

NOSB NATIONAL LIST FILE CHECKLIST

CROPS

MATERIAL NAME: Soaps

CATEGORY: Synthetic

Complete?: _____

NOSB Database Form

References

MSDS (or equivalent)

Date file mailed out: 7/20/95

TAP Reviews from: D. Blakomay

H. Rindl

P. Sachs

J. Johnson

J. Kovach

P. Van Buskirk

S. Cotner

Supplemental Information:

MISSING INFORMATION: _____

NOSB/NATIONAL LIST COMMENT FORM/BALLOT

Use this page to write down comments and questions regarding the data presented in the file of this National List material. Also record your planned opinion/vote to save time at the meeting on the National List.

Name of Material Soaps

Type of Use: Crops; Livestock; Processing

TAP Review by:

- | | |
|-----------------------------|---------------------------|
| 1. <u>Helmut Riedl</u> | 4. <u>Paul Sachs</u> |
| 2. <u>James A. Johnson</u> | 5. <u>Joe Kovach</u> |
| 3. <u>Philip VanBuskirk</u> | 6. <u>Sam Cother</u> |
| | 7. <u>Donald Blakeney</u> |

Comments/Questions:

My Opinion/Vote is:

Signature _____ Date _____

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: July 22

Name of Material: SOAP

Reviewer Name: Dr. H. Riedl / Oregon State Univ.

Is this substance Natural or Synthetic? Explain (if appropriate)

Please comment on the accuracy of the information in the file:

One technical sheet I have for safe soap lists the normal LD₅₀ to rabbits as > 2000 mg/kg (5000 mg/kg in database)

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Even if used correctly on sensitive plants (e.g. peaches) phytotoxicity to fruit may result.

Any additional comments or references?

Impact on beneficials requires further evaluation.

Signature

Helmut Riedl

Date

Aug 18, 94

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: July 22

Name of Material: SOAP

Reviewer Name: JAMES A. JOHNSON

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic

Please comment on the accuracy of the information in the file:

The information in the file appears to be very thoroughly researched

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Just the opposite, an innocuous material such as soap with a half-life of less than a day should not be required to be included on state pesticide use forms or at most be duly noted when purchased and inventoried once a year.

Any additional comments or references?

Is MycoGen's product consistent with the chemistry of other soap products such as Acco Plant & Tree Wash, Green Valley Natural plant wash, & Super Pesticidal soap?

Signature

James A. Johnson

Date

August 22, 1994

Webster's Dictionary defines "compatible" - capable of forming a homogenous mixture that neither separates nor is altered by chemical interaction. In this light I suggest

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This file is due back to us within 30 days of: July 22

Name of Material: SOAP

Reviewer Name: Philip Van Buskirk

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic

Please comment on the accuracy of the information in the file:

Very accurate

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

No

Any additional comments or references?

NONE

Signature

Philip Van Buskirk

Date

8/17/94

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: July 22

Name of Material: SOAP

Reviewer Name: PAUL SACHS

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic - Fatty acids are natural but the extraction process is not

Please comment on the accuracy of the information in the file:

Seems to be quite accurate except that paralysis upon contact is not substantiated by any data I have seen. Also, vapors are only dangerous if ignited as they are flammable.

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Only those provided on the label

Any additional comments or references?

No

Signature

Paul D. Sachs

Date

8/19/94

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: July 22

Name of Material: SOAP

Reviewer Name: Joseph Kovach

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic

Please comment on the accuracy of the information in the file:

Information in the file is accurate but ~~lacking~~ it is lacking information on the effect of soap on beneficials. - ~~See~~

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

I would like to see a restriction on soap use ^{for} aphids if larvae of Aphidoletes are present. ~~Timing~~ Timing of soap applications would then be critical. ~~Something~~ ^{Timing} something to the effect of ^{using soap at this time may be detrimental to a control program for aphids} ~~if aphids are present and Aphidoletes larvae are present.~~

Any additional comments or references?

Soap has a Low-Medium effect on most beneficial mites and has low toxicity to most insect beneficials except for soft body predators such as Aphidoletes aphidimyza. ~~This~~ This aphid predator is susceptible to soap (as a larva). I don't think the ^{eggs} eggs are susceptible.

Signature

Joseph Kovach

Date

7/29/99

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: JULY 22

Name of Material: SOAP

Reviewer Name: Sam Cotter

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic

Please comment on the accuracy of the information in the file:

Accurate

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

May be phytotoxic at high temperatures and/or under high light conditions

Any additional comments or references?

Signature Sam Cotter

Date Aug 1, 1994

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: July 22

Name of Material: SOAP

Reviewer Name: Donald Blatney

Is this substance Natural or Synthetic? Explain (if appropriate)

Please comment on the accuracy of the information in the file:

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

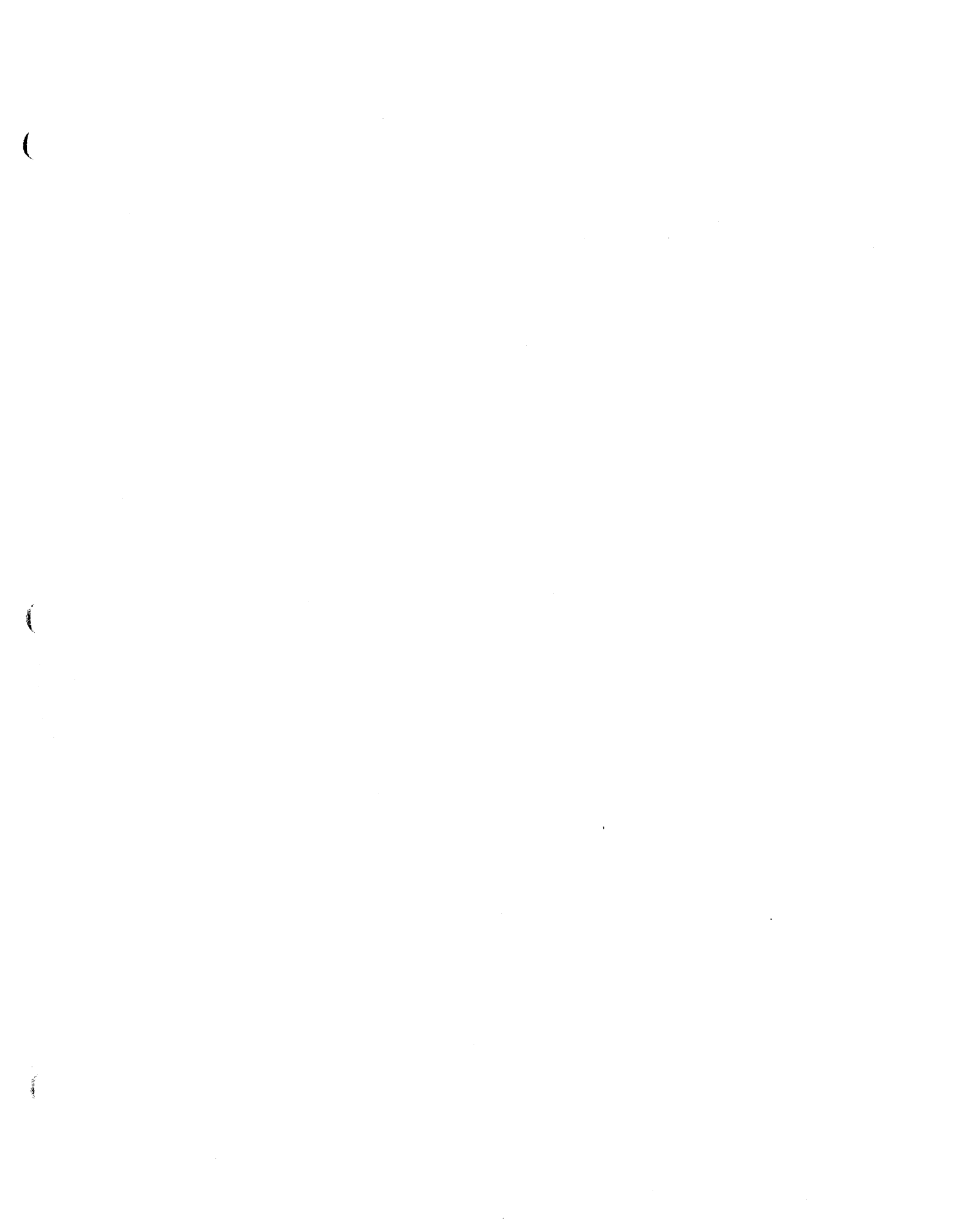
or, This material does not belong on the National List because:

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Any additional comments or references?

PLEASE Accept my Apology for the lateness of this review. We have been having real trouble with our MAIL. No Additional changes to description etc.

Signature Donald Blatney Date 10/15/94



NOSB Materials Database

Identification

Common Name **Soaps** **Chemical Name** Potassium salts of fatty acids
Other Names Insecticidal Soaps, Potassium Soap, Soap Salts
Code #: CAS Trade Secret **Code #: Other**
N. L. Category Synthetic Allowed

Chemistry

Composition Potassium Salts of unsaturated and saturated aliphatic carboxylic acids, such as laurate, myristate, oleate, ricinoleate, and ethanol. **Family**
Properties Highly soluble in water, pH 10.3, amber colored liquid, lard-like odor, may be scented. Flash point 330C as a result of alcohol content.
How Made Reaction of an alkali such as sodium or potassium hydroxide on a fat and further processed to create a blend of selected fatty-acid chain lengths.

Use/Action

Type of Use Crops
Use(s) pest control: soft bodied insects, mosses, algae, lichens, liverworts and some weeds.

Action Fatty acid penetration of insect cuticle and subsequent disruption of membrane integrity resulting in cell leakage, collapse and dehydration of the insect. Susceptible insects become instantly paralyzed on contact with the soap. Soaps may also penetrate plant cuticles, thus resulting in phytotoxic reactions.

Combinations Pesticidal soaps are formulated as liquid concentrates, ready-to-use sprays and granules.

Status

OFPA 6517 (c) (1) (B) (i) synthetic on list

N. L. Restriction none

EPA, FDA, etc

Registration M-Pede 5-1219-6

Directions Must be applied directly to and cover target pest.

Safety Guidelines Flammable; eye and skin irritant, spilled solution may be slippery

State Differences

Historical status Allowed by a wide majority of certification groups.

International status EU & CODEX & IFOAM all allowed.

NOSB Materials Database

OFPA Criteria

- 2119(m)1:chem. inter.** May react with concentrated mineral supplements such as fertilizers or strong oxidizing agents. Insecticidal soaps mixed with hard water may be ineffective.
- 2119(m)2: toxicity** Rapidly biodegrades in environment. The MSDS warns not to apply to lakes, streams or ponds. The half-life is estimated to be less than one day. Microbial organisms rapidly degrade fatty acids in soil. Soap salts cannot dissipate totally in soil, however, because soil has a natural content of fatty acids. Fatty acids are a significant part of the normal daily diet of mammals, birds and invertebrates. Potassium salts are highly toxic to aquatic invertebrates, slightly toxic to both coldwater and warmwater fish species.
- 2119(m)3:manufacture** Integrated manufacturing process with low probability of hazardous waste materials generation. May result in phytotoxic reactions if misused on sensitive plants.
- 2119(m)4:humans** Virtually nontoxic to the user classified in Toxicity Category IV (indicating the lowest level of toxicity). Potassium salts of fatty acids used on food and feed crops have been exempted from the requirement of a tolerance (or maximum residue limit) for all raw agricultural commodities since 1982 (see 40 CFR 180.1068). They are generally recognized as safe (GRAS) by the FDA (see 21 CFR 172.863). Mild to severe irritation to skin and eyes and vapors may be dangerous. May cause vomiting and general stomach upset if ingested in high doses. M-Pede insecticide has oral LD50 (rat) 16,900 mg/kg; Dermal LD50 (Rabbit) >5000 mg/kg.[Dr. H. Riedl's review shows a dermal LD50 (Rabbit) >2000 mg/kg]
- 2119(m)5: biology** see toxicity
- May be phytotoxic to plants if used incorrectly or in direct, high intensity sun light. Impact on beneficial insects needs more research.
- 2119(m)6:alternatives** Use cultural pest control methods. Oils, botanicals, biological control (depending on species).
- 2119(m)7:compatible** Compatible.

References

EPA Reregistration Eligibility Document (RED) Soap Salts. 9/92.

Miller,-F.D., "The use of horticultural oils and Insecticidal soaps for control of insect pests of amenity plants." J-Arboric. Urbana, Ill. : International Society of Arboriculture. Nov 1989. v. 15 (11) p. 257-262.
CN: DNAL SB436.J6

Moore,-W.S., "Insecticidal soaps." Horticulture. Boston, Mass. : Massachusetts Horticultural Society. Jan 1986. v. 64 (1) p. 64-65. ill.
CN: DNAL 80-H787

SOAP REFERENCES

AU: Miller,-F.D.

TI: The use of horticultural oils and **Insecticidal soaps** for control of insect pests of amenity plants.

SO: J-Arboric. Urbana, Ill. : International Society of Arboriculture. Nov 1989. v. 15 (11) p. 257-262.

CN: DNAL SB436.J6

AU: Wilson,-L.F.; Moore,-L.M.

TI: Preference for some nursery-grown hybrid *Populus* trees by the spotted poplar aphid and its suppression by **Insecticidal soaps** (Homoptera: Aphididae).

SO: Great-Lakes-Entomol. East Lansing, Mich. : Michigan Entomological Society. Spring 1986. v. 19 (1) p. 21-26.

CN: DNAL QL461.M5

AU: Moore,-W.S.

TI: **Insecticidal soaps**.

SO: Horticulture. Boston, Mass. : Massachusetts Horticultural Society. Jan 1986. v. 64 (1) p. 64-65. ill.

CN: DNAL 80-H787

PA: Other-US

AU: Condrashoff,-S.F.

TI: Insecticidal soaps.

SO: Agrologist. Ottawa : Agrican Publishers, Inc. Winter 1986. v. 15 (1) p. 18-19. ill.

CN: DNAL S1.A375

AU: Parrella,-M.P.; Paine,-T.D.; Bethke,-J.A.; Robb,-K.L.;

Hall,-J.

TI: Evaluation of *Encarsia formosa* (Hymenoptera: Aphelinidae) for biological control of sweetpotato whitefly (Homoptera:

Aleyrodidae) on poinsettia.

SO: Environ-Entomol. Lanham, Md. : Entomological Society of America. Apr 1991. v. 20 (2) p. 713-719.

CN: DNAL QL461.E532

AB: Biological control of the sweetpotato whitefly, *Bemisia tabaci* (Gennadius), was undertaken using augmentative releases of the commercially available parasitoid, *Encarsia formosa* Gahan, on commercial poinsettia (*Euphorbia pulcherrima* Wild.) stock plant production. Weekly releases of three to five parasitoids per plant were begun soon after the crop was planted (14 April) and continued until the end of poinsettia cutting production (1 September). The effect of *E. formosa* on the development of *B. tabaci* was significant on 14 and 16 of 21 weekly sampling dates

for adults and immatures, respectively (unpaired t test, $P = 0.05$). In control cages, there were approximately a 10- and 100-fold greater number of adult and immature whitefly populations recorded, respectively, compared with the biological control area. Applications of insecticidal soap were required four times over the 5-mo duration of the trial when the level of whiteflies caught on yellow traps exceeded an a priori threshold level of 10-15 whiteflies per trap. Although a dramatic decrease in the whitefly population was observed in the biological control area, this was not sufficient to prevent whitefly egg deposition on terminal growth, which is the harvestable product. A combination of parasitoid releases, applications of insecticidal soap, and roguing obviously infested cuttings were required to produce export-quality cuttings. The strategy of using biological control in ornamental crop production is discussed in light of these results.

AU: Butler,-G.D.-Jr.; Henneberry,-T.J.

TI: Cottonseed oil and safer **insecticidal soap**: effects on cotton and vegetable pests and **phytotoxicity**.

SO: Southwest-Entomol. College Station, Tex. : Southwestern Entomological Society. Sept 1990. v. 15 (3) p. 257-264.

CN: DNAL QL461.S65

AU: Zinnen,-T.M.; Vachris,-J.W.

TI: Insecticidal soap reduced infection by two mechanically transmitted plant viruses.

SO: Plant-Dis. St. Paul, Minn. : American Phytopathological Society. Mar 1990. v. 74 (3) p. 201-202.

CN: DNAL 1.9-P69P

AU: Gill,-S.

TI: Cleaning up insects with insecticidal soap.

SO: Grounds-Maint. Overland Park, Kan. : Intertec Publishing Corporation. July 1989. v. 24 (7) p. 34, 38. ill.

CN: DNAL SB476.G7

AU: Chase,-A.R.; Osborne,-L.S.

TI: Interaction of Safer's insecticidal soap with some leaf spot diseases of foliage plants.

SO: Foliage-Dig. Apopka : The Foliage Foundation. Jan 1984. v. 7 (1) p. 15-16.

CN: DNAL SB431.F6

AU: Osborne,-L.S.; Pettitt,-F.L.

TI: Insecticidal soap and the predatory mite, phytoseiulus persimilis (Acari: Phytoseiidae), used in management of the twospotted spider mite (Acari: Tetranychidae) on greenhouse grown foliage plants.

SO: J-Econ-Entomol. College Park, Md. : Entomological Society of America. June 1985. v. 78 (3) p. 687-691. ill.

CN: DNAL 421-J822

AU: Osborne,-L.S.; Henley,-R.W.

TI: **Insecticidal soap** evaluated for control of mites [on foliage plants indoors].

SO: South-Florist-Nurseryman. Fort Worth, Tex. : Southern Florist Publishing Company. Sept 24, 1982. v. 95 (27,i.e.28) p. 8, 11.

CN: DNAL 80-SO86

MATERIAL SAFETY DATA SHEET

Revision Date: November 12, 1991

Mycojen Corporation
5451 Oberlin Drive
San Diego, CA 92121
1-800-745-7476

Contact:

M-Pede Insecticide

Insecticidal Soap, Safer Insecticide Concentrate
53219-6
Flammable, Eye Irritant

Common Synonyms:
EPA Registration No.:
Primary Hazards:

1-800-228-5635

Emergency Telephone:

SECTION 1 - MATERIAL IDENTIFICATION

INGREDIENT 1

Common Name: Potassium salts of fatty acids
Chemical Name: Potassium salts of unsaturated and saturated aliphatic carboxylic acids
Molecular Formula: Trade Secret
CAS Number: Trade Secret
Percent: 49%

INGREDIENT 2

Common Name: Ethanol
Chemical Name: Ethyl Alcohol
Molecular Formula: C₂H₆O
CAS Number: 64-17-5
Percent: 30%

SECTION 2 - PHYSICAL DATA

Boiling Point: Not Applicable
Melting Point: Not Applicable
Vapor Pressure: Not Applicable
Specific Gravity: 0.93
Solubility in Water: Highly soluble
pH: 10.3
Appearance: Amber liquid
Odor: Lard-like odor

SECTION 3 FIRE AND EXPLOSION DATA

Flash Point: 33°C
Method: Tag open cup
Extinguishing Media: Water, alcohol foam, dry chemical, or carbon dioxide.
Special Fire Fighting Procedures: This product contains 30% alcohol which contributes to its flammability. Water should be sufficient to dilute the alcohol and extinguish the flame. If difficulty occurs, use an alcohol foam, dry chemical, or CO₂
Unusual Fire and Explosion Hazards: Flammable liquid

SECTION 4 - REACTIVITY

Stability: Stable
Hazardous Polymerization: None Likely
Materials to Avoid: Concentrated mineral supplements (fertilizers), strong oxidizing agents
Hazardous Decomposition Products: Decomposition may produce carbon dioxide

SECTION 5 - HEALTH HAZARD

Primary Route of Entry: Dermal
Exposure Limit: OSHA TLV for Ingredient 2 is 1000 ppm
Corrosivity: Not corrosive
Skin/Eye Irritation: Mildly irritating to skin, irritating to eyes
Sensitization: Not a sensitizer
Effects of Overexposure: Prolonged or repeated exposure may be irritating to skin, eyes, and mucous membranes.

Toxicity: None of the components of this product are listed as carcinogenic by NTP, IARC, or OSHA

Acute Studies:

Oral LD50 (Rat): 16,900 mg/kg (low toxicity)
Dermal LD50 (Rabbit): > 5000 mg/kg (low toxicity)
Inhalation LC50 (Rat): > 0.853 mg/L (low toxicity)

SECTION 6 - FIRST AID

Emergency First Aid Procedures:

If Swallowed: Give demulcent (milk).
If Inhaled: Remove to fresh air.
If In Eyes: Flush eyes with plenty of water. See a physician if irritation persists.
If On Skin: Wash affected area.

SECTION 7 - SPILL, LEAK AND DISPOSAL PROCEDURES

Steps To Be Taken In Case Material Is Released Or Spilled

Do not breath vapor. Do not handle in confined spaces without adequate ventilation. If inadequate use suitable respirator. Avoid contact with skin and eyes.

Contain leaking liquid with sand or other noncombustible material and place in clean container for disposal.

Waste Disposal Method:

Waste, including spills or rinsates, and leftover pesticide that cannot be used according to label instructions must be disposed of according to applicable federal, state, and local procedures.

SECTION 8 - SPECIAL HANDLING

Respiratory Protection:

Ensure good ventilation. Specific respiratory protection should not be necessary.

Protective Gloves:

Recommend wearing impervious gloves when repeated or prolonged exposure is likely.

Eye Protection:

Chemical safety goggles should be worn whenever there is the possibility of splashing or other contact with the eyes.

Although general guidance has been provided, the degree of protection required in a particular situation depends on factors such as concentration and duration. More detailed advice on protective devices is available from Mycogen.

SECTION 9 - SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling And Storing:

- Keep in original container, tightly closed in a safe place.
- Empty container completely and dispose of safely.
- Wash any contamination from skin or eyes immediately.
- Remove any heavily contaminated clothing immediately.
- Wash hands and exposed skin before eating, drinking, or smoking and after working with product.
- Do not use, store, spill or pour near heat or open flame.

Environmental Hazards:

Do not apply to lakes, streams or ponds.

SECTION 10 - SHIPPING REGULATIONS

DOT Shipping Name:

Insecticides or Fungicides, N.O.I., Other Than Poisons.

DOT Hazard Class/I.D. No.:

Ethanol Solutions, UN1170

DOT Label(s):

Flammable liquid

Freight Classification:

NMFC 102120 Class 60

SARA Title III Hazard Classification:

No

Immediate (acute) Health:

No

Delayed (chronic) Health:

Yes

Fire:

No

Sudden Release of Pressure:

No

Reactive:

National Fire Protection Association Rating:

1

Health:

3

Flammability:

0

Reactivity:

This information is provided in good faith but without express or implied warranty.

MYCOGEN CORPORATION

