



OrganiShield

EPA Approved Labels

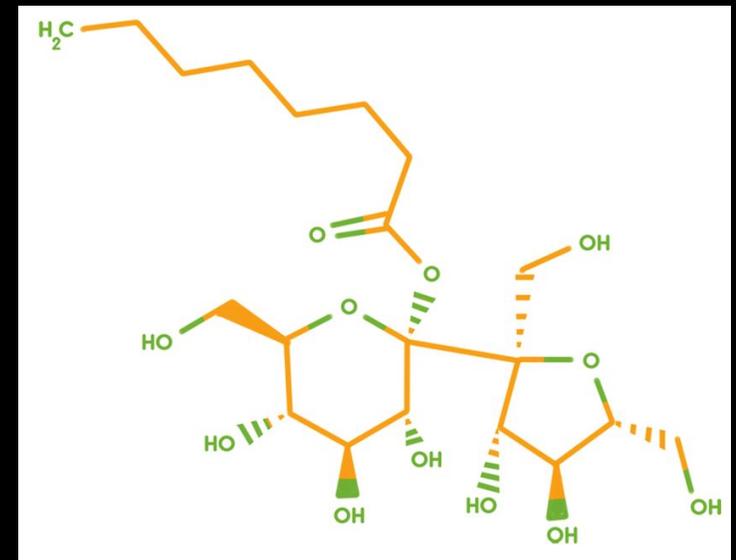
- Biochemical Insecticide/ Miticide for Greenhouse, Nursery, and Field Crop
- Biochemical Insecticide for Mushroom Media Fly/Larvae Control
- Biochemical Miticide for Varroa Mite Control on Honey Bees

Protecting Plants, People, and the Planet!



Active Ingredient:

- *Sucrose Octanoate*
 - Naturally occurring sugar ester molecule discovered in different plant species in the late 90's
 - Actively secreted by plant leaf hairs (trichomes) to ward off pests in nature.
 - Desiccates (dries out) pests on contact.
 - MOA (mode of action) physical kill.
 - Due to its physical MOA pests can Never develop a tolerance.





Sucrose Octanoate Discovery

ECOTOXICOLOGY

Structure-Function Relationships Affecting the Insecticidal and Miticidal Activity of Sugar Esters

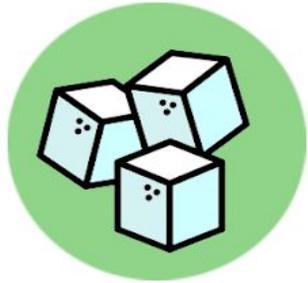
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USDA-ARS, Appalachian Fruit Research Station, 45 Wiltshire Road, Kearneysville, WV 25430

J. Econ. Entomol. 96(3): 636-644 (2003)



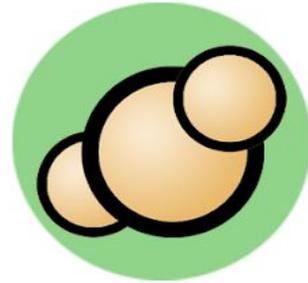
100% Biodegradable



Sugar



Water



Fatty
Acids

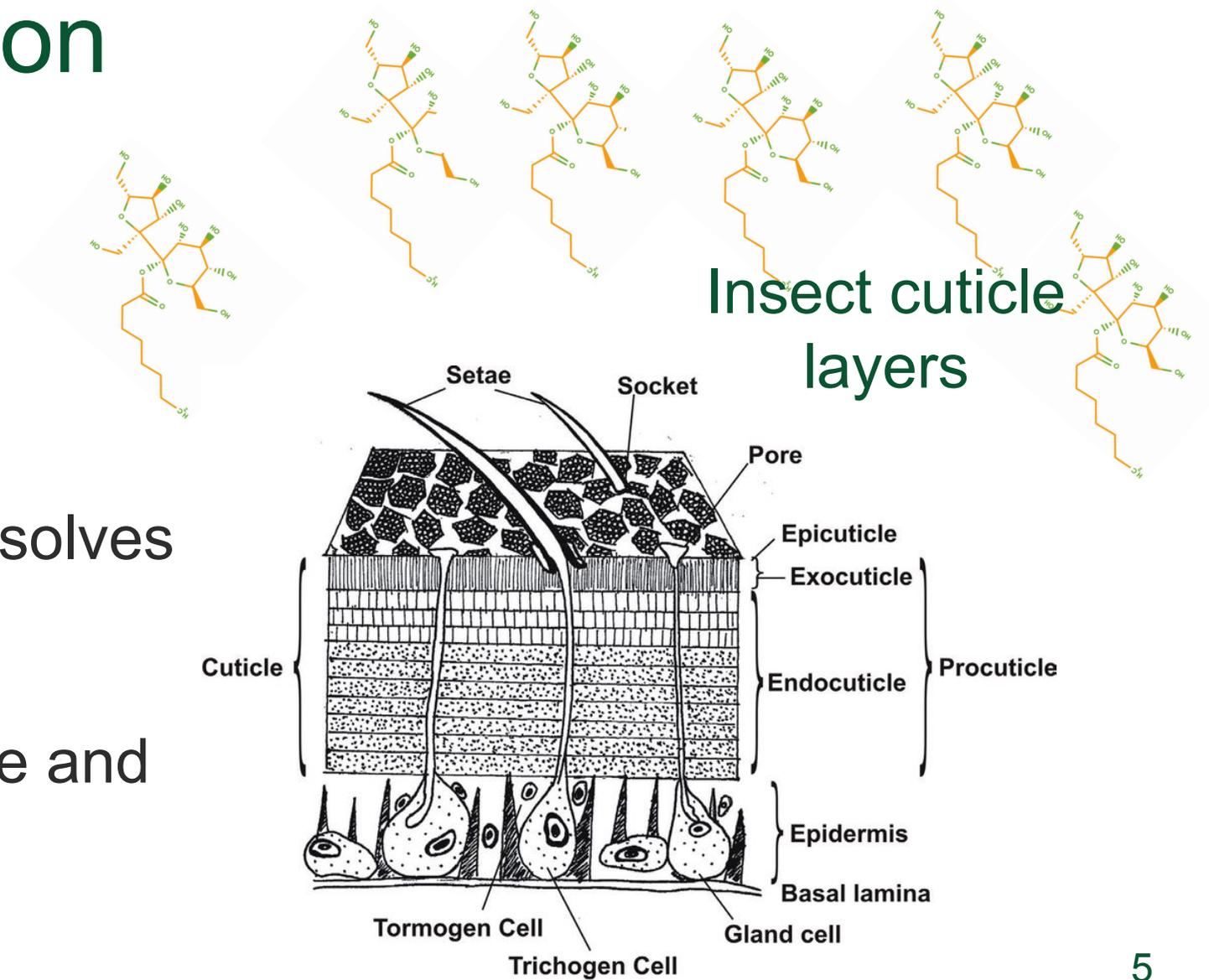


Sucrose Octanoate Safety Profile

- FDA: 21 CFR §172.859 grants sucrose fatty acid esters conforming to the specification stated therein approval for use as emulsifiers in certain foods and as coatings for use on certain fruits.
- 21CFR§184.1025 lists caprylic (octanoic) acid as a substance added directly to human food affirmed as generally recognized as safe (GRAS).
- All three solvents used in the Sucrose Octanoate Esters manufacturing process - ethanol, butanol and DMSO - appear on the FDA list of Class 3 solvents.
- EPA concluded that Sucrose Octanoate Esters has extremely low toxicity and is not likely to cause toxic effects to birds, fish, and aquatic invertebrates when the product is used according to the label directions.

Mode of Action

1. Organishield dissolves insect cuticle.
2. Insects desiccate and die.



Greenhouse, Nursery, Field Crop Pests Controlled



Two spotted spider mite



Cyclamen mite



Broad mite

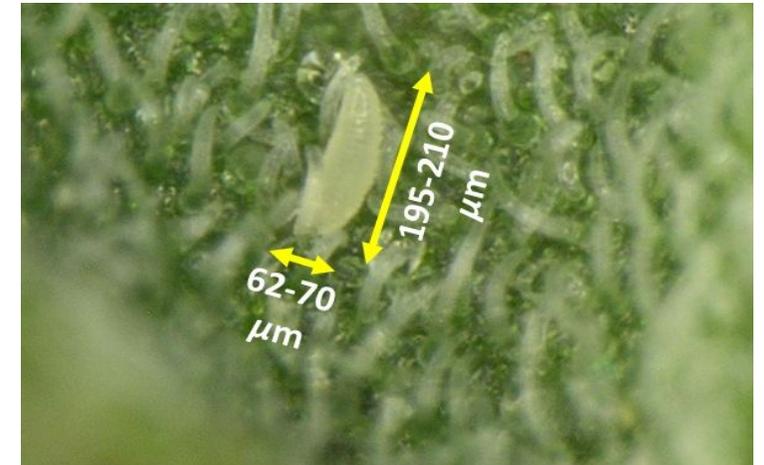


Tomato russet mite

Levels of control:

- .08% conc. >90% mortality
- 1.0% conc. >99% mortality

“good coverage is the key to efficacy”



Hemp russet mite

Greenhouse, Nursery, Field Crop Pests Controlled



Brown Citrus Aphids

Levels of control:

- 1.0% conc. 60 to 70%
- 2.0% conc. 95%

<https://www.ars.usda.gov/research/publications/publication/?seqNo115=158080>



Thrips

Levels of control:

Anecdotal eval. conducted on the Western Flower Thrip.

- 1.0% conc. 60-70% mortality
- 2.0% conc. 85% mortality
- 2.5% conc. 90% mortality



Whiteflies

Levels of control:

- nymph and adult whitefly controlled at application rates $\leq 1\%$

<https://bioone.org/journals/journal-of-economic-entomology/volume-98/issue-4/0022-0493-98.4.1242/Toxicity-of-Sucrose-Octanoate-to-Egg-Nymphal-and-Adult-Bemisia/10.1603/0022-0493-98.4.1242.short>

Greenhouse, Nursery, Field Crop Pests Controlled



Mealy bug

Levels of control:

- 0.8% conc. 3mth post
92% mortality
- 1.0% conc. 3mth post
99% mortality

<https://www.ams.usda.gov/sites/default/files/media/Sucrose%20amendment%201.pdf>



Psyllid

Levels of control:

- 1-2% conc. >90% mortality

<https://swfrec.ifas.ufl.edu/hlb/database/pdf/00001194.pdf>



Adelgid

Levels of control:

- Anecdotal eval. similar to mealy bug and Asian scale bug effectiveness and control.

https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=2854&context=extension_curall

Greenhouse, Nursery, Field Crop Pests Controlled



Armyworm

Levels of control:

Anecdotal eval. conducted in Uganda (East Africa) among Sorghum.

- 1.0% conc. >50% mortality
- 2.0% conc. >75% mortality
- 2.5% conc. >99% mortality



Gypsy Moth Caterpillar

Levels of control:

Anecdotal eval.

- 0.8% conc. 100% mortality

Greenhouse, Nursery, Field Crop Pests Controlled



Glassy-winged sharpshooter

Levels of control:

- 1.0% conc. 89.0% kill rate
- 1.2% conc. 98.0% kill rate
- 1.5% conc. 98.0% kill rate

https://static.cdfa.ca.gov/PiercesDisease/proceedings/2002/2002_146-148.pdf



Asian scale

Levels of control:

Anecdotal eval. conducted on the Sago palm in Jamaica.

- 2.0% conc. 100% mortality



Mushroom Fly/ Larvae Control

Flies controlled:

- Phorid Adult Fly and Larvae
- Sciarid Adult Fly and Larvae

Level of control: >90%



Honeybee Varroa Mite Control

Level of control: >93%

Approved USDA organic Livestock
/parasitic use.

OMRI certified





New Labels in Development...

- Fungicides to control destructive molds and funguses
 - Pre-evaluation indicates effectiveness against molds and funguses
- Living soil repair and improvement – enhancing the soils health and biome for optimized plant growth and yield.
 - Initial studies show positive results in the enhancement of soil health and the elimination of pathogens without damage to the soil biome.





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