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Department of
Agriculture

Marketing and
Regulatory
Programs

Agricultural
Marketing
Service

Livestock and
Seed Program

Items of Interest in Seed Control

Summer 2002

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FEDERAL SEED SCHOOL

From May 20 to 22, 2002, members of the Seed Regulatory and Testing Branch (SRTB) conducted a Federal Seed School at the Georgia State Seed Laboratory, Tifton, GA. Botanists David Bitzel and Patsy Jackson provided instruction on purity and identification of species of interest in the Southeast. Participants in the hands-on training included 15 seed analysts from State laboratories (Florida, Georgia, and South Carolina) and 3 analysts from private seed laboratories in 3 States (Georgia, Illinois, and Tennessee).

We would like to thank Dr. Wayne Guerke, Seed Division Director of the Georgia Department of Agriculture, and staff members of the Tifton laboratory for hosting the seed school.

If you are interested in hosting a future seed school, you may contact SRTB Chief Richard Payne for more information (richard.payne2@usda.gov). Information will be posted on our Web site as plans develop for future Federal Seed Schools.

ANNUAL MEETING OF THE ASSOCIATION OF OFFICIAL SEED ANALYSTS

The joint annual meeting of the Association of Official Seed Analysts (AOSA) and Society of Commercial Seed Technologists (SCST) was held in Sioux Falls, SD, June 15-18, 2002. Prior to the joint opening session, an Adventitious Presence (AP) Symposium and Workshop was held on June 13; Botanist Susan Maxon represented the Seed Regulatory and Testing Branch (SRTB). The symposium addressed the AP concerns of policy, sampling, and methodology. An International Seed Testing Association (ISTA) Seed Vigor Workshop was held on June 14. Botanists David Bitzel and Patsy Jackson represented the SRTB at the Vigor Workshop and the remainder of the annual meeting. The workshop focused on two ISTA validated tests that are now part of the ISTA Rules: accelerated aging for soybean and electrical conductivity for pea.

Formal proceedings of the annual meeting began with the opening session on June 15, and continued through the business meeting on June 18. SRTB Seed Marketing Specialist Harold Laswell gave a presentation regarding labeling issues. At the AOSA/SCST banquet he received an honorary membership in the SCST in recognition for his work in service to the seed industry. Eighteen AOSA rule change proposals were considered of which 15 passed. Of particular interest is the rule proposal that clarifies the pure seed unit definitions currently in the rules. Seed unit descriptions that are currently located in different sections will be combined into one section of the rules. The rules that passed will take effect on October 1. They will be published in the September issue of the "Seed Technologist Newsletter." Until such time as the Federal Seed Act regulations may be amended, we will take into consideration these changes in the AOSA rules.

EXTRAORDINARY MEETING OF THE INTERNATIONAL SEED TESTING ASSOCIATION

The first extraordinary meeting of the International Seed Testing Association (ISTA) was held July 2-6, 2002, in Santa Cruz, Bolivia. Botanist Susan Maxon of the Seed Regulatory and Testing Branch served as the voting delegate for the United States. Other participants from the United States were: Richard Lawson (Idaho Department of Agriculture), Society of Commercial Seed Technologists President Pat Brownfield (Syngenta Seeds, Inc., Twin

Falls, ID), and Doris Dixon (Monsanto, St. Louis, MO). Over 70 participants from 30 countries attended. With a total of 65 voting countries in ISTA, the required quorum of 26 was just reached for the business session.

Technical committee meetings were held July 3-4. These included the Accreditation Program, the Method Validation Program, and the GMO Task Force, in addition to 15 technical committees. The business session of the extraordinary meeting was held July 5-6.

In considering proposals for changes in the International Rules for Seed Testing, the membership approved the reduction of submitted sample size to the purity working weight, provided that no determination of other seeds (e.g. noxious weed seed examination) is requested. A proposed change in the uniform blowing method for Kentucky bluegrass varieties was withdrawn. Other Rule proposals involved sampling, seed health testing, addition of new species, and moisture testing; details are on ISTA's Web site (<http://www.seedtest.org/pdf/rules2002.pdf>).

The ISTA GMO Task Force will focus its activity on the uniformity of seed testing results and not primarily on uniformity of methods. The structure of the GMO Task Force for future work will include a platform for information exchange, including a database of methods. Duplication of effort will be avoided by inviting other seed testing organizations to participate. In addition to the Steering Committee, working groups will be established for a Rules chapter and proficiency tests.

The ISTA Executive Committee opened discussion on strategic directions and voting rights. Their vision includes ISTA being "legally independent from both governments and commerce." The ensuing discussion raised the issue of Designated Authorities having the decision-making responsibility for whether ISTA-accredited private and seed company laboratories are authorized to issue ISTA certificates. The U.S. delegate pointed out that these issues are complex and must be thoroughly discussed with all interested parties in the United States.

To gain a sense of the thinking of all the participants, the Executive Committee asked for the opinions on the question of linkage with governments, with the following results:

15 consider linkage with governments still an asset;

41 consider linkage with governments still an asset, but changes will be necessary;

1 considers linkage with government no longer an asset.

The Executive Committee requested all participants to discuss these issues with their Designated Authorities, private member laboratories, and government member laboratories, for future consideration.

The next ISTA Extraordinary meeting will be hosted by the Secretariat in Zurich, Switzerland, June 30-July 3, 2003. The 27th ISTA Congress will be held in Budapest, Hungary, May 2004.

ASSOCIATION OF AMERICAN SEED CONTROL OFFICIALS MEETING

Seed Regulatory and Testing Branch (SRTB) Chief Richard Payne and Seed Marketing Specialists Steve Hurst and Harold Laswell attended the Association of American Seed Control Officials (AASCO) meeting, in Bismarck, ND, July 20-25, 2002. The following allied organizations gave reports: Association of Official Seed Analysts (AOSA), Lee Daughtry (MS), Society of Commercial Seed Technologists (SCST), Pat Brownfield; American Seed Trade Association (ASTA), Leslie Cahill; Canadian Food Inspection Agency (CFIA), Louise Duke; and U.S. Department of Agriculture (USDA) by Richard Payne. Other affiliate meeting reports and preliminary committee reports were also given.

Steve Sebesta of the Rough Rider Genetics Company reported on North Dakota public institutions' involvement in genetically modified variety releases. Bill Kuntz of Advanta USA, Inc., AgriPro Wheat Division, reported on private variety releases and the steps the company takes to maintain control of their varieties. Tom Sinner, Jr. of the North Dakota State Seed Department reported on organic certification and labeling. Dr. Natarajan Balachander of Landec Ag reported on advances in polymer seed coating, how their process can regulate germination, and how such seed might be labeled. Larry Nees (IN) reported on his involvement in developing policy on categorizing invasive plant species. A panel of speakers, Barry Martin of Monsanto Company, Richard Payne (SRTB), Kelly Book (TX), and Leslie Cahill (ASTA), discussed and answered questions on variety, brand, product, and other labeling issues. Doris Dixon of the Monsanto Company gave an update on the recent International Seed Testing Association (ISTA) meeting. Joe Garvey (PA) discussed how the Recommended Uniform State Seed Law (RUSSEL) works, recent amendments, and how the Pennsylvania State Law is being changed to incorporate the latest changes. Leslie Cahill (ASTA) supported Mr. Garvey's remarks and encouraged all states to include mandatory nonbinding arbitration in their seed laws. Lee Daughtry (MS) explained how 3-part purity labeling might be incorporated into state requirements, and David Taylor (MT) reported on survey results on this topic. Chuck Dale (MN) discussed brand registration and variety labeling laws in Minnesota.

Two amendments to RUSSEL were submitted and adopted. The first amendment alphabetized the definitions in RUSSEL. The second amendment changes RUSSEL language for flower seed labeling to make it uniform with other language in RUSSEL. The latest version of RUSSEL will be posted on AASCO's Web site: <http://www.seedcontrol.org>.

Two resolutions were passed and sent to the proper organizations so they may be informed of AASCO's position on these subjects. The first resolution addressed the term "product" on seed labels. "Product" is not recognized as a legal term under states' seed laws in the RUSSEL. The second resolution is being submitted to the National Association of State Departments of Agriculture (NASDA), to request NASDA's support in the establishment of a national registration program of variety names for agricultural and vegetable seed kinds subject to the Federal Seed Act (FSA). Due to the misuse of variety and branded names by some in the seed industry, AASCO believes there is a need to have this program developed. AASCO will be developing policy and guidelines over the next year to present to NASDA to obtain their support in requesting that USDA establish this program in the Seed Regulatory and Testing Branch with appropriate funding to cover the cost of this program. This will require the FSA being amended.

Association of Seed Control Officials of the Northeastern States

Only two members of the Association of Seed Control Officials of the Northeastern States (ASCONES), New York and Pennsylvania, were able to attend this year's meeting. Therefore, ASCONES met with the Southern Seed Control Officials group.

A Northeast Seed Analyst Workshop is being held at the Pennsylvania State seed laboratory September 25-26, 2002, co-hosted by New York and Pennsylvania.

We want to thank ASCONES President Joe Garvey for submitting the information for these reports.

North Central States Seed Control Officials Association

Acting President Dave Svik (NE) presided over the North Central States Seed Control Officials Association (NCSSCOA) meeting on July 23 during the Association of American Seed Control Officials meeting in Bismarck, ND. Reports were given of seed control activities in eight States (Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, and North Dakota), the Canadian Food Inspection Agency, and the Seed Regulatory and Testing Branch. Many of the states mentioned that germination on soybean samples has been very high. NCSSCOA discussed several topics at length. Subjects of importance that were discussed included: internet and catalog seed sales, Association of Official Seed Analysts rule changes for 2002, an article in a recent "Seed World" about the Recommended Uniform State Seed Law (RUSSEL), seed law amendments and function of a Seed Advisory Group in Minnesota, a new "Inspections Under Seed Contracts" law in Indiana, and variety/brand labeling. Also, Pat Brownfield, president of Society of Commercial Seed Technologists, gave a presentation on 3-part purity testing and reporting. Dave Svik (NE) was elected vice-president to replace Luc Mougeot (CAN) who moved up to president due to the departure of Antonio Castro-Escobar (MI).

Southern Seed Control Officials Association

President Wade Krivanek (OK) presided over the July 23, 2002, Southern Seed Control Officials Association (SSCOA) meeting held at Bismarck, ND. Representatives were present from 10 states (Alabama, Arkansas, Florida, Georgia, Kentucky, Mississippi, New York, Oklahoma, Pennsylvania, and Texas), Canada, and the Seed Regulatory and Testing Branch. Seed Marketing Specialist Harold Laswell gave an annual up-date on Federal Seed Act (FSA) activities. Major topics discussed at the meeting included: corn and soybean variety and brand labeling issues, wildlife seed mixtures; wildflower seed mixtures, parent seed labeling; sale of "protected varieties" as "Variety Not Stated" for pasture, cover crop, hay, plow-down use; Roundup™ Ready wheat; and 3-part purity labeling.

The resolution submitted by the Northeast Seed Control Officials prohibiting the use of the term "product" on the label was also approved by the SSCOA. Another resolution requiring mandatory variety name registration for all agricultural and vegetable seed kinds subject to the FSA was approved by the SSCOA.

Western Association of Seed Control Officials

The Western Association of Seed Control Officials (WASCO) regional meeting was held during the Association of American Seed Control Officials meeting in Bismarck, ND. Representatives were present from four state seed control programs (California, Montana, Oregon, and Washington), Canada, and the Seed Regulatory and Testing Branch. Others attending the WASCO meeting were Pat Brownfield, President of the Society of Commercial Seed Technologists (SCST) and Vince Snyder of The Scott's Company.

The issue of the proposed 3-part purity test versus the official 4-part purity test was discussed and outlined for the benefit of new, incoming officials. SCST President Pat Brownfield said that the SCST is in favor of the 3-part purity test being added to the AOSA rules as an option for those requesting this type of a test. There was a discussion that a 3-part test would probably require the "other" seeds to be listed individually by percent on the test report. It was stressed that the 3-part purity test is a testing issue and would not change the requirement for a 4-part purity label. Vince Snyder of The Scott's Company expressed concern over the implication that the 3-part purity test might have on labeling issues.

A discussion was held regarding the existing 200 seed tetrazolium (TZ) test. Data was provided to WASCO by the Agri Seed Testing Laboratory in support of using TZ test results for labeling purposes. After discussion, a motion was approved to request that the Review Committee of the Recommended Uniform State Seed Law (RUSL) consider allowing TZ testing for cool season grass species, as listed in RUSL section 2C, for the purpose of labeling, provided that the label indicates TZ as the test method.

WASCO recommends reviewing the use of the terms germination, viability, dormancy, and hard seed in RUSL.

It was suggested that RUSL should be updated so that all states could consider RUSL being adopted as their state seed law. It was felt that this would give AASCO greater credibility.

Participants discussed various issues involving labeling of genetically engineered varieties. Louise Duke expressed concerns of genetically engineered grass varieties being accidentally introduced into Canada.

The need for a seed laboratory accreditation program under a USDA oversight was discussed.

We would like to thank Oregon Department of Agriculture Assistant Administrator Ronald Pence for submitting the information for this report.

TTV VISIT TO SOUTHERN UNIVERSITY, BATON ROUGE, LOUISIANA

Al Burgoon visited Dr. Owusu Bandele and his assistant, Milagro Berhane, at Southern University to view the trueness-to-variety (TTV) field trials of okra. This is the 10th year that Dr. Bandele and staff have cooperated in the TTV program.

The okra test samples came to us from various state inspection programs as well as our own sampling from the internet, catalog sales companies, and from the District of Columbia. Check samples came from various companies and individuals engaged in okra breeding.

One such person, Russell Pierson of Oklahoma, supplied quite a few check samples for us this year. Mr. Pierson is a long time okra seed producer. We appreciate his interest in the TTV program.

As expected, conditions were hot but we had no rain. We started at 6:15 am to avoid the worst of the heat. The foliage was heavy with dew so we all got a good soaking. We were wary of fire ant mounds, not standing too long in one spot. Fire ants like to build their nests near the plot marker stakes for some reason.

There were 113 samples planted in the trial. The samples were grouped by variety, including Burgundy, Clemson Spineless, Dwarf Green Long Pod, Lee, Emerald, Louisiana Green Velvet, etc. Hybrids include such as Annie Oakley II, Baby Bubba, Cajun Delight, Green Best, and North and South.

The tallest varieties are over 5 feet tall, while most were about 4 feet in height, and a few are only about 2 feet tall. We looked at various plant characters, including: pod size and shape (ridged or rounded, tapered or not), spiniess, foliage color, leaf shape, plant height, etc. Okra, a relative of hibiscus and cotton (family Malvaceae), tends to have one showy flower per day (yellow with a red eye) that opens near the top of the stem, is often bee pollinated and then sets fruit. (Note: okra pollination is facultative.) Burgundy okra has a pink flower instead. The most mature fruit are near the base of the single main stem. Some varieties have pods up to 12 inches long, while most top out at about 9 inches in length. Pods of White Velvet are very light green, almost white. Like most vegetables, okra is best when harvested at a much smaller stage. Most varieties have some red pigmentation in the foliage, most often in the leaf veins (and particularly at the base of the palmate leaf blade) and along the petioles.

Several samples were identified as apparently mislabeled and these results will be forwarded to the state officials involved when the tests are complete.

QUESTIONS AND ANSWERS

Below is a sampling of questions that staff members of the Seed Regulatory and Testing Branch (SRTB) have recently received from various seed testing laboratories.

Q: Our laboratory has received a sample labeled Canada wildrye, variety 'Dahurian.' What is it?

A: Dahurian wildrye is a distinct species, not a variety of Canada wildrye. The scientific name is **Elymus dahuricus** Trucz. ex Griseb. According to "Grass Varieties in the United States" (USDA Agriculture Handbook 170, rev. ed. 1995), Dahurian wildrye is a cool-season, short-lived perennial bunchgrass that is native to Asia. It is grown for forage in the upper Great Plains of North America.

Dahurian wildrye is a kind that is not subject to the Federal Seed Act (FSA). However, Canada wildrye is subject to the FSA. If a seed lot is labeled as Canada wildrye but found to actually be Dahurian wildrye, that lot would be considered to be mislabeled under the FSA.

Q: A sample of Roundup™ Ready wheat was submitted to our laboratory for testing. Is there a laboratory test method available?

A: Roundup™ Ready wheat is under development but has not been released for commercial production. The sample submitted to your laboratory apparently was accompanied by the wrong information.

Q: What are fatuoid oats? Are they considered noxious weeds?

A: Fatuoid oats are seeds of **Avena sativa** that have some morphological characteristics similar to wild oat (**Avena fatua**). They are not weeds and should be included with the pure seed component when found in a sample of oat.

Q: What is the fluorescence level for intermediate ryegrass? Our laboratory is testing a sample labeled as a mixture of annual ryegrass, perennial ryegrass, and intermediate ryegrass, and we need to know what formula to use for the fluorescence calculation.

A: Intermediate ryegrass does not have an established fluorescence level. In the situation of a mixture of intermediate, annual, and perennial ryegrasses, a fluorescence test might be useful as an indication that annual and perennial ryegrasses are present, i.e. both fluorescent and non-fluorescent seedlings are present in the test. However, no formula can be used to derive specific percentages of each of the ryegrass components. In grow-outs of intermediate ryegrass seedlings by the SRTB, we have observed considerable variability in plant characteristics also, so we do not consider grow-outs to be useful for samples of intermediate ryegrass.

FEDERAL SEED ACT CASE SETTLED

The following cases were settled administratively under the Federal Seed Act between April 1 and June 30, 2002. Under the administrative settlement procedure, the Seed Regulatory and Testing Branch and the firms agreed to settle the cases for the amount specified, with the firms neither admitting nor denying the charges:

- Farmers Ag Center, Mountain Grove, MO, has paid \$7,875 for a case involving 11 seed shipments. The alleged violations, while not the same for all shipments, were false labeling as to purity and noxious-weed seeds; failure to label the presence of noxious-weed seeds; seed containing a sum-total of noxious-weed seeds in excess of state's limits; and failure to keep required records. Seed regulatory officials in Alabama, Georgia, Kentucky, and North Carolina cooperated in the initial sampling and inspection.
- J. Lee Company, Hennessey, OK, has paid \$2,625 for a case involving six seed shipments. The alleged violations, while not the same for all shipments, were false labeling of noxious-weed seeds and germination percentage; and failure to show the

required information for a seed component, to keep required records, and to show the shipper's code or name and address. Seed regulatory officials in Georgia and Texas cooperated in the initial sampling and inspection.

- Western Productions, Inc., Woodburn, OR, has paid \$1,875 for a case involving seven seed shipments. The alleged violations, while not the same for all shipments, were false purity and noxious-weed seed labeling and failure to test within the required time prior to shipment and to label the presence of noxious-weed seeds. Seed regulatory officials in Kentucky, North Carolina, and Virginia cooperated in the initial sampling and inspection.

NEW WEB SITE ADDRESS

Our Web page address has changed to: <http://www.ams.usda.gov/lsg/seed.htm>. Please be sure to make this change to any of your computer bookmarks, favorites, and Web page links.

SEED REGULATORY AND TESTING BRANCH RELOCATION APPROVED

USDA's proposal to relocate the Seed Regulatory and Testing Branch from its current site in Beltsville, MD, to a new facility in Gastonia, NC, has been officially approved.

Currently, a building is being designed to the Branch's specifications to house the laboratory and offices. The building will be adjacent to the Agricultural Marketing Services Science and Technology's office and laboratory. The new facility will provide AMS with the ability to test seed and other agricultural commodities for genetically engineered traits.

The relocation is scheduled to take place in early 2003.

RETIREMENT

August 1, 2002, marked Don Dreyer's retirement from the Seed Regulatory and Testing Branch (SRTB).

Dreyer had been the seed marketing specialist for the Northeastern Region since October 1982, following the closing of the Branch's field offices, and had worked for the SRTB since March 1979. After receiving a Bachelor of Science in Forestry degree and his military commission at West Virginia University, Morgantown, WV, he served almost two years in the United States Army. Dreyer started his Federal civilian career in 1974 with the Department of Veterans Affairs, Philadelphia, PA. Prior to entering Federal service, he worked for 3-1/2 years as a horticulturist/agronomist with the West Virginia Department of Highways.

One of Dreyer's duties over the last 16 years was serving as editor for the "Items of Interest in Seed Control."

We wish him well in retirement.

NEW CONTACT FOR NORTHEASTERN REGION

Jeri Irwin will succeed Don Dreyer as seed marketing specialist for the northeastern region and as editor of the "Items of Interest in Seed Control."

Irwin served as the Branch secretary from 1989 to 1996. She was selected for a 4-year mentoring program administered by USDA's Agricultural Marketing Service and trained with Seed Marketing Specialist Steve Hurst. On June 4, 2000, Irwin was hired as a seed marketing specialist. She is looking forward to working with state officials of the northeastern states.

RYEGRASS FLUORESCENCE LIST

On August 23, 2002, the National Grass Variety Review Board (NGVRB) issued an updated ryegrass fluorescence list.

Four experimental perennial ryegrass varieties and eleven perennial ryegrass varieties were added to the list. The perennial ryegrass experimental varieties are CIS-PR72 (Stellar), MP58 (Spendor), MRF 41 (Federation), and WX9-2000 (Seville II). The perennial ryegrasses Aquarius 3, Cabo, Esteem, Icon, Patriot 3, Pearl II, Secretariat, SkyHawk, Sol, Superstar, and Vixen were also added.

The perennial ryegrasses Gallery, Integra, Nexus, Spendid, and Summerset have all been accepted for certification as varieties.

Perennial Ryegrass Variety Name	Percent Varietal Fluorescence	Perennial Ryegrass Variety Name	Percent Varietal Fluorescence
246	0.27%	Blackhawk	1.17%
2CB	1.97%	Blazer III	1.18%
856	0.87%	Boardwalk	2.72%
89-90	2.15%	Breeze	1.57%
90-14 ¹	7.12%	Brightstar	1.79%
96-KSOS-L-1-PR-WVPB-C-24 ¹	6.50%	Brightstar II ³	2.24%
A +	6.23%	Brightstar SLT	0.55%
Academy	2.33%	Buccaneer	7.44%
Accent	0.56%	Buccaneer II	5.48%
Accolade	4.83%	CIS-MBH	1.27%
Accord	4.08%	C-21	6.28%
Achiever	0.93%	Cabo	1.24%
Admire	2.37%	Caddieshack	1.57%
Advent	0.14%	Caliente	0.74%
Affinity	0.77%	Calypso	1.29%
Affirmed	2.59%	Calypso II	0.47%
Agresso	2.00%	Catalina	3.18%
AllSport	0.92%	Cathedral	0.85%
All*Star	0.47%	Chaparral	1.62%
Allaire II	1.15%	Charger II ³	0.54%
APM	0.59%	Charisma	2.39%
Aquarius	0.97%	Chatham ³	2.11%
Aquarius 3	1.24%	Churchill	2.93%
Archer	1.51%	Cinderella	1.59%
A.S.A.P.	1.42%	CIS-PR72 (Stellar) ¹	2.20%
Ascend	3.09%	Citation III	0.96%
ASP410	0.18%	Commander	1.02%
Assure	0.72%	Covet	2.71%
Bayou ¹	1.33%	Cutter	1.65%
Bedford	1.40%	Dancer	0.78%
Bella	0.65%	Dandy	2.00%

Perennial Ryegrass Variety Name	Percent Varietal Fluorescence	Perennial Ryegrass Variety Name	Percent Varietal Fluorescence
Delaware Dwarf	2.60%	Lowgrow ³	1.31%
Derby Supreme	2.85%	Lowgrow II	1.35%
Dillon	4.14%	LRF-94-C8 ¹	0.64%
Divine	3.09%	Lynx	4.19%
DS95-201 (Enchanted) ¹	1.12%	Magic	1.21%
Easy Livin'	1.50%	Magic II	1.36%
Ecologic	1.49%	Majesty	1.59%
Edge	1.73%	Manhattan II ³	0.65%
Elegance	1.51%	Manhattan 3 ³	0.88%
Elf	0.75%	Mardi Gras	1.07%
Elfkin	0.89%	Monterey	2.64%
Elite	4.84%	Monterey II	1.94%
Envy	0.22%	Morningstar	0.87%
EP39 (Pronto II) ¹	1.75%	MP5 (PDQ) ¹	4.65%
Equal	1.98%	MP58 (Splendor) ¹	0.44%
Esquire ¹	3.10%	MRF 41 (Federation) ¹	2.74%
Esteem	0.43%	Mulligan	1.86%
Evening Shade	1.17%	Navajo ³	0.37%
Exacta	1.22%	Newlinn	5.85%
Excel ³	1.53%	Nexus	2.01%
Express	4.00%	NightHawk	1.39%
Extreme	1.32%	Nobility	7.53%
Fiesta II ³	1.14%	Nomad	1.03%
Fiesta 3	1.02%	Nova	1.00%
Galaxy	1.19%	Omega 3	0.73%
Gallery	0.83%	Omni	0.51%
Gator	0.88%	Pageant	2.22%
Gator II	2.50%	Pageant II ¹	3.32%
Gettysburg	2.74%	Palmer	1.04%
Goalkeeper	0.82%	Palmer II	1.51%
Greenland	1.20%	Palmer III	0.23%
Grimalda	2.00%	Panther	1.18%
Headstart	2.09%	Paragon (MML, TMI-MML) ¹	0.88%
High Life	1.59%	Passport ³	1.06%
Icon	2.21%	Patriot II	0.42%
Imagine	1.31%	Patriot 3	2.10%
Integra	0.12%	Pearl	1.86%
Jet	0.84%	Pearl II	1.00%
Jiffie	6.06%	Pegasus	2.41%
Laredo	0.53%	Pennant	0.50%
Legacy	0.37%	Pennant II	1.63%
LF-100 (Continental) ¹	5.88%	Phantom	2.19%
Lindsay	1.72%	Pick Lp Q-93 ¹	6.44%
Line Drive	2.72%	Pleasure	4.09%
Linn	5.00%	Pleasure XL	1.11%

¹ Experimental Designation and/or Variety.

² Exempt from varietal fluorescence testing calculations.

³ The NGVRB is now listing OECD synonym names. **These names are not acceptable for sale in the United States** and are included for informational purposes. The variety and its OECD synonym shown in italics are: Brightstar II-*Polarstar*, Charger II-*Fairway*, Chatham-*Catia*, Excel-*Romadera*, Fiesta II-*Pickwick*, Lowgrow-*Lex86*, Lowgrow II-*Sunbright*, Manhattan II-*Numan*, Manhattan 3-*Triman*, Navajo-*Comanche*, Passport-*Romeo*, Repel II-*Verdi*, Seville-*Leonardo*, SR4100-*Athena*, Target-*Libra*, and Wizard-*Sardinero*.

Additions and Deletions
Of
Plant Variety Protection
Certificates

PLANT VARIETY PROTECTION CERTIFICATES
(Issued April 1, 2002 through August 23, 2002)

KIND VARIETY	APPLICANT	TITLE V (GEN.)	1994 PVPA	KIND VARIETY	APPLICANT	TITLE V (GEN.)	1994 PVPA
ALFALFA				CORN, FIELD			
EverGreen	Forage Genetics, Inc.		Y	01HGI4	DEKALB Genetics Corporation		Y
Geneva	Forage Genetics, Inc.		Y				
Reno	Forage Genetics, Inc.		Y	01INL1	DEKALB Genetics Corporation		Y
UC-Impalo-WF	The Regents of the University of California	Y (3)	Y	09DSS1	DEKALB Genetics Corporation		Y
BARLEY							
A629	Plant Breeders 1 Inc.		Y	16IUL2	DEKALB Genetics Corporation		Y
Drummond	NDSU Research Foundation	Y (3)	Y				
Jersey	Cebeco Seeds B.V.	Y (3)	Y	17DHD16	DEKALB Genetics Corporation		Y
Lacey	Minnesota Agricultural Experiment Station	Y (3)	Y	17INI20	DEKALB Genetics Corporation		Y
TAMBAR 501	Texas Agricultural Experiment Station	Y (3)	Y	17INI30	DEKALB Genetics Corporation		Y
BASIL							
Magical Michael	Purdue Research Foundation		Y	17QFB1	DEKALB Genetics Corporation		Y
BEAN, FIELD				22DHD11	DEKALB Genetics Corporation		Y
GTS 900	Gen-Tec Seeds, Limited	Y (2)	Y				
BEAN, GARDEN				22DHQ3	DEKALB Genetics Corporation		Y
DMC 04-05	Del Monte Corporation		Y				
DMC 04-80	Del Monte Corporation		Y	4SCQ3	DEKALB Genetics Corporation		Y
BLUEGRASS, KENTUCKY							
Caliber	J.R. Simplot Company		Y	86ISI26	DEKALB Genetics Corporation		Y
BLUEGRASS, ROUGH							
Sabre II	Cebeco International Seeds, Inc.		Y	86ISI27	DEKALB Genetics Corporation		Y
BUFFALOGRASS				87ATD2	DEKALB Genetics Corporation		Y
Bowie	University of Nebraska, Lincoln	Y (3)	Y	87DIA4	DEKALB Genetics Corporation		Y
CHICKLING VETCH							
AC Greenfix	Agriculture and Agri-Food Canada Semi-arid Prairie Agricultural Research Centre	Y (3)	Y	91ISI5	DEKALB Genetics Corporation		Y
				94INK1A	DEKALB Genetics Corporation		Y
CORN, FIELD				GF6150	DEKALB Genetics Corporation		Y
01HFI3	DEKALB Genetics Corporation		Y	LH229	Holden's Foundation Seeds L.L.C.		Y
01HGI2	DEKALB Genetics Corporation		Y	LH261	Holden's Foundation Seeds L.L.C.		Y

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CORN, FIELD				COTTON			
LH265	Holden's Foundation Seeds L.L.C.		Y	PM 1330 RR	Arkansas Agricultural Experiment Station		Y
LH266	Holden's Foundation Seeds L.L.C.		Y	PM 2200 RR	Delta & Pine Land Company; d/b/a Paymaster Cottonseed		Y
LH274	Holden's Foundation Seeds L.L.C.		Y	PM 2326 RR	Delta & Pine Land Company; d/b/a Paymaster Cottonseed		Y
LH277	Holden's Foundation Seeds L.L.C.		Y	ST 495	Stoneville Pedigreed Seed Company, Inc.		Y
LH301	Holden's Foundation Seeds L.L.C.		Y	Sure-Grow 180	Sure-Grow Seed, Inc.		Y
LH302	Holden's Foundation Seeds L.L.C.		Y	Sure-Grow 209	Sure-Grow Seed, Inc.		Y
LH303	Holden's Foundation Seeds L.L.C.		Y	Sure-Grow 248	Sure-Grow Seed, Inc.		Y
PH3HH	Pioneer Hi-Bred International, Inc.		Y	ZOI	J.G. Boswell Company Cottonseed Breeding	Y (1)	Y
WDHQ11	DEKALB Genetics Corporation		Y	FESCUE, TALL Barlexas	Barenbrug Holland B.V.		Y
WDHQ2	DEKALB Genetics Corporation		Y	ONION 5C RED Majic Early Yellow Grano PRR	Jarit (Aust) Pty. Ltd. West-Gro Farms, Inc.		Y Y
COTTON				PEA			
Acala GTO Maxxa	California Planting Cotton Seed Distributors	Y (*)	Y	Cello	Agro Seed Research by ba		Y
DIVA	California Planting Cotton Seed Distributors	Y (*)	Y	FP2070	Syngenta Seeds, Inc.		Y
DP 32B	Delta and Pine Land Company d/b/a Deltapine Seed		Y	FP2154 Lil' Mo	Syngenta Seeds, Inc. Seminis Vegetable Seeds, Inc.		Y Y
DP 6204 Acala Drima	Olvey & Associates, Inc. J.G. Boswell Company Cottonseed Breeding	Y (1)	Y	Mr. Big North Wind Perfection 57	Seminis Vegetable Seeds, Inc. Syngenta Seeds, Inc. Seminis Vegetable Seeds, Inc.		Y Y Y
El Dorado Acala H1560	J.G. Boswell Company Louisian Agricultural Experiment Station	Y (1)	Y	Sugar Lace II Tyne	Novartis Seeds, Inc. Crites-Moscow Growers, Inc.		Y Y
Holland 186 Mocha	Stoneville Texas, Inc. C. Harvey Campbell Jr.;		Y	PEA, FIELD Big Daddy	Cebeco Zaden B.V.	Y (3)	Y
PM 1330 BG	David B. Ferguson Arkansas Agricultural Experiment Station		Y	Jasmine PEANUT	Nickerson S.A.		Y

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Coan	Texas Agricultural Experiment Station	Y (3)	Y	RYEGRASS, PERENNIAL Equal	Willamette Valley Plant Breeders, Inc.		
Florida MDR 98	University of Florida - Agric. Expt. Sta.	Y (3)	Y	SALICORNIA			
Georgia Bold	University of Georgia Research Foundation, Inc. (UGARF) and University of Florida Agricultural Experiment Station	Y (3)	Y	SIS 1	Seaphire International, Inc.		Y
				SIS 2	Planetary Design Corporation		Y
Gregory	North Carolina Agricultural Research Service Dr. Thomas G. Isleib (breeder)	Y (3)	Y	SOYBEAN 02324990 90B51	Asgrow Seed Company LLC Pioneer Hi-Bred International, Inc.		Y
TAMRUN 96	Texas Agricultural Experiment Station	Y (3)	Y	90B74	Pioneer Hi-Bred International, Inc.		Y
Tamrun 98	Texas Agricultural Experiment Station	Y (3)	Y	91B03	Pioneer Hi-Bred International, Inc.		Y
VirusGard	AgraTech Seeds Inc.	Y (3)	Y	91B42	Pioneer Hi-Bred International, Inc.		Y
POTATO				92B12	Pioneer Hi-Bred International, Inc.		Y
CasaNova	HZPC Holland B.V.		Y	92B13	Pioneer Hi-Bred International, Inc.		Y
Cynthia	Germicopa S.A.		Y	92B14	Pioneer Hi-Bred International, Inc.		Y
DELIKAT	NORIKAI Nordring-Kartoffelzucht- und Vermehrungs-GmbH GroB Lusewitz		Y	92B47	Pioneer Hi-Bred International, Inc.		Y
Innovator	HZPC Holland B.V.		Y	93B09	Pioneer Hi-Bred International, Inc.		Y
NL30-RBK	Monsanto Company		Y	93B36	Pioneer Hi-Bred International, Inc.		Y
Russet Norkotah 112	Texas Agricultural Experiment Station		Y	93B68	Pioneer Hi-Bred International, Inc.		Y
Russet Norkotah 278	Texas Agricultural Experiment Station		Y	94B13	Pioneer Hi-Bred International, Inc.		Y
SAXON	Cygnnet Potato Breeders Ltd.		Y	94B74	Pioneer Hi-Bred International, Inc.		Y
Valisa	NORIKAI Nordring-Kartoffelzucht- und Vermehrungs-GmbH GroB Lusewitz		Y	9594	Pioneer Hi-Bred International, Inc.		Y
Velox	Saka-Ragis Pflanzenzucht GbR		Y	95B42	Pioneer Hi-Bred International, Inc.		Y

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SOYBEAN 95B43	Pioneer Hi-Bred International, Inc.		Y	Sargent	NDSU Research Foundation, ND Agricultural Experiment Station	Y (3)	Y
Akibiyori	Kaneko Seeds Company, Ltd.		Y	SE80014 SN79628	Asgrow Seed Company LLC Asgrow Seed Company LLC		Y Y
BS-141	Brushvale Seeds, Inc.		Y	Suzunishiki	Kaneko Seeds Company, Ltd.		Y
BS-208	Brushvale Seeds, Inc.		Y				
HBK 5991	Hornbeck Seed Company, Inc.		Y	SQUASH Bush Delicata	Cornell University Experiment Station		Y
HBK 6600	Hornbeck Seed Company, Inc.		Y				
KS 4895	Kansas Agricultural Experiment Station	Y (3)	Y	TRITICALE 105 111	Resource Seeds, Inc. Resource Seeds, Inc.		Y Y
KS4997	Kansas Agricultural Experiment Station	Y (3)	Y	815	Resource Seeds, Inc.		Y
MN0201	Minnesota Agricultural Experiment Station	Y (3)	Y	WHEAT, COMMON 2174	Oklahoma Agricultural Experiment Station	Y (3)	Y
N6201	U.S. Department of Agriculture/Agriculture Research Service and N.C. Agriculture Research Service	Y (2)	Y	25R23 25R42 25R78	Pioneer Hi-Bred International, Inc. Pioneer Hi-Bred International, Inc.		Y Y Y
N7101	U.S. Department of Agriculture/Agriculture Research Service and N.C. Agriculture Research Service	Y (2)	Y	Betty Bravo CDC Falcon	Kansas Agricultural Experiment Station Sunbeam Extract Company Western Plant Breeders, Inc.	Y (3) Y (3)	Y Y Y
N7102	USDA-Agricultural Research Service	Y (2)	Y	Challis	Western Plant Breeders, Inc.		Y
N7103	U.S. Department of Agriculture/Agriculture Research Service and N.C. Agriculture Research Service	Y (2)	Y	Coker 9152 Coker 9184 Eldon Granite	Syngenta Seeds, Inc. Syngenta Seeds, Inc. Western Plant Breeders Dr. Peter Franck	Y (3) Y (3) Y (3)	Y Y Y
OHIO FG3	Ohio Agricultural Research and Development Center	Y (*)	Y	Hanna	UGG and AgriPro wheat, a business unit of Advanta U.S.A.	Y (*)	Y
S 62-62 S14-U4	Novartis Seeds, Inc. Novartis Seeds, Inc.		Y Y	Keystone Knudson	Western Plant Breeders, Inc. Monsanto Company		Y Y

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WHEAT, COMMON							
NuFrontier	Agripro Wheat, a business unit of Advanta USA	Y (*)	Y				
Nuplains	United States Department of Agriculture; Agricultural Research Service	Y (3)	Y				
TAM 302	Texas Agricultural Experiment Station	Y (3)	Y				
Zak	Washington State University Research Foundation		Y				

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ALFALFA				RYEGRASS, PERENNIAL			
Advantage	Lathrop & Gage L.C.			2DF	Pure-Seed Testing, Inc.		
Maverick	Lathrop & Gage L.C.			Barclay	Barenbrug Holland B.V.	Y (3)	
Spredor 2	Novartis Seeds, Inc.			Crown	Mommersteeg International B.V.		
BARLEY							
Triumph	Sharpes International Seed Ltd.	Y (3)		Fantoom	Advanta BV		
				Friend	Snow Brand Seed Company Ltd.		
BEAN, FIELD							
Agate	Novartis Seeds, Inc.			Manhattan II	Pure-Seed Testing, Inc.		
Amber	Novartis Seeds, Inc.			Ovation	Mommersteeg International B.V.		
Spinel	Novartis Seeds, Inc.						
BEAN, GARDEN							
Nerina	Royal Sluis B.V.			Palmer	KRB Seed Company, LLC		
Nomara	Royal Sluis B.V.			Prelude	ProSeeds Marketing, Inc.		
CORN, FIELD				Ranger	D.J. van der Have B.V.		
G39	Pioneer Hi-Bred International, Inc.			SOYBEAN			
				Gutwein 225	Soybean Research Foundation, Inc.		
LH145	Holden's Foundation Seeds, Inc.						
				RA-580	Novartis Seeds, Inc.		
FESCUE, TALL				S14-60	Novartis Seeds, Inc.		
Mustang	Pickseed West Inc.			S30-31	Novartis Seeds, Inc.		
LETTUCE				Shiloh	Advanta USA, Inc.		
Centurion	Quali-Sel, Inc.			Sparks	Kansas Agricultural Experiment Station	Y (3)	
PEA				SRF 205	Soybean Research Foundation, Inc.		
Aristagreen	Wilbur-Ellis Company						
Honey Pod	Novartis Seeds, Inc.						
Midget	Wilbur-Ellis Company						
Opal	Wilbur-Ellis Company						
Sunset	Novartis Seeds, Inc.						
Valgreen	Wilbur-Ellis Company						
RYEGRASS (LOLIUM X HYBRIDUM)							
3CN	Pure-Seed Testing, Inc.						
Oregreen	Pure-Seed Testing, Inc.						
RYEGRASS, ANNUAL							
Caramba	Advanta BV						
Marshall	Mississippi Agricultural and Forestry Experiment Station						
Multimo	Advanta BV						
WA-77	Pure-Seed Testing, Inc.						

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