carpetweed
Crop Code								IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
BBCH Scale								BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
Crop Scientific Name								Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
Crop Name								Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
Rating Date								Aug-28-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012
Rating Type								INJURY	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit								%	%	%	%	%	%
Number of Subsamples								1	1	1	1	1	1
Rating Timing								29 DAC	28 DAE	28 DAE	28 DAE	28 DAE	28 DAE
Days After First/Last Applic.								42 21	49 28	49 28	49 28	49 28	49 28
Trt-Eval Interval								41 DAB					
Plant-Eval Interval								42 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1
ARM Action Codes													
Number of Decimals													
	TABLE OF R MEANS												
	Replicate 1							0.0	97.5	90.0	98.8	98.8	100.0	100.0
	Replicate 2							0.0	93.8	75.0	100.0	97.5	100.0	100.0
	Replicate 3							0.0	93.8	81.3	100.0	98.8	98.8	100.0
	Replicate 4							0.0	93.8	87.5	100.0	95.0	100.0	100.0
	TABLE OF A (spacing) MEANS													
1	12" SPACING							0.0	95.0	85.0	99.4	98.1	100.0	100.0
2	16" SPACING							0.0	94.4	81.9	100.0	96.9	99.4	100.0
	TABLE OF B (herbicides) MEANS													
1	VALOR	2	oz/a			A		0.0	.	.	.	.	.	.
1	COMMAND	2	pt/a			B								
2	VALOR	2	oz/a			A		0.0	.	.	.	.	.	.
2	DUAL MAGNUM	1	pt/a			B								
3	VALOR	1	oz/a			A		0.0	.	.	.	.	.	.
3	DUAL MAGNUM	0.75	pt/a			B								
4	VALOR	1	oz/a			A		0.0	.	.	.	.	.	.
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
5	VALOR	1	oz/a			A		0.0	89.4	66.9	99.4	95.0	99.4	100.0
5	COMMAND	1	pt/a			B								
5	DUAL MAGNUM	1	pt/a			E								
6	DUAL MAGNUM	1	pt/a			B		0.0	.	.	.	.	.	.
7	COMMAND	1	pt/a			B		0.0	.	.	.	.	.	.
7	DUAL MAGNUM	1	pt/a			D								
8	WEED FREE							0.0	100.0	100.0	100.0	100.0	100.0	100.0
	TABLE OF A (spacing) B (herbicides) MEANS													
1	12" SPACING							0.0	.	.	.	.	.	.
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
2	16" SPACING							0.0	.	.	.	.	.	.
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
1	12" SPACING							0.0	.	.	.	.	.	.
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
2	16" SPACING							0.0	.	.	.	.	.	.
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
1	12" SPACING							0.0	.	.	.	.	.	.
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
2	16" SPACING							0.0	.	.	.	.	.	.
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
1	12" SPACING							0.0	.	.	.	.	.	.
4	VALOR	1	oz/a			A								
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
2	16" SPACING							0.0	.	.	.	.	.	.
4	VALOR	1	oz/a			A								

4	COMMAND	1	pt/a	B						
4	DUAL MAGNUM	1	pt/a	C						
1	12" SPACING				0.0	90.0	70.0	98.8	96.3	100.0	100.0
5	VALOR	1	oz/a	A						
5	COMMAND	1	pt/a	B						
5	DUAL MAGNUM	1	pt/a	E						

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	36	37	38	39	40	41	42
	Pest Type							W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
	Pest Code							CYPES	PHYAN	IPOHG	ECHCG	POROL	MOLVE
	Pest Scientific Name							Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>	Portulaca oler>	Mollugo vertic>
	Pest Name							Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>	Common purslane	Carpetweed
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Aug-28-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-4-2012
	Rating Type						INJURY	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						29 DAC	28 DAE	28 DAE	28 DAE	28 DAE	28 DAE	28 DAE
	Days After First/Last Applic.						42 21	49 28	49 28	49 28	49 28	49 28	49 28
	Trt-Eval Interval						41 DAB						
	Plant-Eval Interval						42 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1	49 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						0.0	88.8	63.8	100.0	93.8	98.8	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						0.0	.	.	.	.	.	.
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						0.0	.	.	.	.	.	.
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						0.0	.	.	.	.	.	.
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						0.0	.	.	.	.	.	.
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						0.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												
2	16" SPACING						0.0	100.0	100.0	100.0	100.0	100.0	100.0
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	43	44	45	46	47	48	49
	Pest Type						W Weed	W Weed		W Weed	W Weed	W Weed	W Weed
	Pest Code						AMASP	ELEIN		CYPES	PHYAN	IPOHG	ECHCG
	Pest Scientific Name						Amaranthus spi>	Eleusine indica		Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>
	Pest Name						Thorny pigweed	Goosegrass		Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-12-2012	Sep-12-2012	Sep-12-2012	Sep-12-2012
	Rating Type						CONTROL	CONTROL	INJURY	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						28 DAE	28 DAE	28 DAE	50 DAC	50 DAC	50 DAC	50 DAC
	Days After First/Last Applic.						49 28	49 28	49 28	57 36	57 36	57 36	57 36
	Trt-Eval Interval									48 DAD	48 DAD	48 DAD	48 DAD
	Plant-Eval Interval						49 DP-1	49 DP-1	49 DP-1	57 DP-1	57 DP-1	57 DP-1	57 DP-1
	ARM Action Codes												
	Number of Decimals												
	TABLE OF R MEANS												
	Replicate 1						100.0	100.0	0.0	92.5	55.0	100.0	100.0
	Replicate 2						100.0	100.0	0.0	90.0	32.5	100.0	100.0
	Replicate 3						100.0	100.0	0.0	89.2	30.8	100.0	100.0
	Replicate 4						98.8	100.0	0.0	93.3	31.7	100.0	100.0
	TABLE OF A (spacing) MEANS												
1	12" SPACING						99.4	100.0	0.0	89.2	36.3	100.0	100.0
2	16" SPACING						100.0	100.0	0.0	93.3	38.8	100.0	100.0
	TABLE OF B (herbicides) MEANS												
1	VALOR	2	oz/a			A	.	.	.	.	.	.	.
1	COMMAND	2	pt/a			B							
2	VALOR	2	oz/a			A	.	.	.	.	.	.	.
2	DUAL MAGNUM	1	pt/a			B							
3	VALOR	1	oz/a			A	.	.	.	.	.	.	.
3	DUAL MAGNUM	0.75	pt/a			B							
4	VALOR	1	oz/a			A	.	.	.	90.0	68.8	100.0	100.0
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
5	VALOR	1	oz/a			A	99.4	100.0	0.0	91.9	41.9	100.0	100.0
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
6	DUAL MAGNUM	1	pt/a			B	.	.	.	.	.	.	.
7	COMMAND	1	pt/a			B	.	.	.	91.9	1.9	100.0	100.0
7	DUAL MAGNUM	1	pt/a			D							
8	WEED FREE						100.0	100.0	0.0	.	.	.	.
	TABLE OF A (spacing) B (herbicides) MEANS												
1	12" SPACING						.	.	.	.	.	.	.
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	.
1	VALOR	2	oz/a			A							
1	COMMAND	2	pt/a			B							
1	12" SPACING						.	.	.	.	.	.	.
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	.
2	VALOR	2	oz/a			A							
2	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						.	.	.	.	.	.	.
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	.
3	VALOR	1	oz/a			A							
3	DUAL MAGNUM	0.75	pt/a			B							
1	12" SPACING						.	.	.	87.5	67.5	100.0	100.0
4	VALOR	1	oz/a			A							
4	COMMAND	1	pt/a			B							
4	DUAL MAGNUM	1	pt/a			C							
2	16" SPACING						.	.	.	92.5	70.0	100.0	100.0
4	VALOR	1	oz/a			A							

4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				98.8	100.0	0.0	91.3	40.0	100.0	100.0
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	43	44	45	46	47	48	49
	Pest Type						W Weed	W Weed		W Weed	W Weed	W Weed	W Weed
	Pest Code						AMASP	ELEIN		CYPES	PHYAN	IPOHG	ECHCG
	Pest Scientific Name						Amaranthus spi>	Eleusine indica		Cyperus escule>	Physalis angul>	Ipomoea hedera>	Echinochloa cr>
	Pest Name						Thorny pigweed	Goosegrass		Yellow nutsedge	Cutleaf ground>	Entireleaf mor>	Common barnyar>
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Sep-4-2012	Sep-4-2012	Sep-4-2012	Sep-12-2012	Sep-12-2012	Sep-12-2012	Sep-12-2012
	Rating Type						CONTROL	CONTROL	INJURY	CONTROL	CONTROL	CONTROL	CONTROL
	Rating Unit						%	%	%	%	%	%	%
	Number of Subsamples						1	1	1	1	1	1	1
	Rating Timing						28 DAE	28 DAE	28 DAE	50 DAC	50 DAC	50 DAC	50 DAC
	Days After First/Last Applic.						49 28	49 28	49 28	57 36	57 36	57 36	57 36
	Trt-Eval Interval									48 DAD	48 DAD	48 DAD	48 DAD
	Plant-Eval Interval						49 DP-1	49 DP-1	49 DP-1	57 DP-1	57 DP-1	57 DP-1	57 DP-1
	ARM Action Codes												
	Number of Decimals												
2	16" SPACING						100.0	100.0	0.0	92.5	43.8	100.0	100.0
5	VALOR	1	oz/a			A							
5	COMMAND	1	pt/a			B							
5	DUAL MAGNUM	1	pt/a			E							
1	12" SPACING						.	.	.	.	.	.	.
6	DUAL MAGNUM	1	pt/a			B							
2	16" SPACING						.	.	.	.	.	.	.
6	DUAL MAGNUM	1	pt/a			B							
1	12" SPACING						.	.	.	88.8	1.3	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
2	16" SPACING						.	.	.	95.0	2.5	100.0	100.0
7	COMMAND	1	pt/a			B							
7	DUAL MAGNUM	1	pt/a			D							
1	12" SPACING						100.0	100.0	0.0	.	.	.	.
8	WEED FREE												
2	16" SPACING						100.0	100.0	0.0	.	.	.	.
8	WEED FREE												

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Rate Unit	Appl Code	50	51	52	53	55	57	59	61
	Pest Type						W Weed	W Weed	W Weed	W Weed				
	Pest Code						POROL	MOLVE	AMASP	ELEIN				
	Pest Scientific Name						Portulaca oler>	Mollugo vertic>	Amaranthus spi>	Eleusine indica				
	Pest Name						Common purslane	Carpetweed	Thorny pigweed	Goosegrass				
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Sep-12-2012	Sep-12-2012	Sep-12-2012	Sep-12-2012	Nov-15-2012	Nov-15-2012	Nov-15-2012	Nov-15-2012
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	JUMBO YIELD	ONES YIELD	CANNERYIELD	TOTAL YIELD
	Rating Unit						%	%	%	%	BU/A	BU/A	BU/A	BU/A
	Number of Subsamples						1	1	1	1	1	1	1	1
	Rating Timing						50 DAC	50 DAC	50 DAC	50 DAC				
	Days After First/Last Applic.						57 36	57 36	57 36	57 36	121 100	121 100	121 100	121 100
	Trt-Eval Interval						48 DAD	48 DAD	48 DAD	48 DAD				
	Plant-Eval Interval						57 DP-1	57 DP-1	57 DP-1	57 DP-1	121 DP-1	121 DP-1	121 DP-1	121 DP-1
	ARM Action Codes										TY1	TY2	TY3	TY5
	Number of Decimals										1	1	1	1
	TABLE OF R MEANS													
	Replicate 1						100.0	100.0	100.0	100.0	40.1	226.2	211.5	477.8
	Replicate 2						100.0	100.0	100.0	100.0	6.8	185.8	195.1	387.7
	Replicate 3						100.0	100.0	100.0	100.0	21.5	177.7	180.8	379.9
	Replicate 4						100.0	100.0	100.0	100.0	17.1	183.6	191.7	392.4
	TABLE OF A (spacing) MEANS													
1	12" SPACING						100.0	100.0	100.0	100.0	14.6	206.0	210.5	431.1
2	16" SPACING						100.0	100.0	100.0	100.0	28.2	180.6	179.0	387.8
	TABLE OF B (herbicides) MEANS													
1	VALOR	2	oz/a			A	.	.	.	.	36.7	215.9	211.0	463.6
1	COMMAND	2	pt/a			B								
2	VALOR	2	oz/a			A	.	.	.	.	33.0	274.4	268.6	576.0
2	DUAL MAGNUM	1	pt/a			B								
3	VALOR	1	oz/a			A	.	.	.	.	30.5	242.7	232.1	505.3
3	DUAL MAGNUM	0.75	pt/a			B								
4	VALOR	1	oz/a			A	100.0	100.0	100.0	100.0	26.1	208.5	189.8	424.4
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
5	VALOR	1	oz/a			A	100.0	100.0	100.0	100.0	6.2	196.6	219.0	421.9
5	COMMAND	1	pt/a			B								
5	DUAL MAGNUM	1	pt/a			E								
6	DUAL MAGNUM	1	pt/a			B	.	.	.	.	15.6	130.7	153.7	299.9
7	COMMAND	1	pt/a			B	100.0	100.0	100.0	100.0	0.0	34.2	76.5	110.8
7	DUAL MAGNUM	1	pt/a			D								
8	WEED FREE						.	.	.	.	23.0	243.3	207.2	473.6
	TABLE OF A (spacing) B (herbicides) MEANS													
1	12" SPACING						.	.	.	.	8.7	251.4	232.7	492.9
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
2	16" SPACING						.	.	.	.	64.7	180.5	189.2	434.4
1	VALOR	2	oz/a			A								
1	COMMAND	2	pt/a			B								
1	12" SPACING						.	.	.	.	37.3	295.0	302.4	634.7
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
2	16" SPACING						.	.	.	.	28.6	253.9	234.7	517.2
2	VALOR	2	oz/a			A								
2	DUAL MAGNUM	1	pt/a			B								
1	12" SPACING						.	.	.	.	12.4	272.6	257.6	542.6
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
2	16" SPACING						.	.	.	.	48.5	212.8	206.6	468.0
3	VALOR	1	oz/a			A								
3	DUAL MAGNUM	0.75	pt/a			B								
1	12" SPACING						100.0	100.0	100.0	100.0	17.4	196.6	184.2	398.3
4	VALOR	1	oz/a			A								
4	COMMAND	1	pt/a			B								
4	DUAL MAGNUM	1	pt/a			C								
2	16" SPACING						100.0	100.0	100.0	100.0	34.8	220.3	195.4	450.5
4	VALOR	1	oz/a			A								

4	COMMAND	1	pt/a	B							
4	DUAL MAGNUM	1	pt/a	C							
1	12" SPACING				100.0	100.0	100.0	100.0	12.4	224.0	260.1	496.6
5	VALOR	1	oz/a	A							
5	COMMAND	1	pt/a	B							
5	DUAL MAGNUM	1	pt/a	E							

LSU Ag Center Northeast Research Station

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	50	51	52	53	55	57	59	61
	Pest Type						W Weed	W Weed	W Weed	W Weed				
	Pest Code						POROL	MOLVE	AMASP	ELEIN				
	Pest Scientific Name						Portulaca oler>	Mollugo vertic>	Amaranthus spi>	Eleusine indica				
	Pest Name						Common purslane	Carpetweed	Thorny pigweed	Goosegrass				
	Crop Code						IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA	IPOBA
	BBCH Scale						BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP	BVPP
	Crop Scientific Name						Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas	Ipomoea batatas
	Crop Name						Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato	Sweet potato
	Rating Date						Sep-12-2012	Sep-12-2012	Sep-12-2012	Sep-12-2012	Nov-15-2012	Nov-15-2012	Nov-15-2012	Nov-15-2012
	Rating Type						CONTROL	CONTROL	CONTROL	CONTROL	JUMBO YIELD	ONES YIELD	CANNERYIELD	TOTAL YIELD
	Rating Unit						%	%	%	%	BU/A	BU/A	BU/A	BU/A
	Number of Subsamples						1	1	1	1	1	1	1	1
	Rating Timing						50 DAC	50 DAC	50 DAC	50 DAC				
	Days After First/Last Applic.						57 36	57 36	57 36	57 36	121 100	121 100	121 100	121 100
	Trt-Eval Interval						48 DAD	48 DAD	48 DAD	48 DAD				
	Plant-Eval Interval						57 DP-1	57 DP-1	57 DP-1	57 DP-1	121 DP-1	121 DP-1	121 DP-1	121 DP-1
	ARM Action Codes										TY1	TY2	TY3	TY5
	Number of Decimals										1	1	1	1
2	16" SPACING						100.0	100.0	100.0	100.0	0.0	169.3	178.0	347.2
5	VALOR	1	oz/a			A								
5	COMMAND	1	pt/a			B								
5	DUAL MAGNUM	1	pt/a			E								
1	12" SPACING						.	.	.	.	11.2	143.1	174.2	328.6
6	DUAL MAGNUM	1	pt/a			B								
2	16" SPACING						.	.	.	.	19.9	118.2	133.2	271.3
6	DUAL MAGNUM	1	pt/a			B								
1	12" SPACING						100.0	100.0	100.0	100.0	0.0	26.1	62.2	88.4
7	COMMAND	1	pt/a			B								
7	DUAL MAGNUM	1	pt/a			D								
2	16" SPACING						100.0	100.0	100.0	100.0	0.0	42.3	90.9	133.2
7	COMMAND	1	pt/a			B								
7	DUAL MAGNUM	1	pt/a			D								
1	12" SPACING						.	.	.	.	17.4	239.0	210.3	466.7
8	WEED FREE													
2	16" SPACING						.	.	.	.	28.6	247.7	204.1	480.4
8	WEED FREE													

LSU Ag Center Northeast Research Station

Pre, Post and Delayed Post Applications of Herbicides in Sweet Potato at Different Row Spacing Intervals

Trial ID: Protocol ID:
Location: Study Director:
Project ID: Investigator: Donnie Miller
Sponsor Contact:

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	23377.734375				
R	3	1391.796875	463.932292	2.048	0.1380	11.1
A	1	19.140625	19.140625	0.039	0.8566	17.7
RA	3	1482.421875	494.140625	2.181	0.1204	15.7
B	7	7024.609375	1003.515625	2.907	0.0273	19.3
RB	21	7248.828125	345.182292	1.523	0.1711	31.3
AB	7	1452.734375	207.533482	0.916	0.5137	22.1
RAB	21	4758.203125	226.581101			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	23377.734375				
R	3	1391.796875	463.932292	1.548	0.2153	12.4
A	1	19.140625	19.140625	0.064	0.8017	8.7
B	7	7024.609375	1003.515625	3.348	0.0059	17.5
AB	7	1452.734375	207.533482	0.692	0.6780	24.7
ERROR	45	13489.453125	299.765625			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	25193.750000				
R	3	953.125000	317.708333	3.228	0.0432	7.3
A	1	1.562500	1.562500	0.032	0.8689	5.5
RA	3	145.312500	48.437500	0.492	0.6916	10.3
B	7	19068.750000	2724.107143	21.411	0.0001	11.7
RB	21	2671.875000	127.232143	1.293	0.2809	20.6
AB	7	285.937500	40.848214	0.415	0.8822	14.6
RAB	21	2067.187500	98.437500			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	25193.750000				
R	3	953.125000	317.708333	2.927	0.0438	7.4
A	1	1.562500	1.562500	0.014	0.9050	5.3
B	7	19068.750000	2724.107143	25.097	0.0001	10.5
AB	7	285.937500	40.848214	0.376	0.9113	14.9
ERROR	45	4884.375000	108.541667			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1648.437500				
R	3	267.187500	89.062500	2.574	0.0812	4.3
A	1	39.062500	39.062500	2.778	0.1942	3.0
RA	3	42.187500	14.062500	0.406	0.7499	6.1
B	7	229.687500	32.812500	2.739	0.0347	3.6
RB	21	251.562500	11.979167	0.346	0.9906	12.2
AB	7	92.187500	13.169643	0.381	0.9033	8.7
RAB	21	726.562500	34.598214			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1648.437500				
R	3	267.187500	89.062500	3.928	0.0142	3.4
A	1	39.062500	39.062500	1.723	0.1960	2.4
B	7	229.687500	32.812500	1.447	0.2107	4.8
AB	7	92.187500	13.169643	0.581	0.7677	6.8
ERROR	45	1020.312500	22.673611			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	48.437500				
R	3	1.562500	0.520833	0.636	0.5999	0.7
A	1	1.562500	1.562500	3.000	0.1817	0.6
RA	3	1.562500	0.520833	0.636	0.5999	0.9
B	7	4.687500	0.669643	0.818	0.5828	0.9
RB	21	17.187500	0.818452	1.000	0.5000	1.9
AB	7	4.687500	0.669643	0.818	0.5828	1.3
RAB	21	17.187500	0.818452			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	48.437500				
R	3	1.562500	0.520833	0.652	0.5858	0.6
A	1	1.562500	1.562500	1.957	0.1687	0.5
B	7	4.687500	0.669643	0.839	0.5614	0.9
AB	7	4.687500	0.669643	0.839	0.5614	1.3
ERROR	45	35.937500	0.798611			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	743.359375				
R	3	51.171875	17.057292	1.355	0.2839	2.6
A	1	19.140625	19.140625	2.194	0.2351	2.3
RA	3	26.171875	8.723958	0.693	0.5667	3.7
B	7	65.234375	9.319196	0.817	0.5835	3.5
RB	21	239.453125	11.402530	0.905	0.5889	7.4
AB	7	77.734375	11.104911	0.882	0.5373	5.2
RAB	21	264.453125	12.593006			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	743.359375				
R	3	51.171875	17.057292	1.448	0.2414	2.5
A	1	19.140625	19.140625	1.625	0.2090	1.7
B	7	65.234375	9.319196	0.791	0.5985	3.5
AB	7	77.734375	11.104911	0.943	0.4838	4.9
ERROR	45	530.078125	11.779514			

COMPLETE FACTORIAL AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	885.937500				
R	3	42.187500	14.062500	1.000	0.4123	2.8
A	1	14.062500	14.062500	1.000	0.3910	3.0
RA	3	42.187500	14.062500	1.000	0.4123	3.9
B	7	98.437500	14.062500	1.000	0.4586	3.9
RB	21	295.312500	14.062500	1.000	0.5000	7.8
AB	7	98.437500	14.062500	1.000	0.4586	5.5
RAB	21	295.312500	14.062500			

FACTORIAL/POOLED ERROR AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	885.937500				
R	3	42.187500	14.062500	1.000	0.4016	2.7
A	1	14.062500	14.062500	1.000	0.3227	1.9
B	7	98.437500	14.062500	1.000	0.4439	3.8
AB	7	98.437500	14.062500	1.000	0.4439	5.4
ERROR	45	632.812500	14.062500			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	48.437500				
R	3	1.562500	0.520833	0.636	0.5999	0.7
A	1	1.562500	1.562500	3.000	0.1817	0.6
RA	3	1.562500	0.520833	0.636	0.5999	0.9
B	7	4.687500	0.669643	0.818	0.5828	0.9
RB	21	17.187500	0.818452	1.000	0.5000	1.9
AB	7	4.687500	0.669643	0.818	0.5828	1.3
RAB	21	17.187500	0.818452			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 CONTROL % 1 14 DAB 15 2 15 DP-1 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	48.437500				
R	3	1.562500	0.520833	0.652	0.5858	0.6
A	1	1.562500	1.562500	1.957	0.1687	0.5
B	7	4.687500	0.669643	0.839	0.5614	0.9
AB	7	4.687500	0.669643	0.839	0.5614	1.3
ERROR	45	35.937500	0.798611			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 INJURY % 1 14 DAB 15 2 15 DP-1 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-1-2012 INJURY % 1 14 DAB 15 2 15 DP-1 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	22831.609375				
R	3	1269.421875	423.140625	2.510	0.0865	9.5
A	1	15.015625	15.015625	0.079	0.7967	11.0
RA	3	568.796875	189.598958	1.125	0.3617	13.5
B	7	13189.484375	1884.212054	16.472	0.0001	11.1
RB	21	2402.203125	114.390625	0.679	0.8093	27.0
AB	7	1846.359375	263.765625	1.565	0.2006	19.1
RAB	21	3540.328125	168.587054			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	22831.609375				
R	3	1269.421875	423.140625	2.924	0.0440	8.6
A	1	15.015625	15.015625	0.104	0.7488	6.1
B	7	13189.484375	1884.212054	13.022	0.0001	12.2
AB	7	1846.359375	263.765625	1.823	0.1061	17.2
ERROR	45	6511.328125	144.696181			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	33123.437500				
R	3	1995.312500	665.104167	16.342	0.0001	4.7
A	1	126.562500	126.562500	1.509	0.3068	7.3
RA	3	251.562500	83.854167	2.060	0.1362	6.6
B	7	26542.187500	3791.741071	28.327	0.0001	12.0
RB	21	2810.937500	133.854167	3.289	0.0044	13.3
AB	7	542.187500	77.455357	1.903	0.1200	9.4
RAB	21	854.687500	40.699405			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	33123.437500				
R	3	1995.312500	665.104167	7.641	0.0003	6.7
A	1	126.562500	126.562500	1.454	0.2342	4.7
B	7	26542.187500	3791.741071	43.559	0.0001	9.4
AB	7	542.187500	77.455357	0.890	0.5225	13.3
ERROR	45	3917.187500	87.048611			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	205.859375				
R	3	23.046875	7.682292	1.939	0.1542	1.5
A	1	3.515625	3.515625	9.000	0.0577	0.5
RA	3	1.171875	0.390625	0.099	0.9599	2.1
B	7	21.484375	3.069196	1.320	0.2896	1.6
RB	21	48.828125	2.325149	0.587	0.8849	4.1
AB	7	24.609375	3.515625	0.887	0.5334	2.9
RAB	21	83.203125	3.962054			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	205.859375				
R	3	23.046875	7.682292	2.595	0.0641	1.2
A	1	3.515625	3.515625	1.188	0.2816	0.9
B	7	21.484375	3.069196	1.037	0.4193	1.7
AB	7	24.609375	3.515625	1.188	0.3291	2.5
ERROR	45	133.203125	2.960069			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	71.484375				
R	3	4.296875	1.432292	1.116	0.3650	0.8
A	1	0.390625	0.390625	0.158	0.7177	1.3
RA	3	7.421875	2.473958	1.928	0.1561	1.2
B	7	12.109375	1.729911	2.067	0.0937	1.0
RB	21	17.578125	0.837054	0.652	0.8325	2.4
AB	7	2.734375	0.390625	0.304	0.9440	1.7
RAB	21	26.953125	1.283482			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	71.484375				
R	3	4.296875	1.432292	1.241	0.3062	0.8
A	1	0.390625	0.390625	0.338	0.5637	0.5
B	7	12.109375	1.729911	1.498	0.1923	1.1
AB	7	2.734375	0.390625	0.338	0.9320	1.5
ERROR	45	51.953125	1.154514			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1743.750000				
R	3	34.375000	11.458333	0.398	0.7559	3.9
A	1	1.562500	1.562500	0.061	0.8205	4.0
RA	3	76.562500	25.520833	0.886	0.4643	5.6
B	7	150.000000	21.428571	0.738	0.6424	5.6
RB	21	609.375000	29.017857	1.008	0.4930	11.2
AB	7	267.187500	38.169643	1.326	0.2872	7.9
RAB	21	604.687500	28.794643			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1743.750000				
R	3	34.375000	11.458333	0.400	0.7540	3.8
A	1	1.562500	1.562500	0.054	0.8165	2.7
B	7	150.000000	21.428571	0.747	0.6336	5.4
AB	7	267.187500	38.169643	1.331	0.2583	7.7
ERROR	45	1290.625000	28.680556			

COMPLETE FACTORIAL AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 15)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	235.937500				
R	3	4.687500	1.562500	0.512	0.6783	1.3
A	1	1.562500	1.562500	0.273	0.6376	1.9
RA	3	17.187500	5.729167	1.878	0.1642	1.8
B	7	29.687500	4.241071	1.163	0.3643	2.0
RB	21	76.562500	3.645833	1.195	0.3434	3.6
AB	7	42.187500	6.026786	1.976	0.1075	2.6
RAB	21	64.062500	3.050595			

FACTORIAL/POOLED ERROR AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 15)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	235.937500				
R	3	4.687500	1.562500	0.446	0.7216	1.3
A	1	1.562500	1.562500	0.446	0.5079	0.9
B	7	29.687500	4.241071	1.209	0.3174	1.9
AB	7	42.187500	6.026786	1.719	0.1288	2.7
ERROR	45	157.812500	3.506944			

COMPLETE FACTORIAL AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1225.000000				
R	3	53.125000	17.708333	0.919	0.4488	3.2
A	1	14.062500	14.062500	0.659	0.4765	3.7
RA	3	64.062500	21.354167	1.108	0.3680	4.6
B	7	131.250000	18.750000	0.947	0.4926	4.6
RB	21	415.625000	19.791667	1.027	0.4759	9.1
AB	7	142.187500	20.312500	1.054	0.4255	6.5
RAB	21	404.687500	19.270833			

FACTORIAL/POOLED ERROR AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	1225.000000				
R	3	53.125000	17.708333	0.901	0.4481	3.2
A	1	14.062500	14.062500	0.716	0.4021	2.2
B	7	131.250000	18.750000	0.954	0.4757	4.5
AB	7	142.187500	20.312500	1.034	0.4215	6.3
ERROR	45	884.375000	19.652778			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 17)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	193.750000				
R	3	6.250000	2.083333	0.636	0.5999	1.3
A	1	6.250000	6.250000	3.000	0.1817	1.1
RA	3	6.250000	2.083333	0.636	0.5999	1.9
B	7	18.750000	2.678571	0.818	0.5828	1.9
RB	21	68.750000	3.273810	1.000	0.5000	3.8
AB	7	18.750000	2.678571	0.818	0.5828	2.7
RAB	21	68.750000	3.273810			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 CONTROL %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 17)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	193.750000				
R	3	6.250000	2.083333	0.652	0.5858	1.3
A	1	6.250000	6.250000	1.957	0.1687	0.9
B	7	18.750000	2.678571	0.839	0.5614	1.8
AB	7	18.750000	2.678571	0.839	0.5614	2.6
ERROR	45	143.750000	3.194444			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 INJURY %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 18)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-15-2012 INJURY %, 28DAB 1 16 DAC 29 8 14 DAD 29 DP-1 (Data Column 18)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 19)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	117667.586897				
R	3	18.313913	6.104638	0.300	0.8249	3.3
A	1	2252.259609	2252.259609	108.424	0.0019	3.6
RA	3	62.318315	20.772772	1.021	0.4031	4.7
B	7	97565.722953	13937.960422	3046.233	0.0001	2.2
RB	21	96.084964	4.575474	0.225	0.9994	9.4
AB	7	17245.806581	2463.686654	121.142	0.0001	6.6
RAB	21	427.080562	20.337170			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 19)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	117667.586897				
R	3	18.313913	6.104638	0.469	0.7052	2.6
A	1	2252.259609	2252.259609	173.108	0.0001	1.8
B	7	97565.722953	13937.960422	1071.265	0.0001	3.6
AB	7	17245.806581	2463.686654	189.358	0.0001	5.2
ERROR	45	585.483841	13.010752			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 20)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	113279.374166				
R	3	34.121964	11.373988	1.077	0.3803	2.4
A	1	2501.006418	2501.006418	243.257	0.0006	2.6
RA	3	30.843944	10.281315	0.973	0.4239	3.4
B	7	93011.769314	13287.395616	1354.488	0.0001	3.3
RB	21	206.007991	9.809904	0.929	0.5663	6.8
AB	7	17273.838522	2467.691217	233.655	0.0001	4.8
RAB	21	221.786012	10.561239			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 20)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	113279.374166				
R	3	34.121964	11.373988	1.116	0.3526	2.3
A	1	2501.006418	2501.006418	245.390	0.0001	1.6
B	7	93011.769314	13287.395616	1303.714	0.0001	3.2
AB	7	17273.838522	2467.691217	242.122	0.0001	4.6
ERROR	45	458.637946	10.191954			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 21)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	130420.563258				
R	3	67.542578	22.514193	1.460	0.2539	2.9
A	1	2887.134626	2887.134626	484.926	0.0002	1.9
RA	3	17.861300	5.953767	0.386	0.7641	4.1
B	7	110969.890291	15852.841470	1214.676	0.0001	3.8
RB	21	274.072935	13.051092	0.847	0.6469	8.2
AB	7	15880.307316	2268.615331	147.152	0.0001	5.8
RAB	21	323.754213	15.416867			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 21)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	130420.563258				
R	3	67.542578	22.514193	1.646	0.1922	2.6
A	1	2887.134626	2887.134626	211.018	0.0001	1.9
B	7	110969.890291	15852.841470	1158.667	0.0001	3.7
AB	7	15880.307316	2268.615331	165.811	0.0001	5.3
ERROR	45	615.688448	13.681966			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 22)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	134556.720686				
R	3	13.915163	4.638388	1.006	0.4097	1.6
A	1	2668.223135	2668.223135	408.094	0.0003	2.0
RA	3	19.614779	6.538260	1.418	0.2655	2.2
B	7	114347.542262	16335.363180	5276.082	0.0001	1.8
RB	21	65.018447	3.096117	0.672	0.8156	4.5
AB	7	17345.588068	2477.941153	537.465	0.0001	3.2
RAB	21	96.818832	4.610421			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 22)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	134556.720686				
R	3	13.915163	4.638388	1.150	0.3392	1.4
A	1	2668.223135	2668.223135	661.718	0.0001	1.0
B	7	114347.542262	16335.363180	4051.161	0.0001	2.0
AB	7	17345.588068	2477.941153	614.528	0.0001	2.9
ERROR	45	181.452058	4.032268			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 23)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	132202.909403				
R	3	21.811767	7.270589	0.632	0.6025	2.5
A	1	2529.503574	2529.503574	294.223	0.0004	2.3
RA	3	25.791660	8.597220	0.747	0.5360	3.5
B	7	111808.268230	15972.609747	3509.840	0.0001	2.2
RB	21	95.566989	4.550809	0.396	0.9805	7.1
AB	7	17480.380086	2497.197155	217.069	0.0001	5.0
RAB	21	241.587096	11.504147			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 23)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	132202.909403				
R	3	21.811767	7.270589	0.901	0.4479	2.0
A	1	2529.503574	2529.503574	313.622	0.0001	1.4
B	7	111808.268230	15972.609747	1980.372	0.0001	2.9
AB	7	17480.380086	2497.197155	309.616	0.0001	4.1
ERROR	45	362.945745	8.065461			

COMPLETE FACTORIAL AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 24)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	137454.762252				
R	3	0.001891	0.000630	1.000	0.4123	0.0
A	1	2495.884874	2495.884874	3959543.146	0.0001	0.0
RA	3	0.001891	0.000630	1.000	0.4123	0.0
B	7	117487.653007	16783.950430	26626538.663	0.0001	0.0
RB	21	0.013237	0.000630	1.000	0.5000	0.1
AB	7	17471.194115	2495.884874	3959543.146	0.0001	0.0
RAB	21	0.013237	0.000630			

FACTORIAL/POOLED ERROR AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 24)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	137454.762252				
R	3	0.001891	0.000630	1.000	0.4016	0.0
A	1	2495.884874	2495.884874	3959543.146	0.0001	0.0
B	7	117487.653007	16783.950430	26626538.663	0.0001	0.0
AB	7	17471.194115	2495.884874	3959543.146	0.0001	0.0
ERROR	45	0.028366	0.000630			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 25)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	137454.762252				
R	3	0.001891	0.000630	1.000	0.4123	0.0
A	1	2495.884874	2495.884874	3959543.146	0.0001	0.0
RA	3	0.001891	0.000630	1.000	0.4123	0.0
B	7	117487.653007	16783.950430	26626538.663	0.0001	0.0
RB	21	0.013237	0.000630	1.000	0.5000	0.1
AB	7	17471.194115	2495.884874	3959543.146	0.0001	0.0
RAB	21	0.013237	0.000630			

FACTORIAL/POOLED ERROR AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 25)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	137454.762252				
R	3	0.001891	0.000630	1.000	0.4016	0.0
A	1	2495.884874	2495.884874	3959543.146	0.0001	0.0
B	7	117487.653007	16783.950430	26626538.663	0.0001	0.0
AB	7	17471.194115	2495.884874	3959543.146	0.0001	0.0
ERROR	45	0.028366	0.000630			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 26)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	137454.762252				
R	3	0.001891	0.000630	1.000	0.4123	0.0
A	1	2495.884874	2495.884874	3959543.146	0.0001	0.0
RA	3	0.001891	0.000630	1.000	0.4123	0.0
B	7	117487.653007	16783.950430	26626538.663	0.0001	0.0
RB	21	0.013237	0.000630	1.000	0.5000	0.1
AB	7	17471.194115	2495.884874	3959543.146	0.0001	0.0
RAB	21	0.013237	0.000630			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 CONTROL % 1 14 DAE 36 15 36 DP-1 (Data Column 26)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	137454.762252				
R	3	0.001891	0.000630	1.000	0.4016	0.0
A	1	2495.884874	2495.884874	3959543.146	0.0001	0.0
B	7	117487.653007	16783.950430	26626538.663	0.0001	0.0
AB	7	17471.194115	2495.884874	3959543.146	0.0001	0.0
ERROR	45	0.028366	0.000630			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 INJURY % 1 14 DAE 36 15 36 DP-1 (Data Column 27)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-22-2012 INJURY % 1 14 DAE 36 15 36 DP-1 (Data Column 27)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 28)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	18049.609375				
R	3	13.671875	4.557292	0.024	0.9949	10.2
A	1	0.390625	0.390625	0.002	0.9665	10.9
RA	3	563.671875	187.890625	0.978	0.4218	14.4
B	7	10215.234375	1459.319196	21.762	0.0001	8.5
RB	21	1408.203125	67.057292	0.349	0.9901	28.8
AB	7	1815.234375	259.319196	1.350	0.2769	20.4
RAB	21	4033.203125	192.057292			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 28)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	18049.609375				
R	3	13.671875	4.557292	0.034	0.9914	8.3
A	1	0.390625	0.390625	0.003	0.9571	5.8
B	7	10215.234375	1459.319196	10.936	0.0001	11.7
AB	7	1815.234375	259.319196	1.943	0.0847	16.5
ERROR	45	6005.078125	133.446181			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 29)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	61873.437500				
R	3	2670.312500	890.104167	10.331	0.0002	6.8
A	1	0.000000	0.000000	0.000	1.0000	14.5
RA	3	1003.125000	334.375000	3.881	0.0236	9.7
B	7	49660.937500	7094.419643	23.307	0.0001	18.1
RB	21	6392.187500	304.389881	3.533	0.0028	19.3
AB	7	337.500000	48.214286	0.560	0.7798	13.7
RAB	21	1809.375000	86.160714			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 29)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	61873.437500				
R	3	2670.312500	890.104167	4.352	0.0089	10.2
A	1	0.000000	0.000000	0.000	1.0000	7.2
B	7	49660.937500	7094.419643	34.683	0.0001	14.5
AB	7	337.500000	48.214286	0.236	0.9742	20.4
ERROR	45	9204.687500	204.548611			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 30)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	24.609375				
R	3	1.171875	0.390625	1.000	0.4123	0.5
A	1	0.390625	0.390625	1.000	0.3910	0.5
RA	3	1.171875	0.390625	1.000	0.4123	0.7
B	7	2.734375	0.390625	1.000	0.4586	0.7
RB	21	8.203125	0.390625	1.000	0.5000	1.3
AB	7	2.734375	0.390625	1.000	0.4586	0.9
RAB	21	8.203125	0.390625			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 30)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	24.609375				
R	3	1.171875	0.390625	1.000	0.4016	0.4
A	1	0.390625	0.390625	1.000	0.3227	0.3
B	7	2.734375	0.390625	1.000	0.4439	0.6
AB	7	2.734375	0.390625	1.000	0.4439	0.9
ERROR	45	17.578125	0.390625			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 31)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	360.937500				
R	3	14.062500	4.687500	1.260	0.3136	1.4
A	1	0.000000	0.000000	0.000	1.0000	2.1
RA	3	21.875000	7.291667	1.960	0.1509	2.0
B	7	35.937500	5.133929	0.670	0.6951	2.9
RB	21	160.937500	7.663690	2.060	0.0527	4.0
AB	7	50.000000	7.142857	1.920	0.1169	2.8
RAB	21	78.125000	3.720238			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 31)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	360.937500				
R	3	14.062500	4.687500	0.808	0.4959	1.7
A	1	0.000000	0.000000	0.000	1.0000	1.2
B	7	35.937500	5.133929	0.885	0.5258	2.4
AB	7	50.000000	7.142857	1.232	0.3057	3.4
ERROR	45	260.937500	5.798611			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 32)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	2580.859375				
R	3	32.421875	10.807292	0.265	0.8495	4.7
A	1	9.765625	9.765625	0.198	0.6866	5.6
RA	3	148.046875	49.348958	1.212	0.3299	6.6
B	7	190.234375	27.176339	0.603	0.7464	7.0
RB	21	945.703125	45.033482	1.106	0.4098	13.3
AB	7	399.609375	57.087054	1.402	0.2563	9.4
RAB	21	855.078125	40.718006			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 32)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	2580.859375				
R	3	32.421875	10.807292	0.250	0.8612	4.7
A	1	9.765625	9.765625	0.225	0.6372	3.3
B	7	190.234375	27.176339	0.628	0.7305	6.6
AB	7	399.609375	57.087054	1.318	0.2640	9.4
ERROR	45	1948.828125	43.307292			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 33)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 33)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 34)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	335.937500				
R	3	7.812500	2.604167	0.522	0.6716	1.6
A	1	14.062500	14.062500	5.400	0.1027	1.3
RA	3	7.812500	2.604167	0.522	0.6716	2.3
B	7	48.437500	6.919643	1.388	0.2617	2.3
RB	21	104.687500	4.985119	1.000	0.5000	4.6
AB	7	48.437500	6.919643	1.388	0.2617	3.3
RAB	21	104.687500	4.985119			

FACTORIAL/POOLED ERROR AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 34)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	335.937500				
R	3	7.812500	2.604167	0.540	0.6576	1.6
A	1	14.062500	14.062500	2.914	0.0947	1.1
B	7	48.437500	6.919643	1.434	0.2158	2.2
AB	7	48.437500	6.919643	1.434	0.2158	3.1
ERROR	45	217.187500	4.826389			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 35)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	121.484375				
R	3	4.296875	1.432292	0.706	0.5589	1.0
A	1	3.515625	3.515625	2.455	0.2152	1.0
RA	3	4.296875	1.432292	0.706	0.5589	1.5
B	7	12.109375	1.729911	0.853	0.5575	1.5
RB	21	42.578125	2.027530	1.000	0.5000	3.0
AB	7	12.109375	1.729911	0.853	0.5575	2.1
RAB	21	42.578125	2.027530			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 CONTROL % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 35)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	121.484375				
R	3	4.296875	1.432292	0.721	0.5450	1.0
A	1	3.515625	3.515625	1.769	0.1903	0.7
B	7	12.109375	1.729911	0.870	0.5372	1.4
AB	7	12.109375	1.729911	0.870	0.5372	2.0
ERROR	45	89.453125	1.987847			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 INJURY % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 36)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Aug-28-2012 INJURY % 1 29 DAC 42 21 41 DAB 42 DP-1 (Data Column 36)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 37)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	108412.109375				
R	3	10.546875	3.515625	0.297	0.8273	2.5
A	1	0.390625	0.390625	0.033	0.8675	2.7
RA	3	35.546875	11.848958	1.000	0.4123	3.6
B	7	108040.234375	15434.319196	4390.207	0.0001	2.0
RB	21	73.828125	3.515625	0.297	0.9962	7.2
AB	7	2.734375	0.390625	0.033	0.9999	5.1
RAB	21	248.828125	11.848958			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 37)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	108412.109375				
R	3	10.546875	3.515625	0.442	0.7243	2.0
A	1	0.390625	0.390625	0.049	0.8257	1.4
B	7	108040.234375	15434.319196	1938.968	0.0001	2.9
AB	7	2.734375	0.390625	0.049	0.9998	4.0
ERROR	45	358.203125	7.960069			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 38)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	89777.734375				
R	3	135.546875	45.182292	1.584	0.2229	3.9
A	1	9.765625	9.765625	0.342	0.5995	4.2
RA	3	85.546875	28.515625	1.000	0.4123	5.6
B	7	87930.859375	12561.551339	278.019	0.0001	7.0
RB	21	948.828125	45.182292	1.584	0.1497	11.1
AB	7	68.359375	9.765625	0.342	0.9249	7.9
RAB	21	598.828125	28.515625			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 38)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	89777.734375				
R	3	135.546875	45.182292	1.245	0.3047	4.3
A	1	9.765625	9.765625	0.269	0.6065	3.0
B	7	87930.859375	12561.551339	346.111	0.0001	6.1
AB	7	68.359375	9.765625	0.269	0.9628	8.6
ERROR	45	1633.203125	36.293403			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 39)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	119274.609375				
R	3	1.171875	0.390625	1.000	0.4123	0.5
A	1	0.390625	0.390625	1.000	0.3910	0.5
RA	3	1.171875	0.390625	1.000	0.4123	0.7
B	7	119252.734375	17036.104911	43612.434	0.0001	0.7
RB	21	8.203125	0.390625	1.000	0.5000	1.3
AB	7	2.734375	0.390625	1.000	0.4586	0.9
RAB	21	8.203125	0.390625			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 39)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	119274.609375				
R	3	1.171875	0.390625	1.000	0.4016	0.4
A	1	0.390625	0.390625	1.000	0.3227	0.3
B	7	119252.734375	17036.104911	43612.434	0.0001	0.6
AB	7	2.734375	0.390625	1.000	0.4439	0.9
ERROR	45	17.578125	0.390625			

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 40)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	114525.000000				
R	3	9.375000	3.125000	0.286	0.8352	2.4
A	1	1.562500	1.562500	0.143	0.7306	2.6
RA	3	32.812500	10.937500	1.000	0.4123	3.4
B	7	114175.000000	16310.714286	5219.429	0.0001	1.8
RB	21	65.625000	3.125000	0.286	0.9970	6.9
AB	7	10.937500	1.562500	0.143	0.9933	4.9
RAB	21	229.687500	10.937500			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 40)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	114525.000000				
R	3	9.375000	3.125000	0.429	0.7335	1.9
A	1	1.562500	1.562500	0.214	0.6457	1.4
B	7	114175.000000	16310.714286	2236.898	0.0001	2.7
AB	7	10.937500	1.562500	0.214	0.9803	3.9
ERROR	45	328.125000	7.291667			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 41)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	119274.609375				
R	3	1.171875	0.390625	1.000	0.4123	0.5
A	1	0.390625	0.390625	1.000	0.3910	0.5
RA	3	1.171875	0.390625	1.000	0.4123	0.7
B	7	119252.734375	17036.104911	43612.434	0.0001	0.7
RB	21	8.203125	0.390625	1.000	0.5000	1.3
AB	7	2.734375	0.390625	1.000	0.4586	0.9
RAB	21	8.203125	0.390625			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 41)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	119274.609375				
R	3	1.171875	0.390625	1.000	0.4016	0.4
A	1	0.390625	0.390625	1.000	0.3227	0.3
B	7	119252.734375	17036.104911	43612.434	0.0001	0.6
AB	7	2.734375	0.390625	1.000	0.4439	0.9
ERROR	45	17.578125	0.390625			

COMPLETE FACTORIAL AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 42)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	120000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	120000.000000	17142.857143	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 42)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	120000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	120000.000000	17142.857143	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 43)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	119274.609375				
R	3	1.171875	0.390625	1.000	0.4123	0.5
A	1	0.390625	0.390625	1.000	0.3910	0.5
RA	3	1.171875	0.390625	1.000	0.4123	0.7
B	7	119252.734375	17036.104911	43612.434	0.0001	0.7
RB	21	8.203125	0.390625	1.000	0.5000	1.3
AB	7	2.734375	0.390625	1.000	0.4586	0.9
RAB	21	8.203125	0.390625			

FACTORIAL/POOLED ERROR AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 43)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	119274.609375				
R	3	1.171875	0.390625	1.000	0.4016	0.4
A	1	0.390625	0.390625	1.000	0.3227	0.3
B	7	119252.734375	17036.104911	43612.434	0.0001	0.6
AB	7	2.734375	0.390625	1.000	0.4439	0.9
ERROR	45	17.578125	0.390625			

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 44)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	120000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	120000.000000	17142.857143	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 CONTROL % 1 28 DAE 49 28 49 DP-1 (Data Column 44)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	120000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	120000.000000	17142.857143	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 INJURY % 1 28 DAE 49 28 49 DP-1 (Data Column 45)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Sep-4-2012 INJURY % 1 28 DAE 49 28 49 DP-1 (Data Column 45)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	0.000000	0.000000	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 46)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	125810.937500				
R	3	26.562500	8.854167	0.598	0.6234	2.8
A	1	39.062500	39.062500	1.087	0.3738	4.8
RA	3	107.812500	35.937500	2.427	0.0940	4.0
B	7	124917.187500	17845.312500	1181.483	0.0001	4.0
RB	21	317.187500	15.104167	1.020	0.4820	8.0
AB	7	92.187500	13.169643	0.889	0.5319	5.7
RAB	21	310.937500	14.806548			

FACTORIAL/POOLED ERROR AOV For W Weed CYPES Cyperus esculentus Yellow nutsedge IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 46)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	125810.937500				
R	3	26.562500	8.854167	0.541	0.6564	2.9
A	1	39.062500	39.062500	2.389	0.1292	2.0
B	7	124917.187500	17845.312500	1091.178	0.0001	4.1
AB	7	92.187500	13.169643	0.805	0.5874	5.8
ERROR	45	735.937500	16.354167			

COMPLETE FACTORIAL AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 47)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	49993.750000				
R	3	921.875000	307.291667	2.166	0.1223	8.8
A	1	14.062500	14.062500	0.058	0.8251	12.4
RA	3	726.562500	242.187500	1.707	0.1962	12.4
B	7	39212.500000	5601.785714	19.255	0.0001	17.7
RB	21	6109.375000	290.922619	2.050	0.0538	24.8
AB	7	29.687500	4.241071	0.030	1.0000	17.5
RAB	21	2979.687500	141.889881			

FACTORIAL/POOLED ERROR AOV For W Weed PHYAN Physalis angulata Cutleaf groundcherry IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 47)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	49993.750000				
R	3	921.875000	307.291667	1.409	0.2526	10.6
A	1	14.062500	14.062500	0.064	0.8007	7.5
B	7	39212.500000	5601.785714	25.682	0.0001	14.9
AB	7	29.687500	4.241071	0.019	1.0000	21.1
ERROR	45	9815.625000	218.125000			

COMPLETE FACTORIAL AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 48)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed IPOHG Ipomoea hederacea integriuscul Entireleaf morningglory IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 48)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 49)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed ECHCG Echinochloa crus-galli Common barnyardgrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 49)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 50)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed POROL Portulaca oleracea Common purslane IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 50)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 51)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed MOLVE Mollugo verticillata Carpetweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 51)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 52)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed AMASP Amaranthus spinosus Thorny pigweed IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 52)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

LSU Ag Center Northeast Research Station

COMPLETE FACTORIAL AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 53)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
RA	3	0.000000	0.000000	0.000	0.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
RB	21	0.000000	0.000000	0.000	0.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
RAB	21	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For W Weed ELEIN Eleusine indica Goosegrass IPOBA BVPP Ipomoea batatas Sweet potato Sep-12-2012 CONTROL % 1 50 DAC 57 36 48 DAD 57 DP-1 (Data Column 53)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	150000.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	7	150000.000000	21428.571429	0.000	1.0000	0.0
AB	7	0.000000	0.000000	0.000	0.0000	0.0
ERROR	45	0.000000	0.000000			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 JUMBO YIELD BU/A 1 121 100 121 DP-1 TY1 1 (Data Column 55)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	57084.924283				
R	3	9301.107478	3100.369159	6.715	0.0024	15.8
A	1	2931.016445	2931.016445	4.292	0.1300	20.8
RA	3	2048.884584	682.961528	1.479	0.2489	22.3
B	7	9590.763312	1370.109045	1.787	0.1431	28.8
RB	21	16098.709757	766.605227	1.660	0.1267	44.7
AB	7	7419.124411	1059.874916	2.296	0.0664	31.6
RAB	21	9695.318295	461.681824			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 JUMBO YIELD BU/A 1 121 100 121 DP-1 TY1 1 (Data Column 55)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	57084.924283				
R	3	9301.107478	3100.369159	5.011	0.0044	17.8
A	1	2931.016445	2931.016445	4.737	0.0348	12.6
B	7	9590.763312	1370.109045	2.214	0.0507	25.1
AB	7	7419.124411	1059.874916	1.713	0.1301	35.5
ERROR	45	27842.912636	618.731392			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 ONES YIELD BU/A 1 121 100 121 DP-1 TY2 1 (Data Column 57)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	773713.550086				
R	3	23656.854672	7885.618224	2.507	0.0868	41.2
A	1	10288.568091	10288.568091	0.216	0.6735	173.5
RA	3	142666.416891	47555.472297	15.119	0.0001	58.3
B	7	332015.728259	47430.818323	5.542	0.0010	96.2
RB	21	179712.074437	8557.717830	2.721	0.0131	116.7
AB	7	19318.209625	2759.744232	0.877	0.5404	82.5
RAB	21	66055.698113	3145.509434			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 ONES YIELD BU/A 1 121 100 121 DP-1 TY2 1 (Data Column 57)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	773713.550086				
R	3	23656.854672	7885.618224	0.914	0.4420	66.4
A	1	10288.568091	10288.568091	1.192	0.2808	46.9
B	7	332015.728259	47430.818323	5.495	0.0001	93.9
AB	7	19318.209625	2759.744232	0.320	0.9412	132.8
ERROR	45	388434.189440	8631.870876			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 CANNERYIELD BU/A 1 121 100 121 DP-1 TY3 1 (Data Column 59)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	407102.384141				
R	3	7743.114916	2581.038305	1.152	0.3514	34.8
A	1	15863.561245	15863.561245	1.514	0.3063	81.4
RA	3	31439.997135	10479.999045	4.677	0.0118	49.2
B	7	188300.496461	26900.070923	5.911	0.0007	70.2
RB	21	95561.520505	4550.548595	2.031	0.0561	98.5
AB	7	21142.156844	3020.308121	1.348	0.2778	69.6
RAB	21	47051.537035	2240.549383			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 CANNERYIELD BU/A 1 121 100 121 DP-1 TY3 1 (Data Column 59)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	407102.384141				
R	3	7743.114916	2581.038305	0.667	0.5765	44.4
A	1	15863.561245	15863.561245	4.101	0.0488	31.4
B	7	188300.496461	26900.070923	6.955	0.0001	62.8
AB	7	21142.156844	3020.308121	0.781	0.6067	88.9
ERROR	45	174053.054676	3867.845659			

COMPLETE FACTORIAL AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 TOTAL YIELD BU/A 1 121 100 121 DP-1 TY5 1 (Data Column 61)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	2200421.636566				
R	3	100952.035319	33650.678440	5.327	0.0069	58.4
A	1	30013.616853	30013.616853	0.339	0.6012	236.7
RA	3	265534.664637	88511.554879	14.013	0.0001	82.7
B	7	1164369.555947	166338.507992	8.118	0.0001	148.9
RB	21	430296.328069	20490.301337	3.244	0.0047	165.3
AB	7	76608.474507	10944.067787	1.733	0.1554	116.9
RAB	21	132646.961234	6316.521964			

FACTORIAL/POOLED ERROR AOV For IPOBA BVPP Ipomoea batatas Sweet potato Nov-15-2012 TOTAL YIELD BU/A 1 121 100 121 DP-1 TY5 1 (Data Column 61)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	63	2200421.636566				
R	3	100952.035319	33650.678440	1.828	0.1557	97.0
A	1	30013.616853	30013.616853	1.630	0.2082	68.6
B	7	1164369.555947	166338.507992	9.035	0.0001	137.1
AB	7	76608.474507	10944.067787	0.594	0.7570	193.9
ERROR	45	828477.953940	18410.621199			

LSU Ag Center Northeast Research Station

Pre, Post and Delayed Post Applications of Herbicides in Sweet Potato at Different Row Spacing Intervals

Trial ID: Protocol ID:
Location: Study Director:
Project ID: Investigator: Donnie Miller
Sponsor Contact:

Pest Type
W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop
Pest Code
CYPES, Cyperus esculentus, = US
PHYAN, Physalis angulata, = US
IPOHG, Ipomoea hederacea integriuscul, = US
ECHCG, Echinochloa crus-galli, = US
POROL, Portulaca oleracea, = US
MOLVE, Mollugo verticillata, = US
AMASP, Amaranthus spinosus, = US
ELEIN, Eleusine indica, = US
Crop Code
IPOBA, BVPP, Ipomoea batatas, = US
Rating Unit
% = percent
Plant-Eval Interval
15 DP-1 = 1 IPOBA Jul-17-2012
29 DP-1 = 1 IPOBA Jul-17-2012
36 DP-1 = 1 IPOBA Jul-17-2012
42 DP-1 = 1 IPOBA Jul-17-2012
49 DP-1 = 1 IPOBA Jul-17-2012
57 DP-1 = 1 IPOBA Jul-17-2012
121 DP-1 = 1 IPOBA Jul-17-2012
ARM Action Codes
TY1 = 9.956572*[C54]
TY2 = 9.956572*[56]
TY3 = 9.956572*[58]
TY5 = 9.956572*[60]