



# **WHY USE BIOPESTICIDES IN AN IPM PROGRAM?**

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# DO BIOPESTICIDES WORK OR ARE THEY JUST SNAKE OILS?



Products do fail.....  
Excerpts from biopesticide reports

- Phytophthora following \_\_\_\_\_ and \_\_\_\_\_ treatment were not different than the untreated control.
- Botrytis infection was similar to the control when treated with \_\_\_\_\_ or \_\_\_\_\_.
- \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ did not control blueberry midge

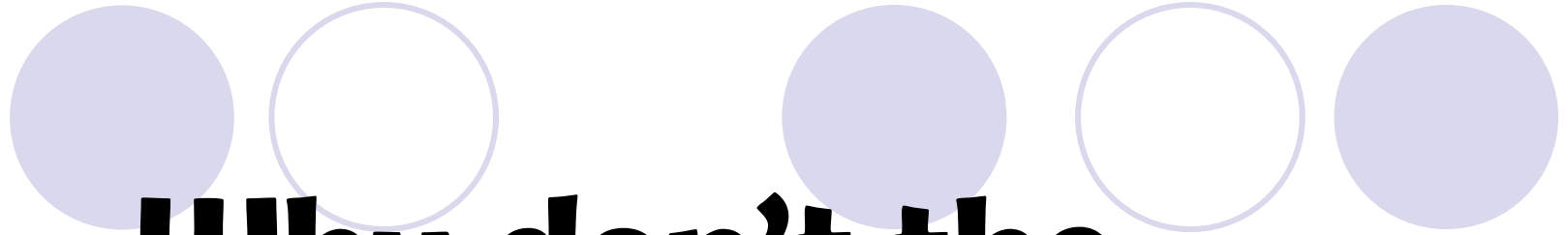
Can you guess the product names-Fill in the blanks?



# Products Do Fail.....

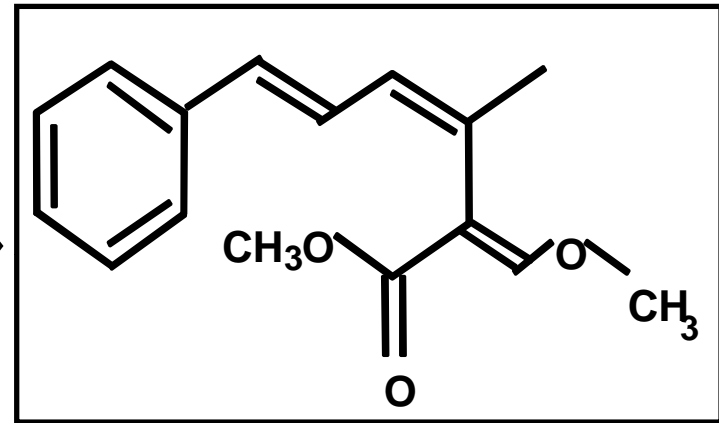
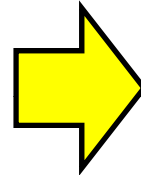
- Phytophthora following **Subdue** and **Truban** treatment were not different than the untreated control.
- Botrytis infection was similar to the control when treated with **Daconil** or **Insignia**.
- **Malathion, Thiamethoxam, Spinosad** did not control blueberry midge.

The point is that all products have variable performance.



**Why don't the  
major  
companies work  
with Natural  
products?**

# Major companies work with natural products- Natural leads



**Strobilurin A**

## ***Strobilurus tenacellus***

Wow. All of the newer strobilurin fungicides are based on a mushroom!



# GROWER CONCERNS ABOUT BIOPESTICIDES

DOES IT WORK?

HOW MUCH DOES IT COST?

DOES IT WORK?

*Maybe the real question is.....* **DO WE  
KNOW HOW TO MAKE THEM WORK?**

# DO WE KNOW HOW TO MAKE BIOPESTICIDES WORK?

**FACT:** Biopesticides work best in rotational programs.

If you test them as head to head comparisons versus conventional products, most may not perform as well as conventional products. This is misinterpreted as they are not useful.

**ACTION:** If you run field trials try biopesticides in rotational programs.

**It's not Conventional versus Biopesticide.**

**It's Biopesticides and Conventionals**

How should I interpret results? *The glass is half **empty**.* Hypothetical data

- Conventional alone - 83% a
- Conv-Biopest rotation - 79% a
- Control - 0% b

There was no advantage to rotating the conventional treatment with a biopesticide

# How should I interpret results? *The glass is half full*

- Conventional alone - 83% a
- Conv-Biopest rotation - 79% a
- Control - 0% b

The level of control was maintained while gaining the following:

- **Resistance management—Conventional weak-resistance prone**
- **Re-entry period- Flexibility labor intensive operations**
- **Reduced time to harvest- Multiple harvest**
- **Residue management- Don't produce illegitimate fruit!**

**Rotations/integrations are delivery mechanisms for biopesticides in that they enable their utility-Are delivery mechanisms important to biopesticide adoption?**

**Can delivery mechanisms revolutionize grower adoption?**

# **WHY USE BIOPESTICIDES?**

- 1. Resistance management**
- 2. Re-entry period**
- 3. Reduced time to harvest**
- 4. Residue management**