

A photograph of an organic orchard. The image shows rows of trees with lush green foliage, creating a perspective that leads the eye down a central path. The ground is covered in grass and some small yellow flowers. The lighting is bright, suggesting a sunny day.

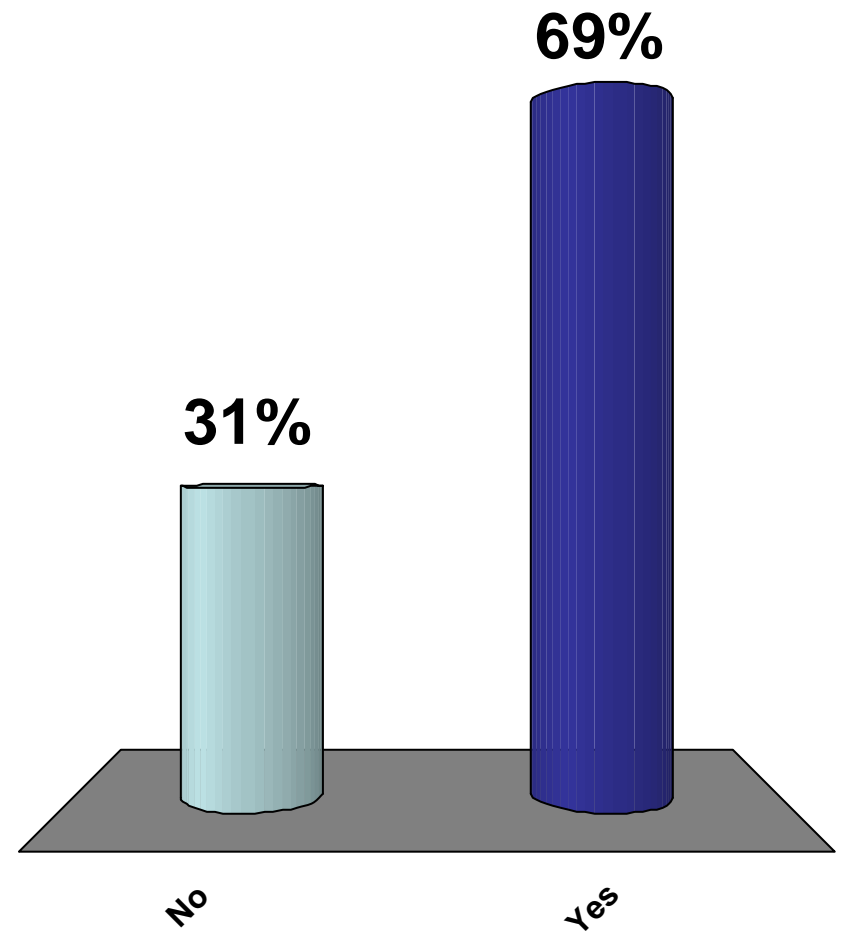
*Organic orchards:
needs and priorities*

**David Granatstein, WSU CSANR
Aaron Avila, GS Long Co.
Nadine Lehrer, WSU TFREC
Elizabeth Beers, WSU TFREC**

The data presented here were collected from growers attending the G.S. Long organic grower meeting on Jan. 13, 2010, in Yakima, WA. Each person was able to response to the questions using the Turning Point technology, a real time audience participation system. There were about 70 respondents to the questions.

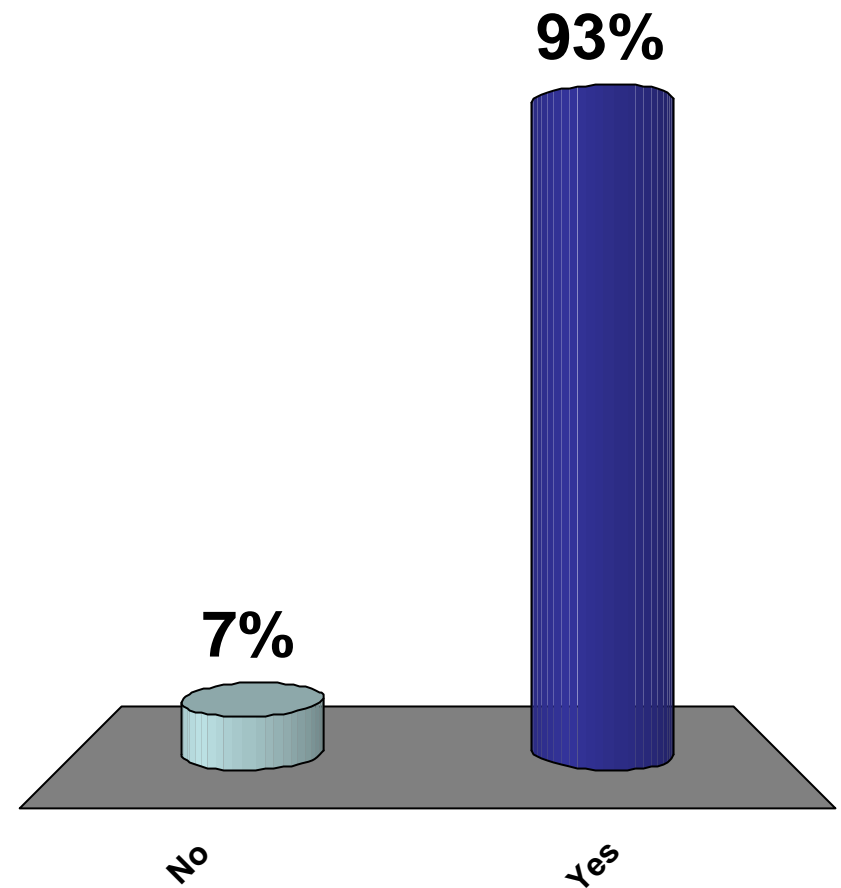
Did you have a good holiday?

1. No
2. Yes



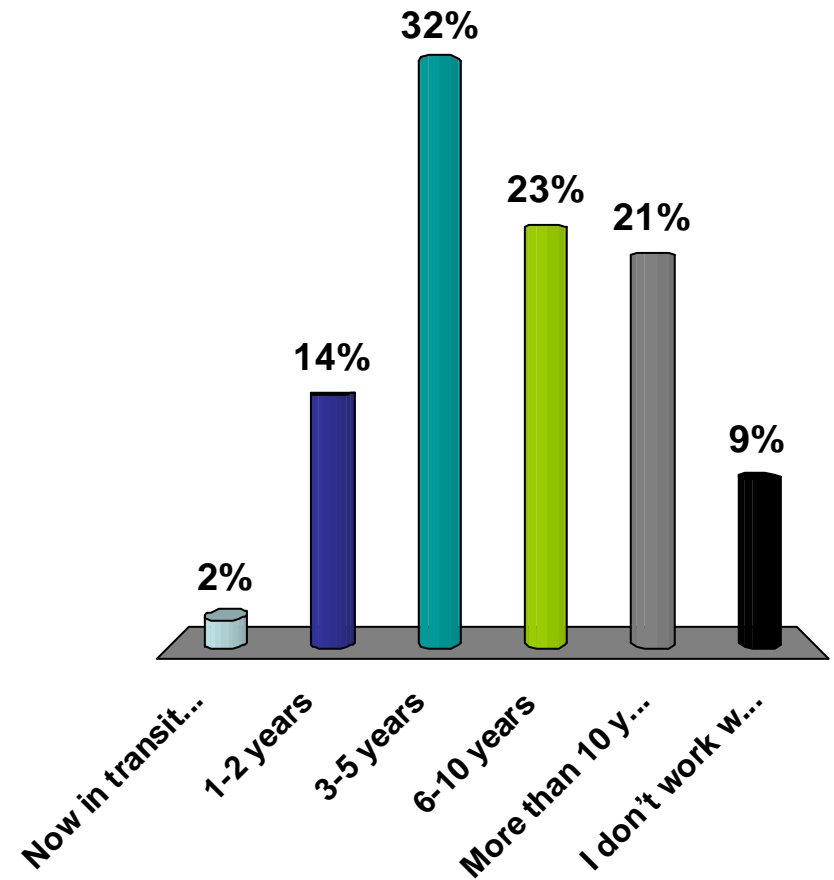
Do you work with organic orchards?

1. No
2. Yes



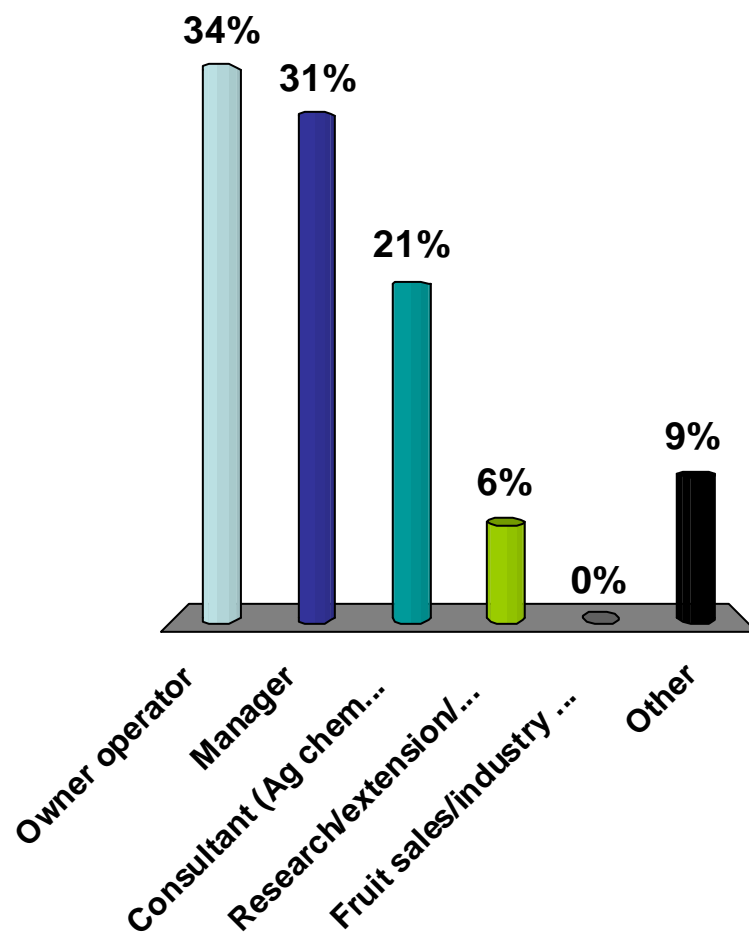
How long have you been in organic orcharding?

1. Now in transition
2. 1-2 years
3. 3-5 years
4. 6-10 years
5. More than 10 years
6. I don't work with organic orchards



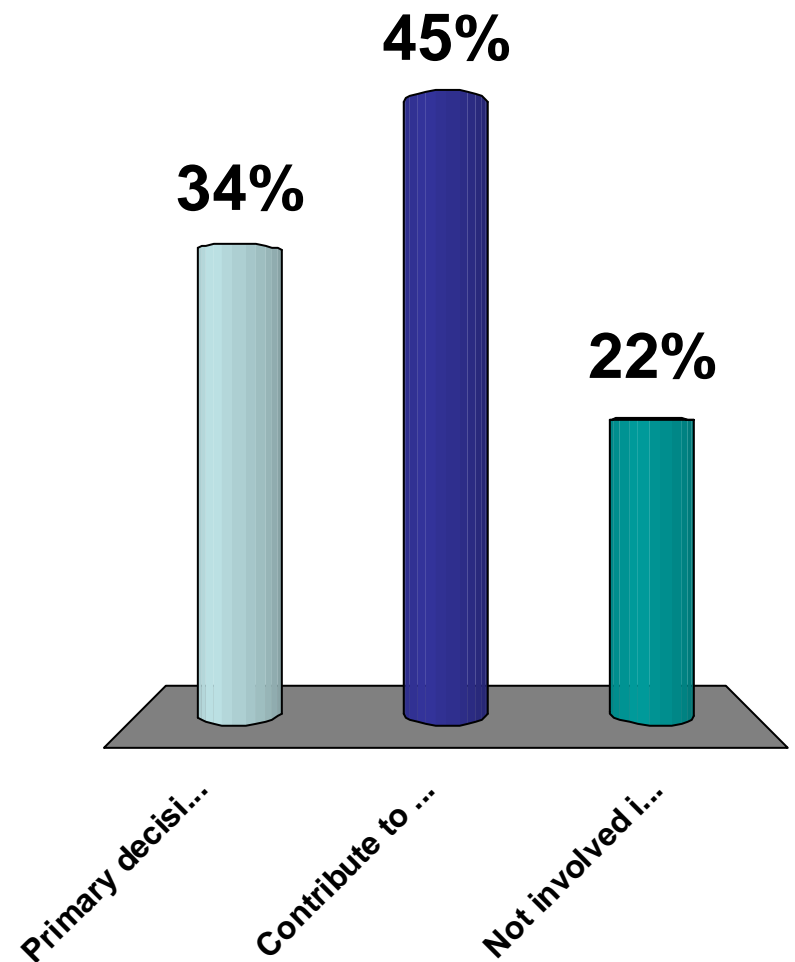
What is your primary role in organic orcharding?

1. Owner operator
2. Manager
3. Consultant (Ag chem, warehouse, private)
4. Research/extension/government
5. Fruit sales/industry support
6. Other



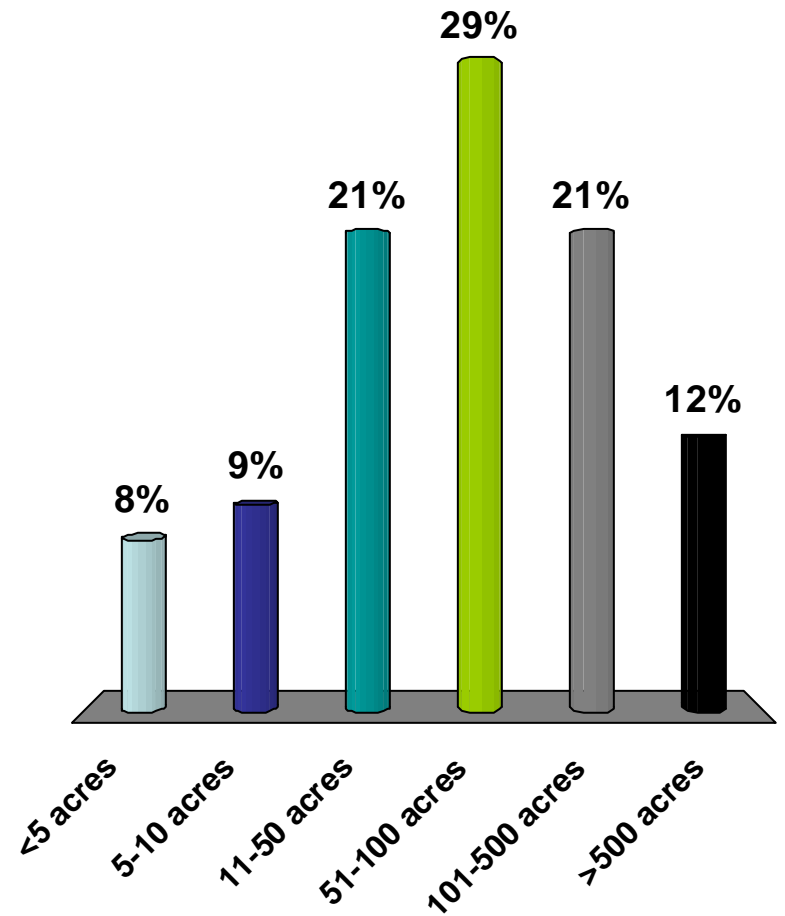
What is your role in making pest management decisions?

1. Primary decision maker
2. Contribute to decision making
3. Not involved in decision making



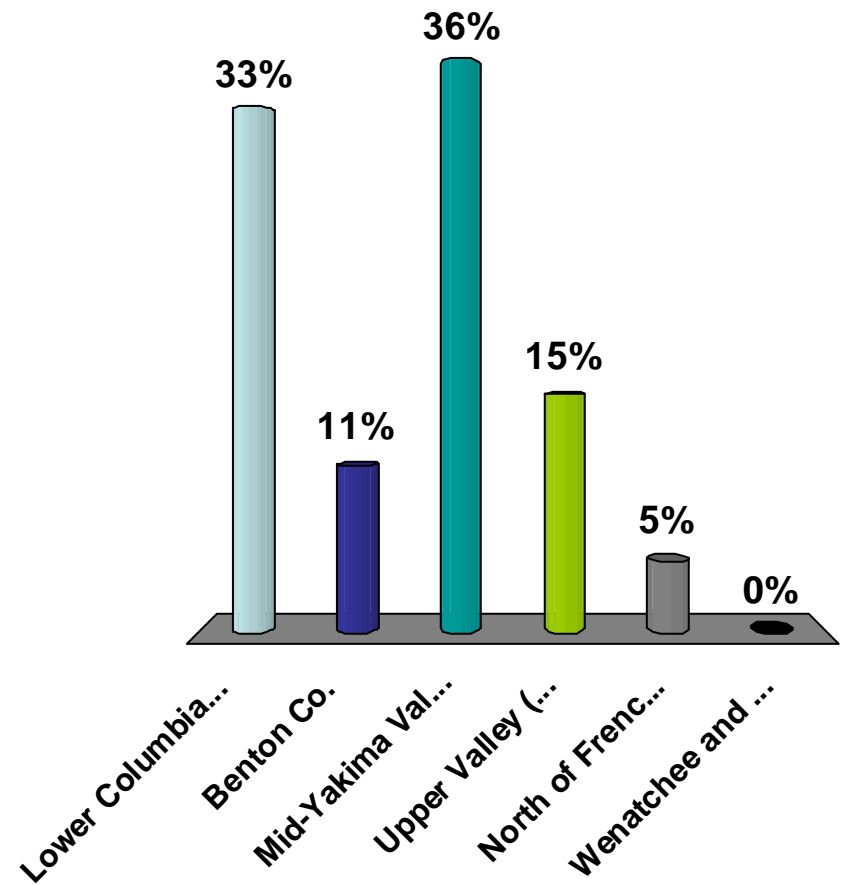
How many acres of organic orchard do you work with?

1. <5 acres
2. 5-10 acres
3. 11-50 acres
4. 51-100 acres
5. 101-500 acres
6. >500 acres



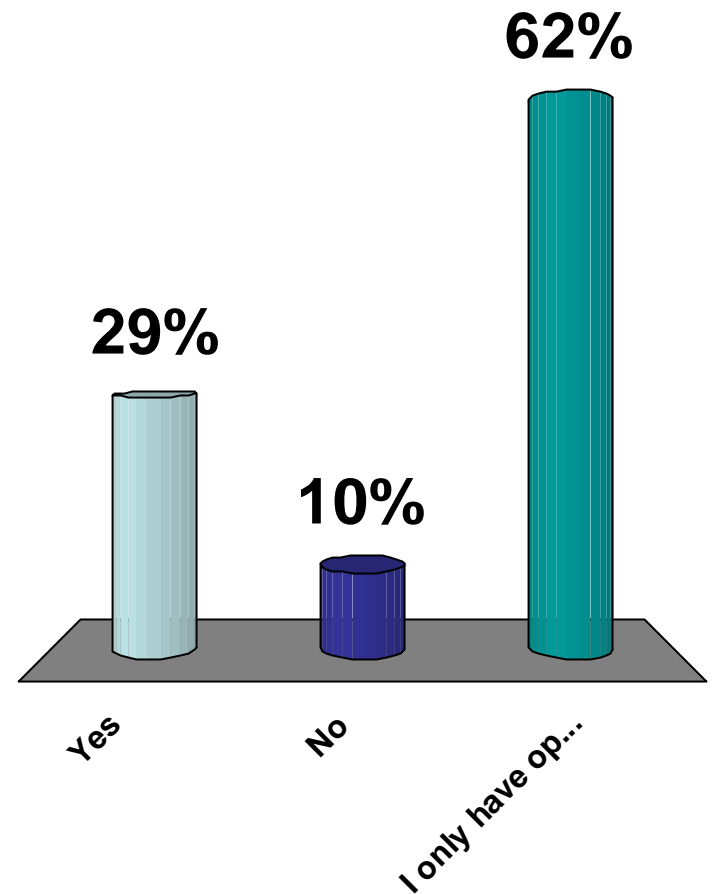
What region best describes the majority of your organic orchards?

1. Lower Columbia Basin
2. Benton Co.
3. Mid-Yakima Valley
(Sunnyside to Union Gap)
4. Upper Valley (above Union Gap)
5. North of Frenchman Hills/Quincy
6. Wenatchee and north



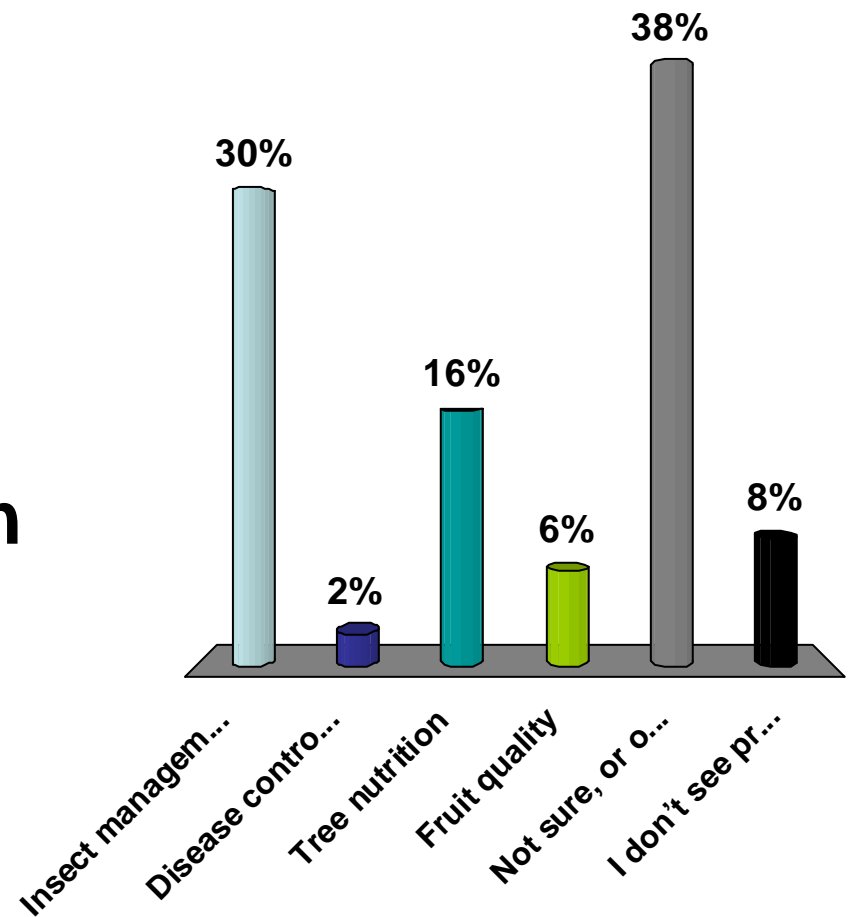
For those with operations in more than one region, do you find organic production **more challenging** in one area than another?

1. Yes
2. No
3. I only have operations in one region



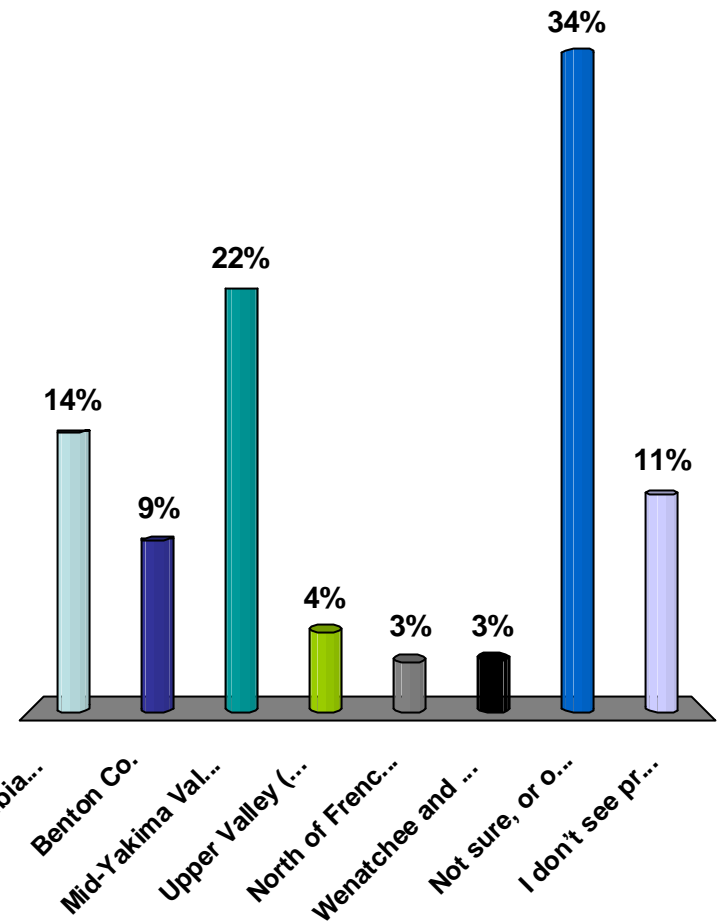
What is the **main factor** that makes production more challenging in one area over another?

1. Insect management
2. Disease control
3. Tree nutrition
4. Fruit quality
5. Not sure, or only have operations in one region
6. I don't see production challenges varying by region



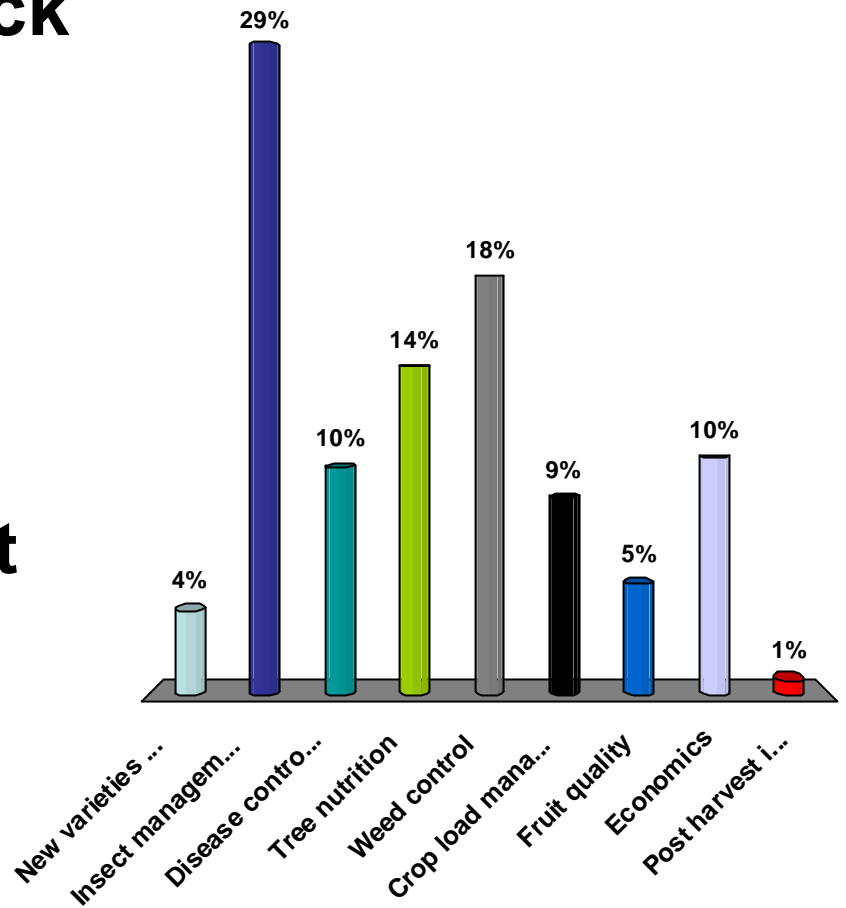
Rank growing regions from **most difficult** (first choice) to **least difficult** for those that apply to you.

1. Lower Columbia Basin
2. Benton Co.
3. Mid-Yakima Valley (Sunnyside to Union Gap)
4. Upper Valley (above Union Gap)
5. North of Frenchman Hills/Quincy
6. Wenatchee and north
7. Not sure, or only have operations in one region
8. I don't see production challenges varying by region



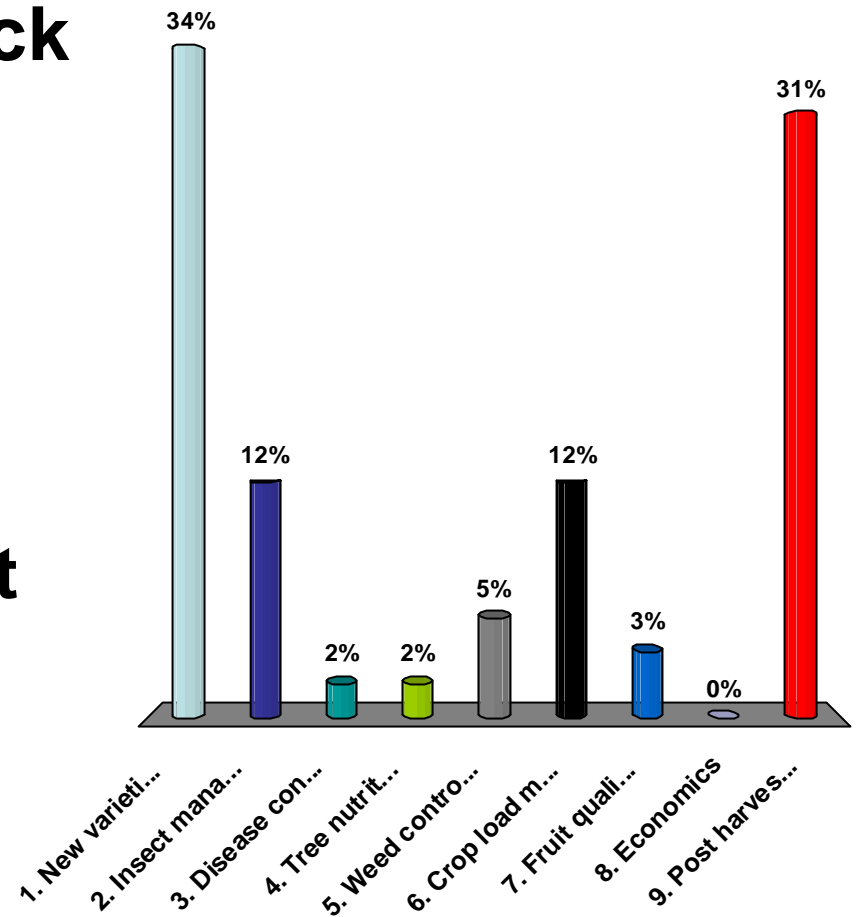
What are the **3 most serious problems** you face in organic tree fruit production? (rank from most to least)

1. New varieties / rootstock
2. Insect management
3. Disease control
4. Tree nutrition
5. Weed control
6. Crop load management
7. Fruit quality
8. Economics
9. Post harvest issues



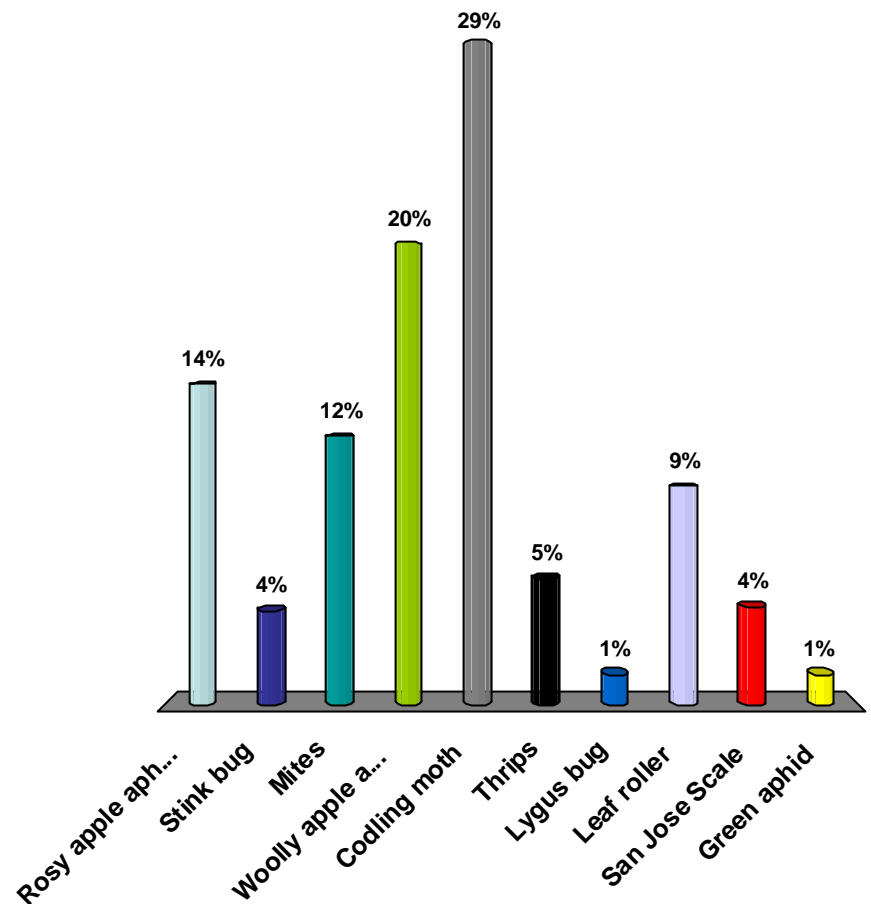
Which is the **least** of a problem for organic production ?

1. New varieties / rootstock
2. Insect management
3. Disease control
4. Tree nutrition
5. Weed control
6. Crop load management
7. Fruit quality
8. Economics
9. Post harvest issues



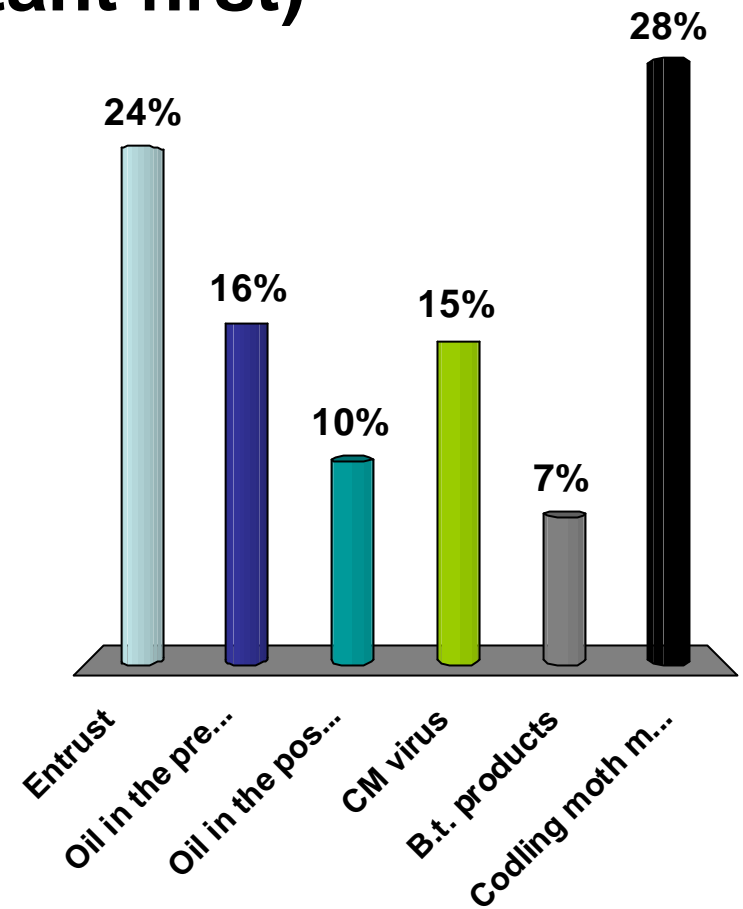
Rank the **3 most** difficult insect pest to control in organic apple production (with the worst first).

1. Rosy apple aphid
2. Stink bug
3. Mites
4. Woolly apple aphid
5. Codling moth
6. Thrips
7. Lygus bug
8. Leaf roller
9. San Jose Scale
10. Green aphid



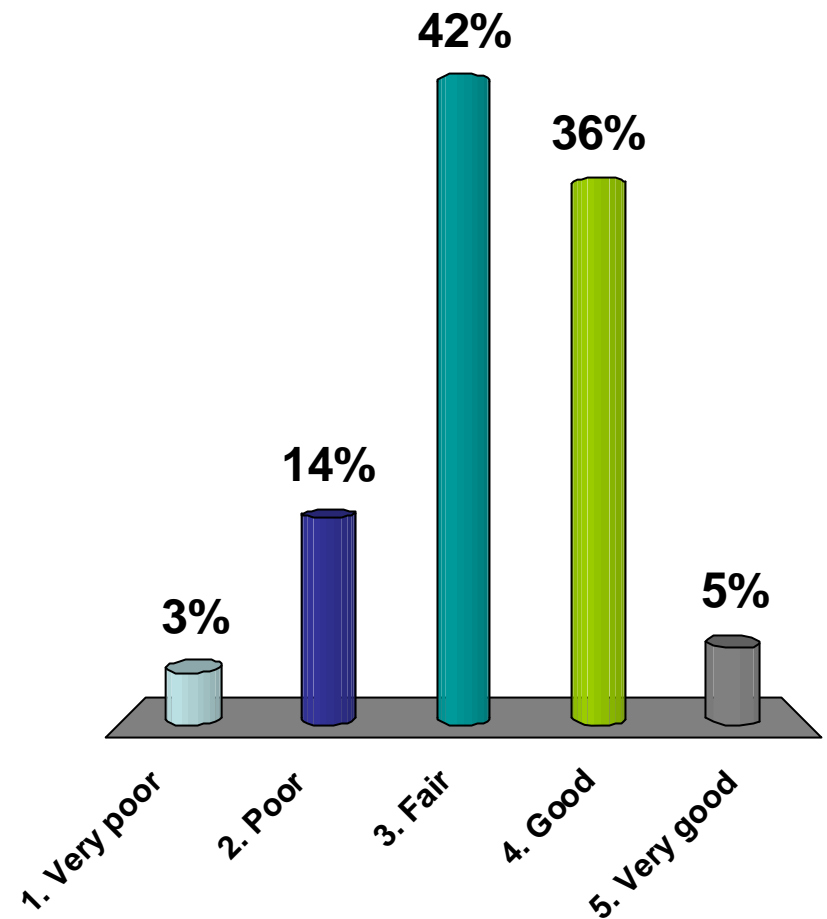
Which of these **products** did you use or recommend in 2009 for codling moth / leaf roller / other caterpillars? (select all that apply, starting with the most important first)

1. Entrust
2. Oil in the pre-bloom period
3. Oil in the post-bloom period
4. CM virus
5. B.t. products
6. Codling moth mating disruption



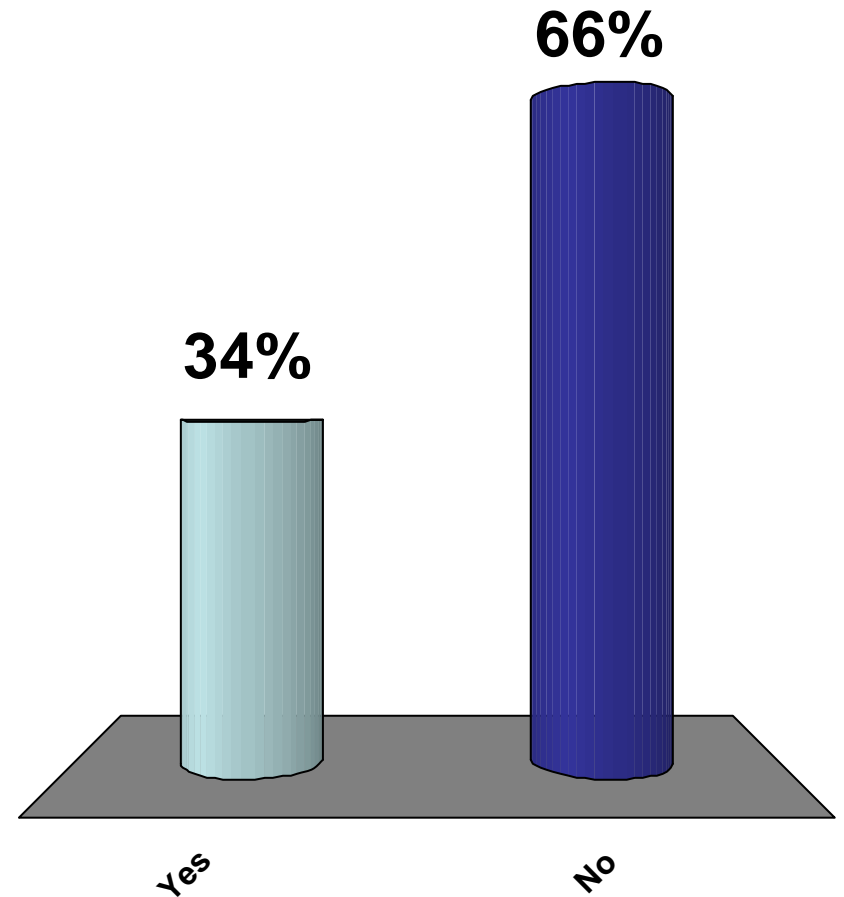
Rate the ability of existing tools to control codling moth in an organic orchard.

1. Very poor
2. Poor
3. Fair
4. Good
5. Very good



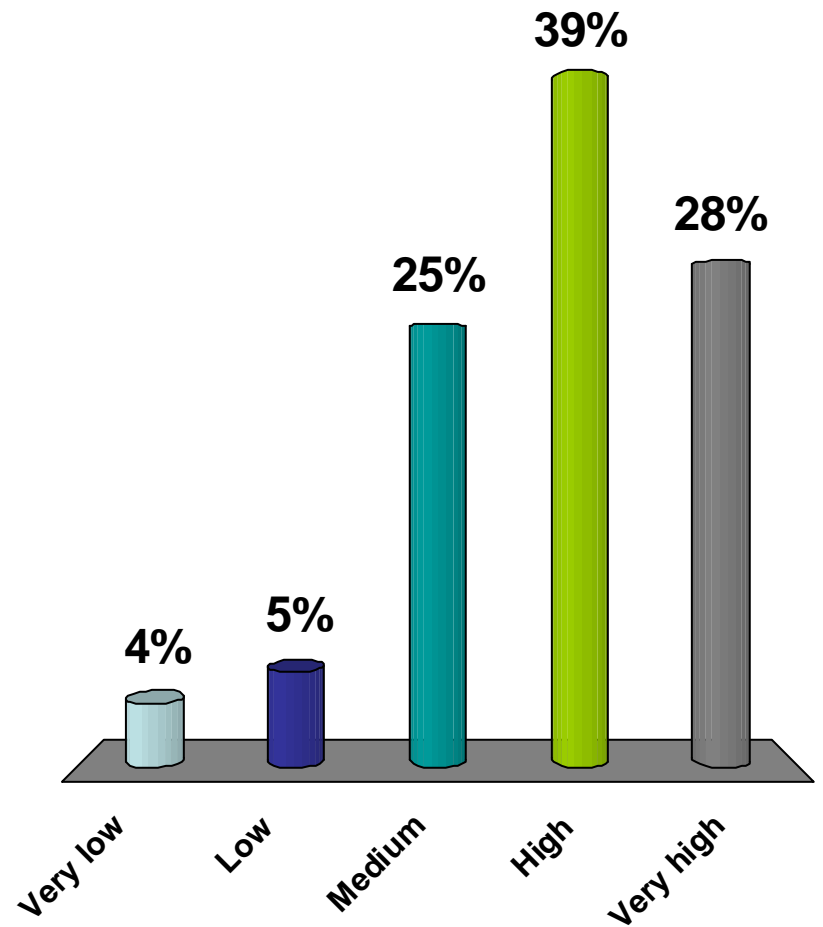
Did codling moth cause unacceptable damage in organic apple orchards that you own, manage, or consult on in 2009?

1. Yes
2. No



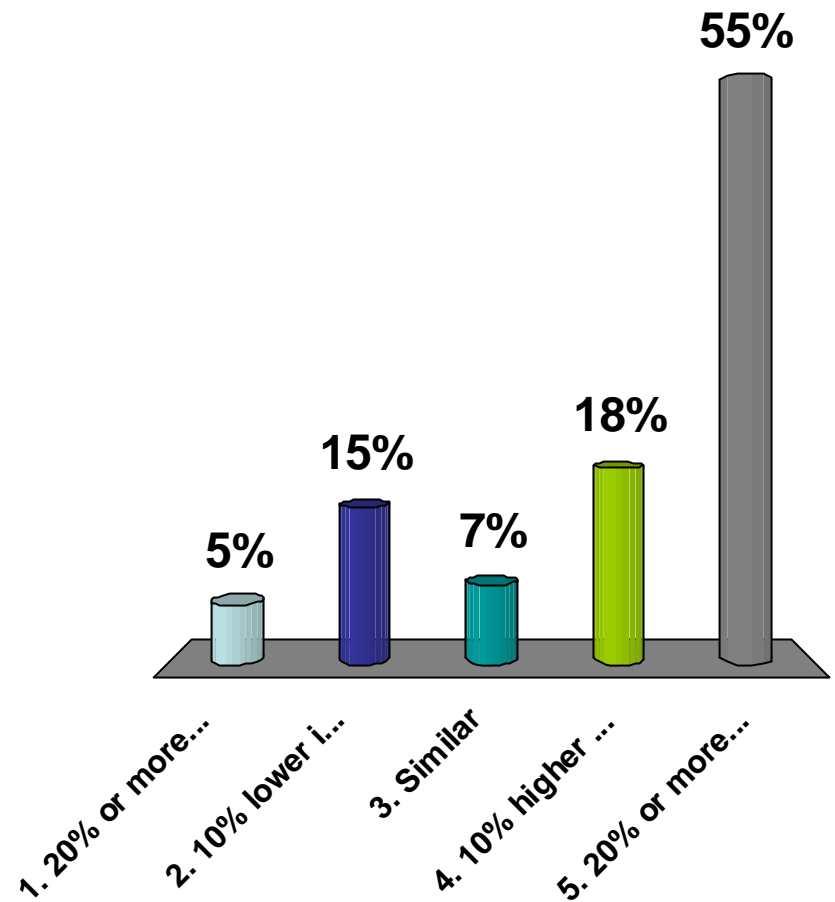
Rate the need for additional coding moth control tools for organics.

1. Very low
2. Low
3. Medium
4. High
5. Very high



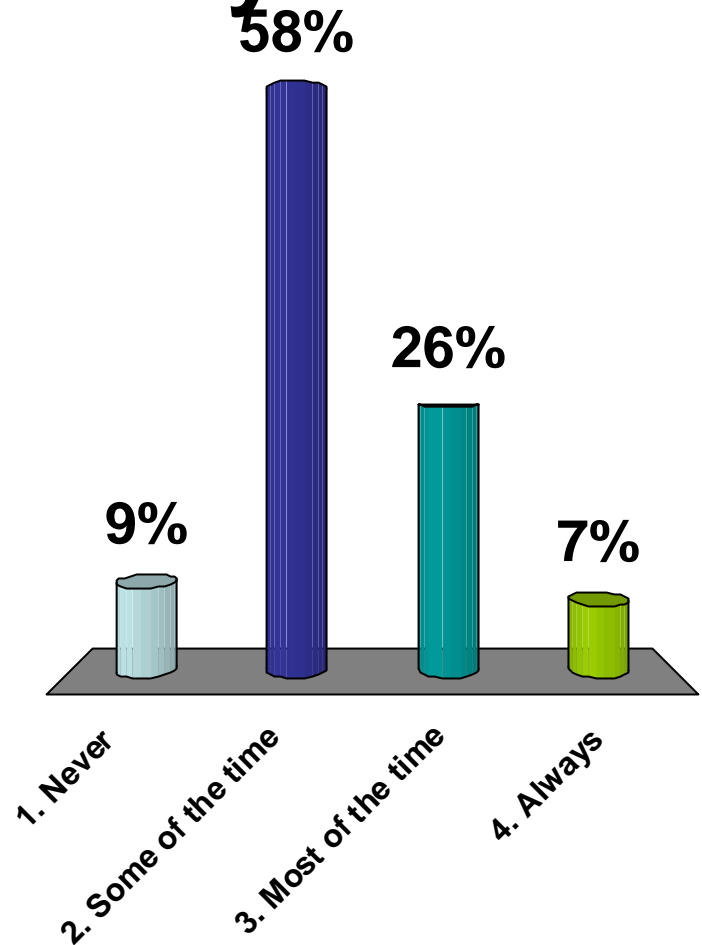
How would you compare the **cost of production** for organic tree fruit to similar conventional production?

1. 20% or more lower in organic
2. 10% lower in organic
3. Similar
4. 10% higher in organic
5. 20% or more higher in organic



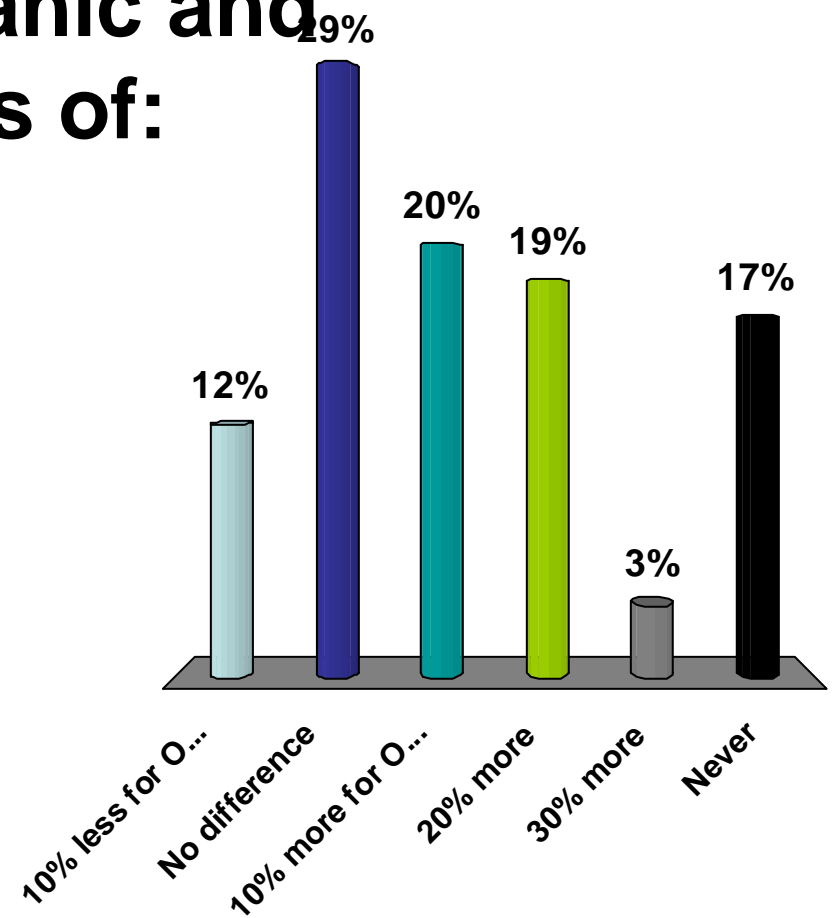
Do the returns from organic production offset the added costs of growing fruit organically?

1. Never
2. Some of the time
3. Most of the time
4. Always



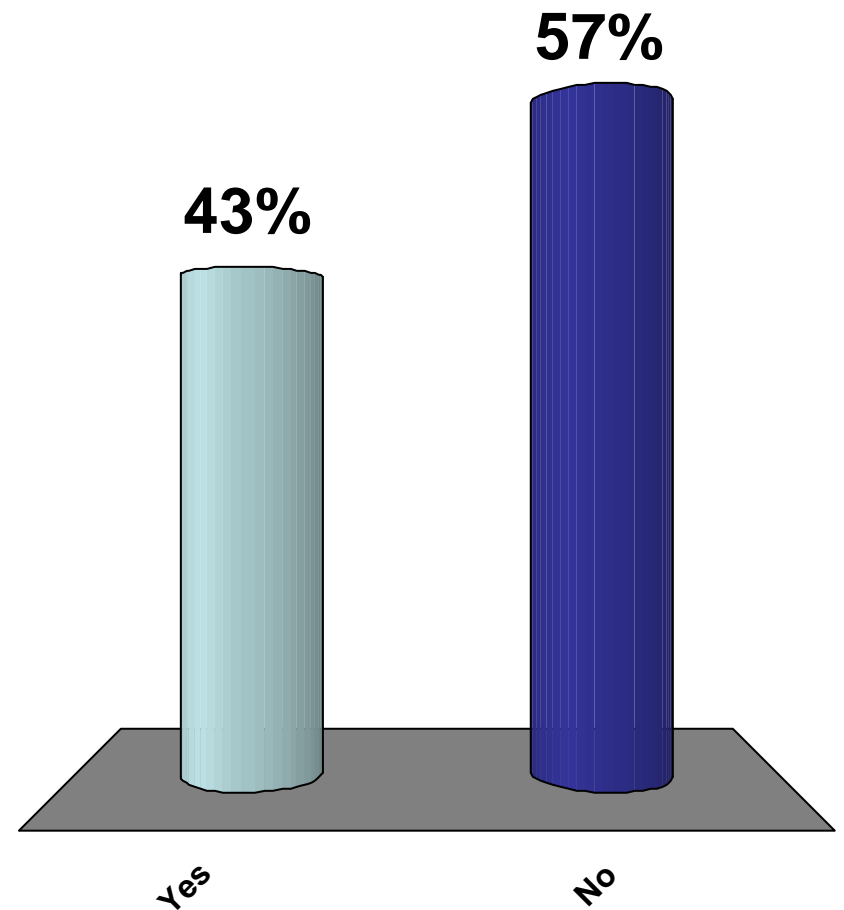
At what point would you consider switching back to conventional production – minimum difference between Organic and Conventional bin returns of:

- 1. 10% less for Org.**
- 2. No difference**
- 3. 10% more for Org.**
- 4. 20% more**
- 5. 30% more**
- 6. Never**



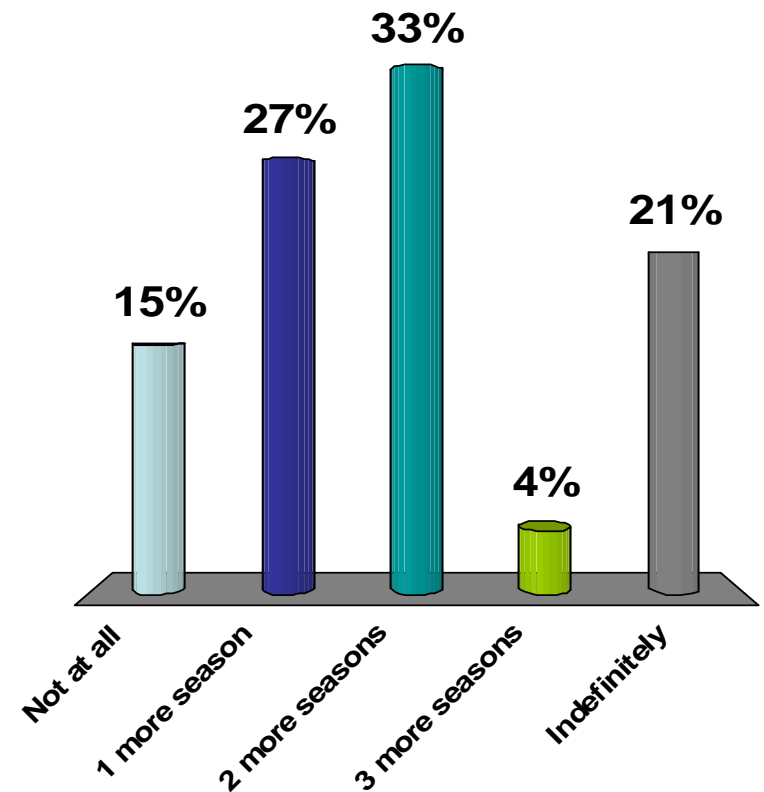
Was organic fruit production profitable for you for the 2008 crop?

1. Yes
2. No



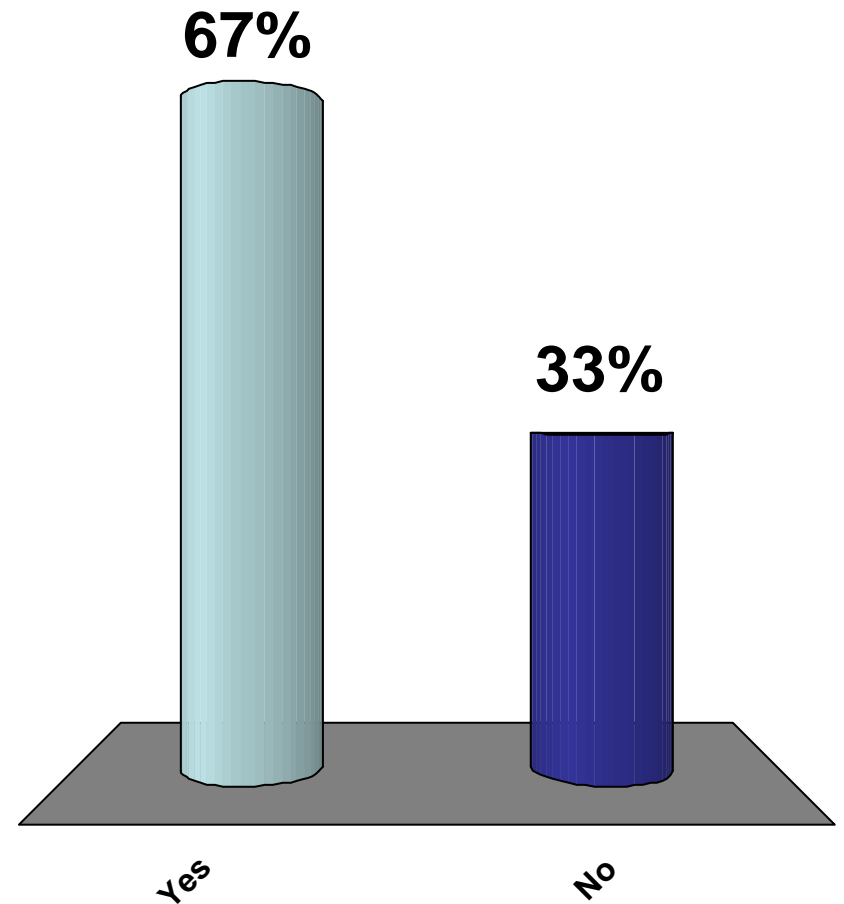
If organic premiums did not cover the increased costs, how long would you be willing to stay with organic production, given the 3 year transition to re-enter?

- 1. Not at all**
- 2. 1 more season**
- 3. 2 more seasons**
- 4. 3 more seasons**
- 5. Indefinitely**



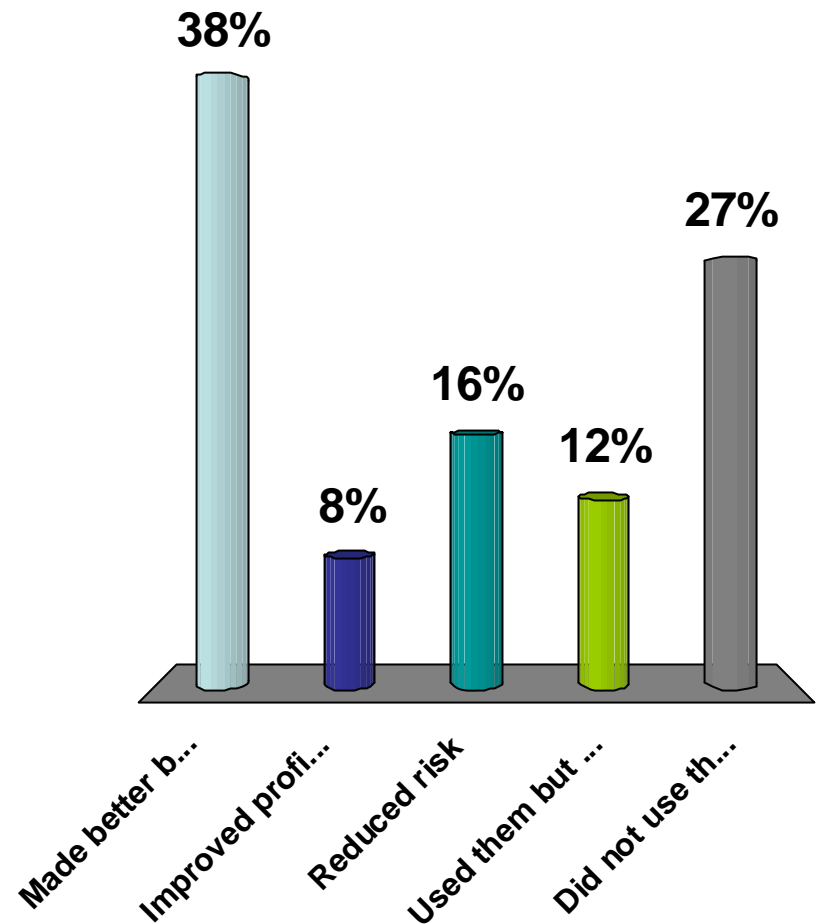
Do you use the organic tree fruit trends statistics that are generated by WSU each year?

1. Yes
2. No



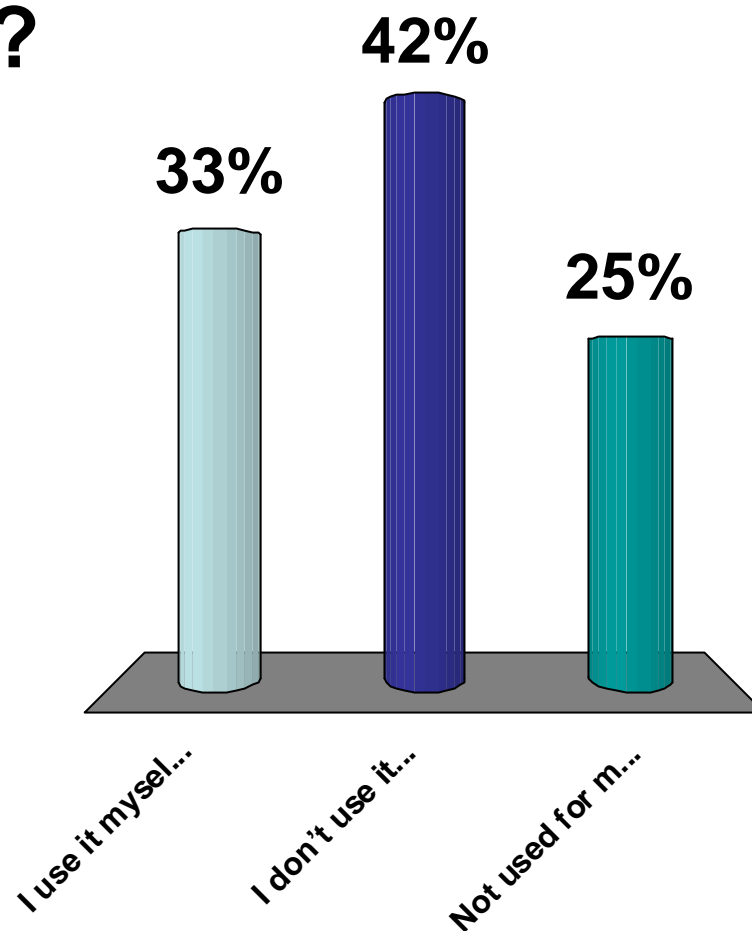
How have the organic tree fruit stats helped you? Select those that apply, in order of most important to least important.

- 1. Made better business decisions**
- 2. Improved profitability**
- 3. Reduced risk**
- 4. Used them but were not helpful**
- 5. Did not use them**



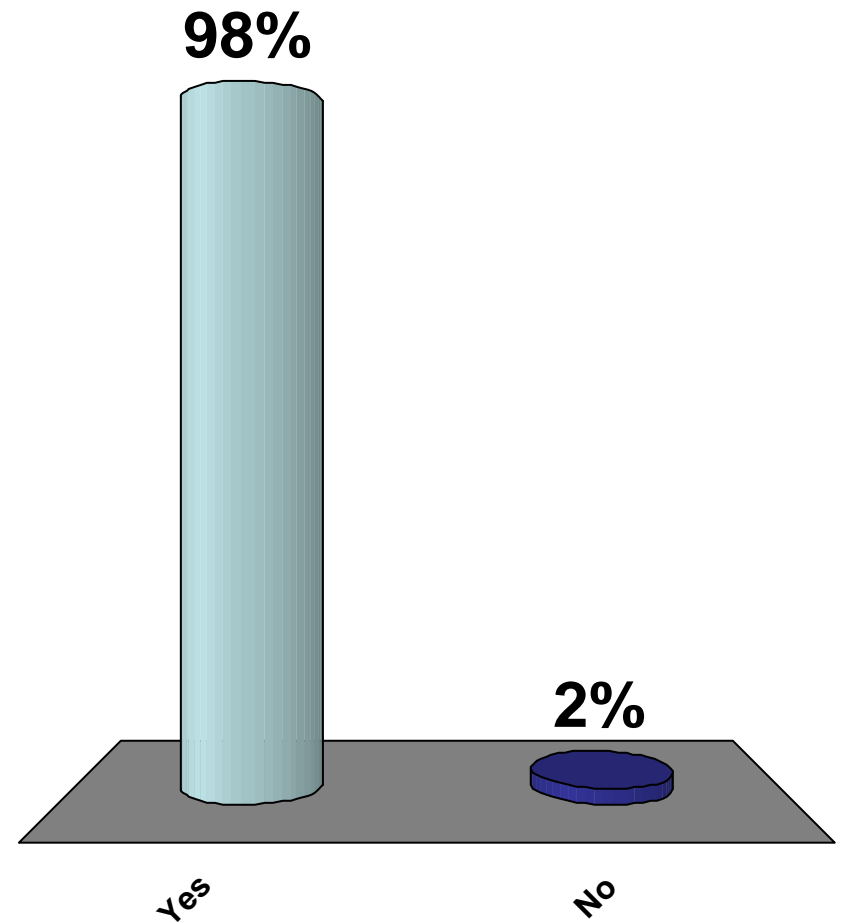
Did you use the WSU **Decision Aid System (DAS)** in 2009 to help time IPM activities (sampling, spraying, etc.) in your organic orchards?

1. I use it myself
2. I don't use it myself, but my consultant does
3. Not used for my organic orchards



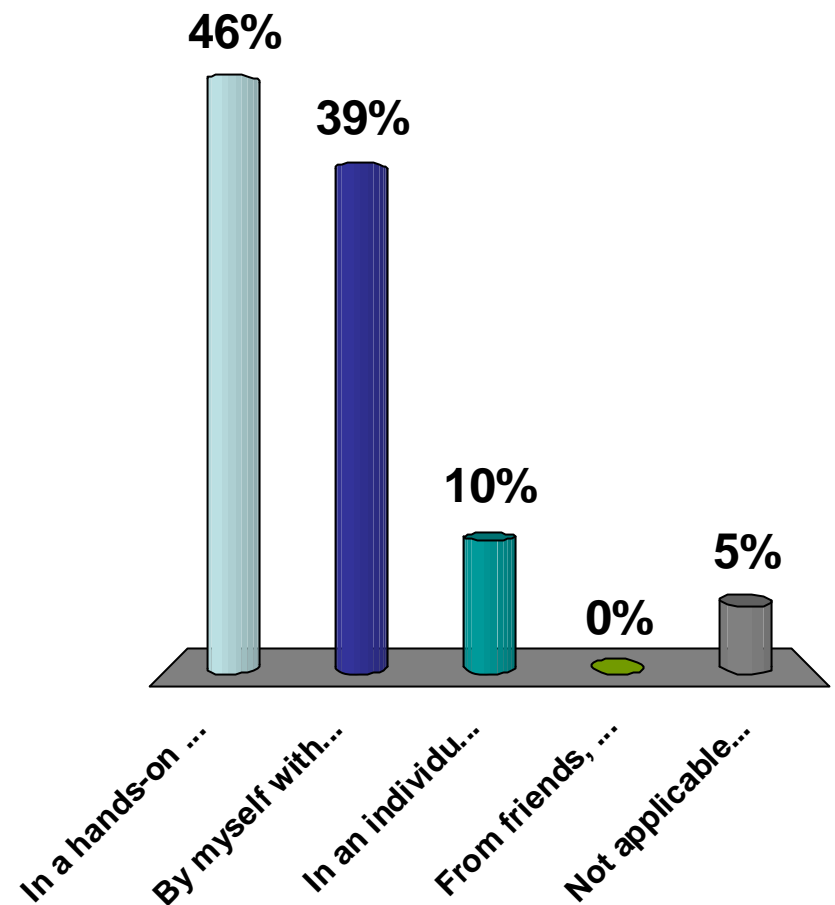
Would you like to learn more about how to use DAS?

1. Yes
2. No



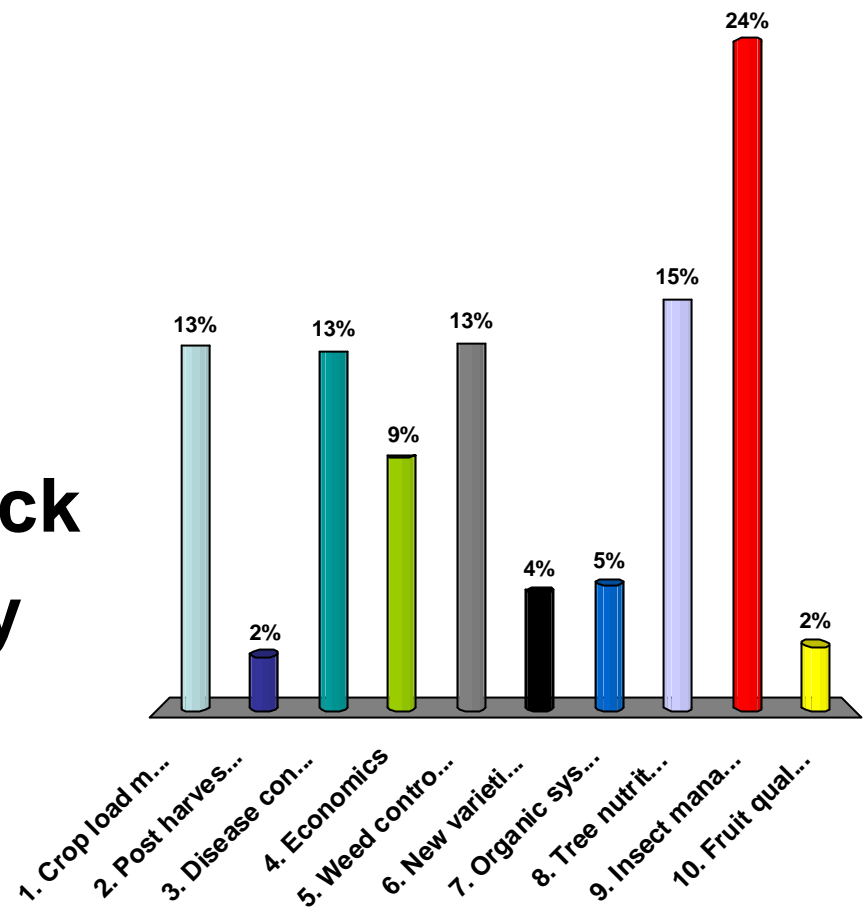
If yes, what would be the best learning situation for you?

1. In a hands-on workshop in small groups
2. By myself with the video tutorials and DAS manual offered online in the DAS help center
3. In an individual lesson with a WSU Extension educator
4. From friends, family, or colleagues
5. Not applicable



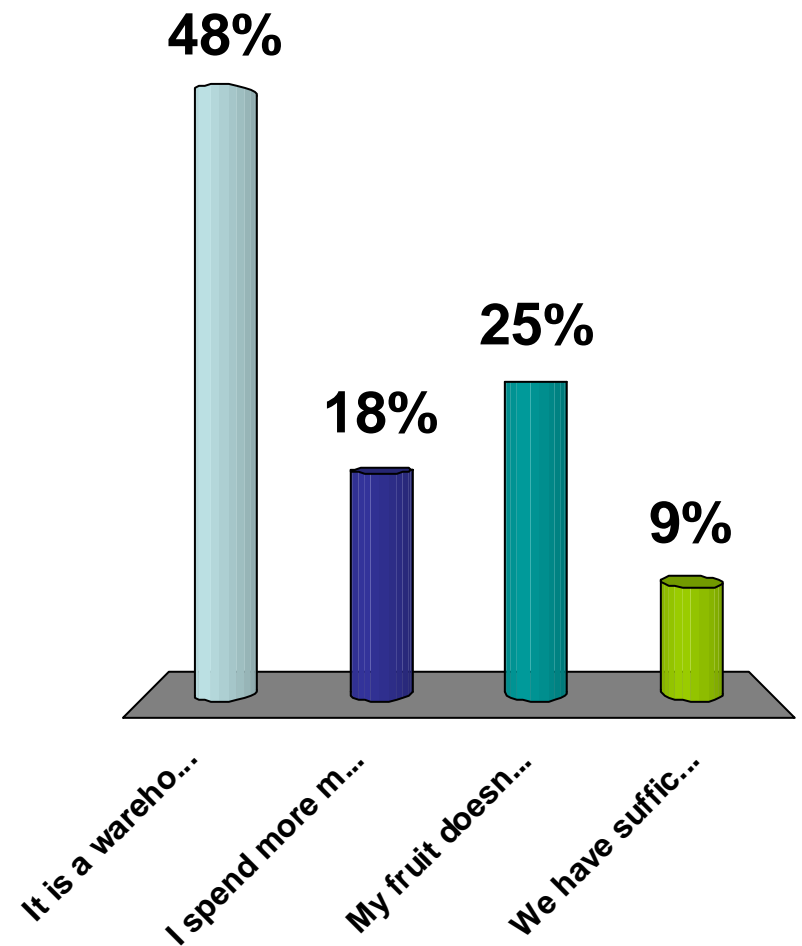
Choose your **3** highest priorities for organic tree fruit research. (with highest priority first)

1. Crop load management
2. Post harvest issues
3. Disease control
4. Economics
5. Weed control
6. New varieties / rootstock
7. Organic systems study
8. Tree nutrition
9. Insect management
10. Fruit quality



Why do you think post harvest is a lower priority?

1. It is a warehouse problem
2. I spend more money on production
3. My fruit doesn't have post harvest problems
4. We have sufficient control tools for organic

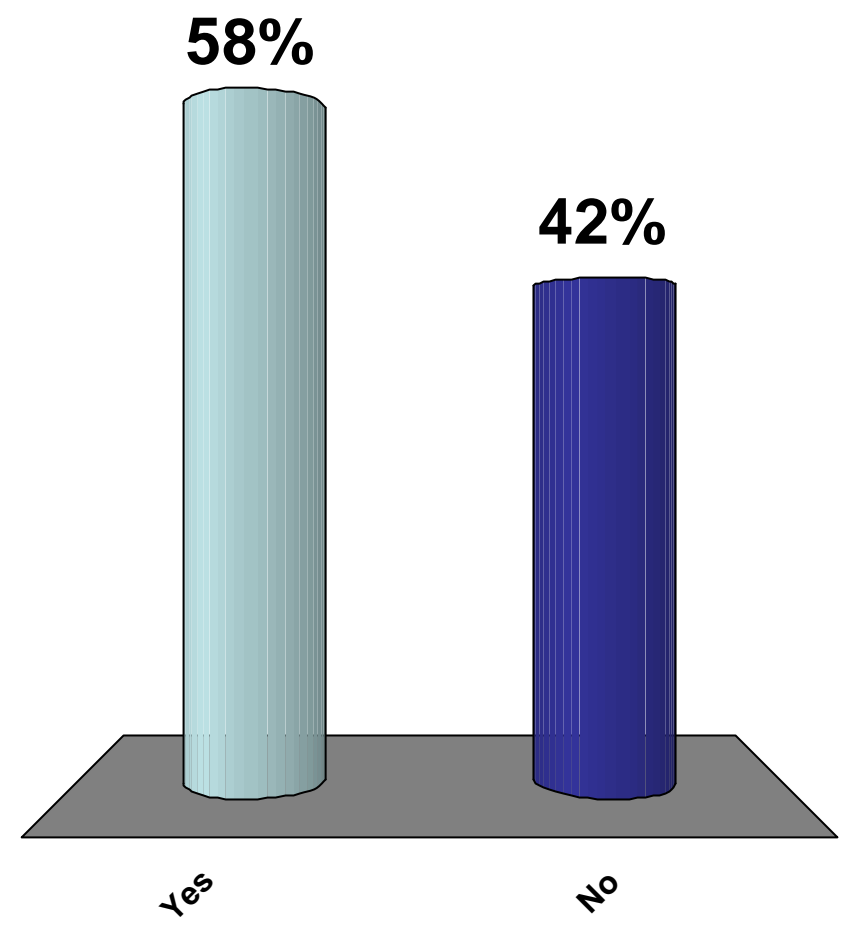


The next series of questions relates to “**purchased natural enemies**”, or predators and parasitoids that are available for purchase from a commercial insectary.

Examples include lacewings, lady beetles, predatory mites, and *Trichogramma* wasps. For these questions, the term “**your orchard(s)**” shall mean one you own, manage, or consult on.

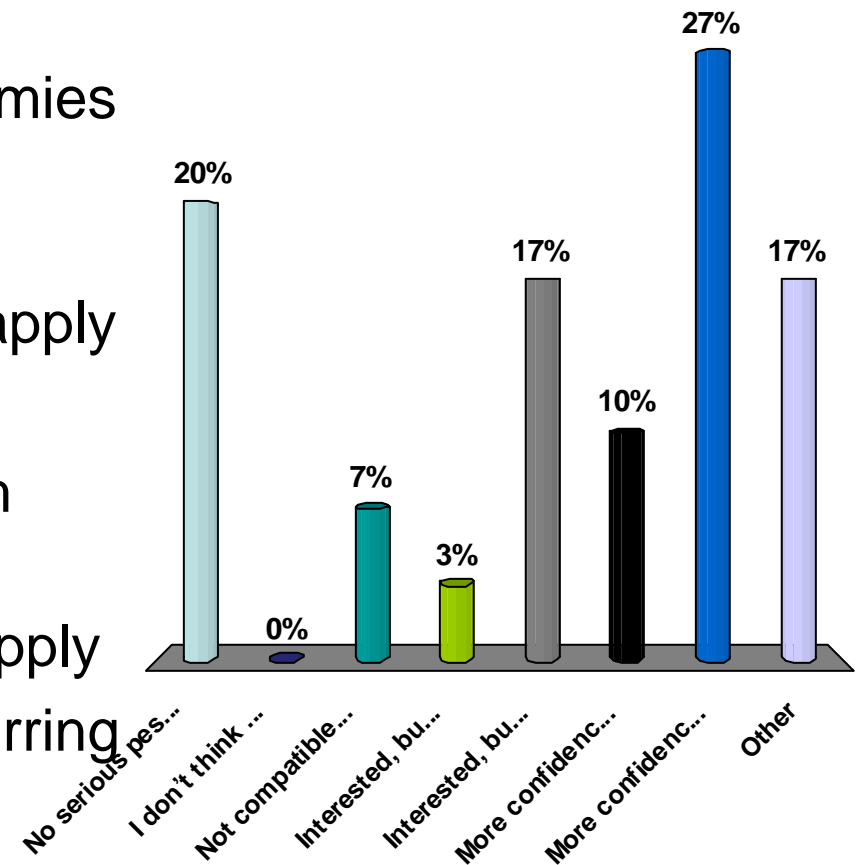
Have you purchased and released natural enemies in your orchard(s) in the past 5 years?

- 1. Yes
- 2. No



If you answered ‘No’ to the previous question:
I have not purchased natural enemies because
(pick all that apply in order from most to least
important):

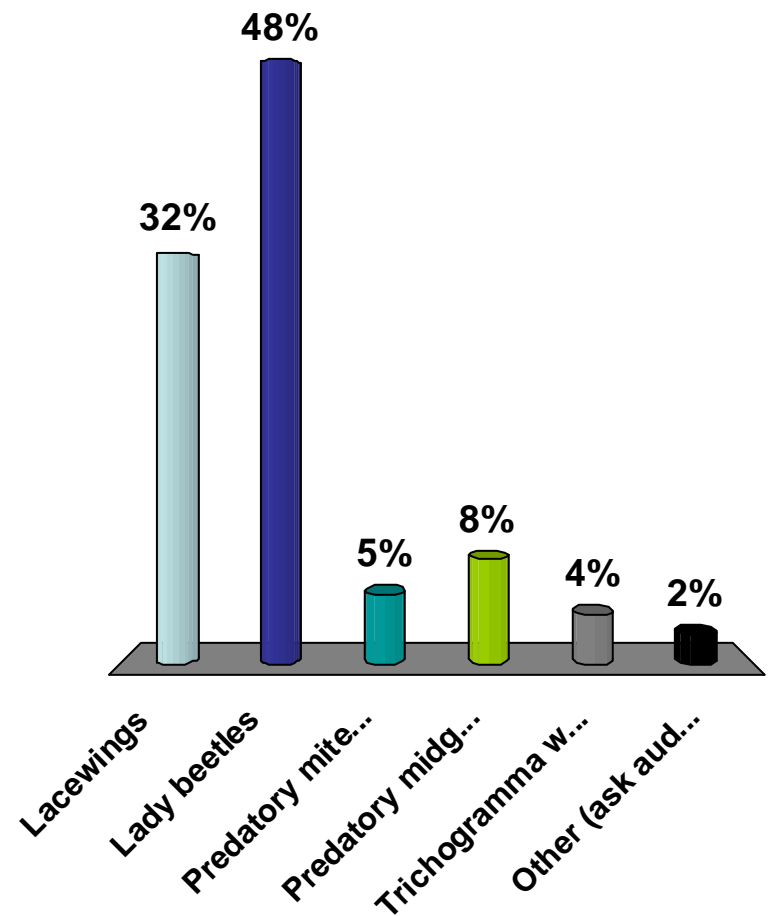
1. No serious pest problems these insects could help with
2. I don't think releasing natural enemies would be effective for my pest problem
3. Not compatible with the sprays I apply
4. Interested, but it's too expensive
5. Interested, but don't know enough about it
6. More confidence in the sprays I apply
7. More confidence in naturally occurring predators and parasitoids
8. Other



If you purchased natural enemies:

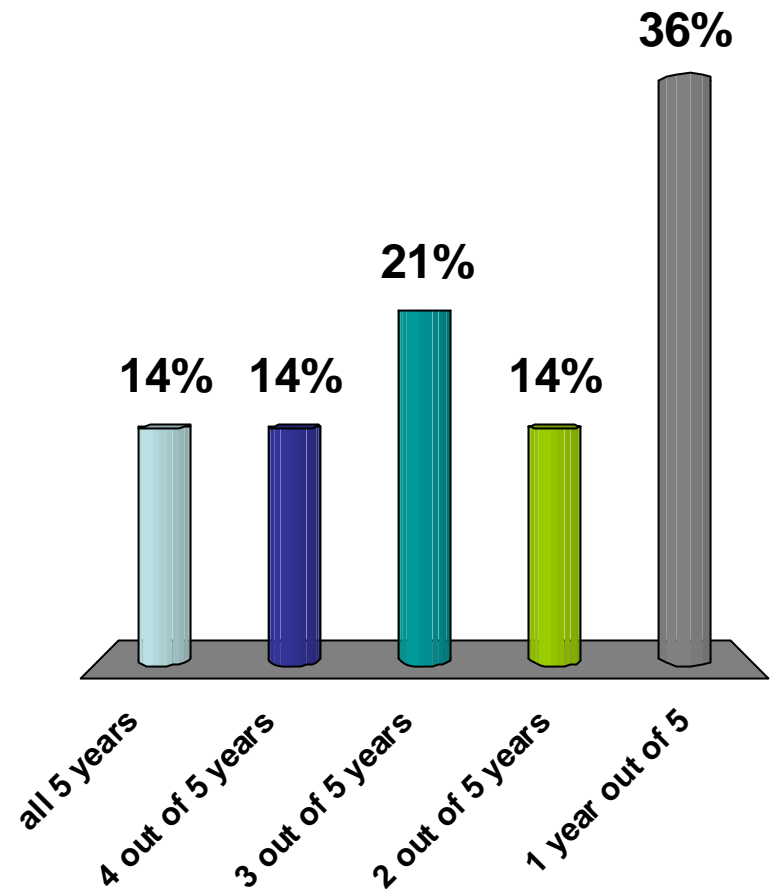
In the past 5 years, I have purchased and released the following natural enemies (pick all that apply, in order of greatest use to least use)

1. Lacewings
2. Lady beetles
3. Predatory mites
4. Predatory midges
(Aphidoletes for aphid control)
5. Trichogramma wasps
6. Other (ask audience which ones)



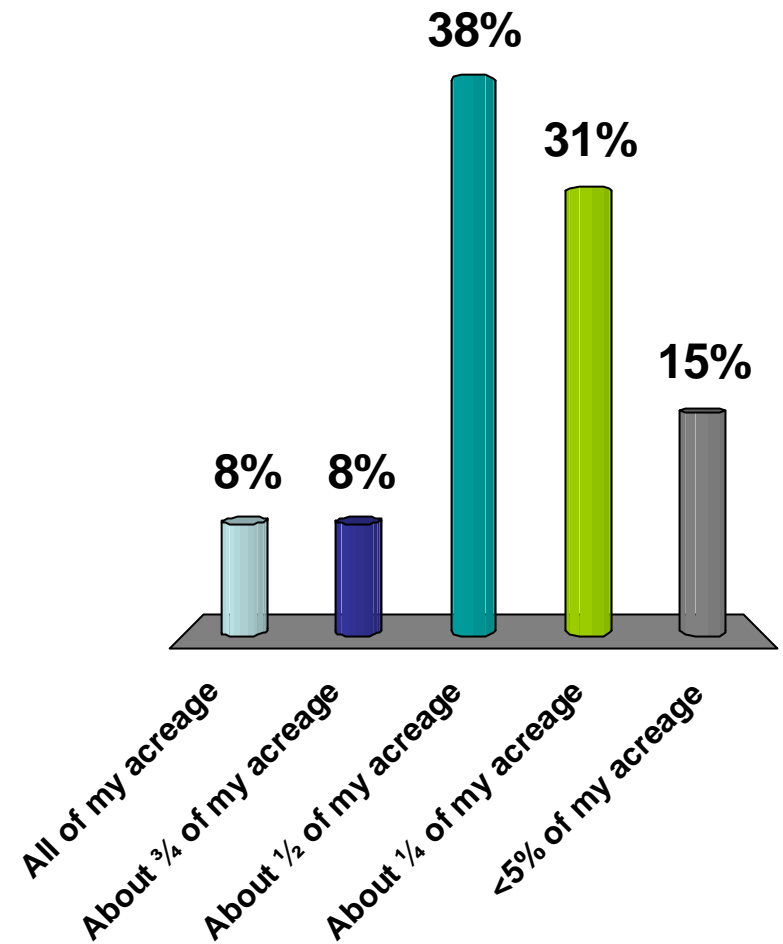
In the past five years, I released lady beetles on part or all of my acreage during:

- 1. all 5 years**
- 2. 4 out of 5 years**
- 3. 3 out of 5 years**
- 4. 2 out of 5 years**
- 5. 1 year out of 5**



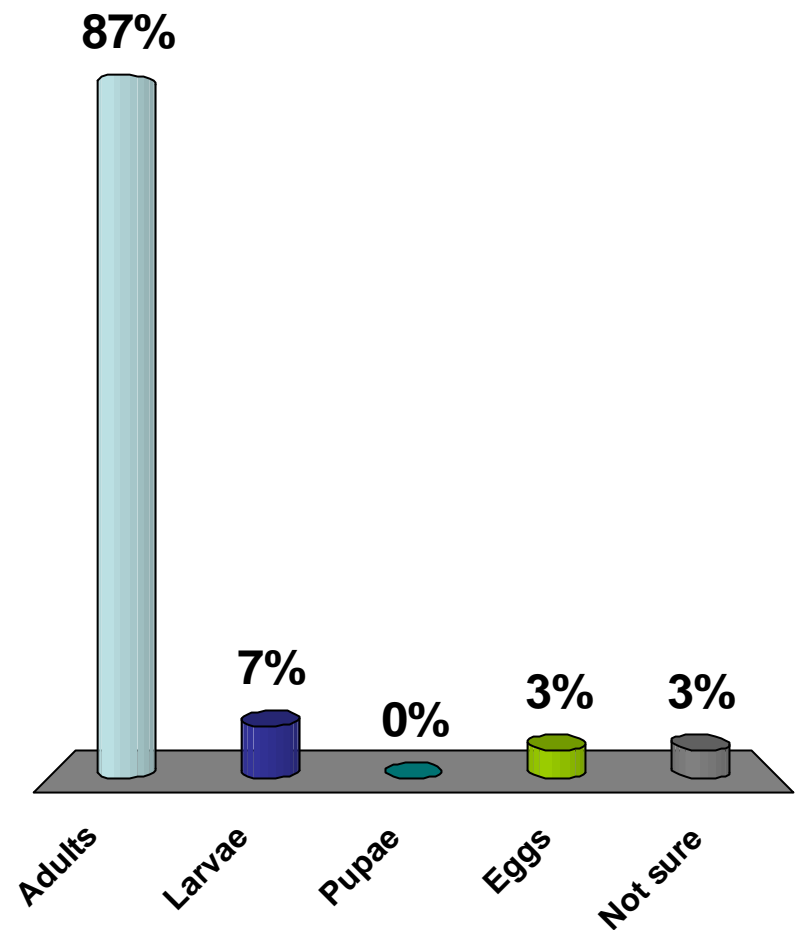
Typically, I released lady beetles on:

1. All of my acreage
2. About $\frac{3}{4}$ of my acreage
3. About $\frac{1}{2}$ of my acreage
4. About $\frac{1}{4}$ of my acreage
5. $<5\%$ of my acreage



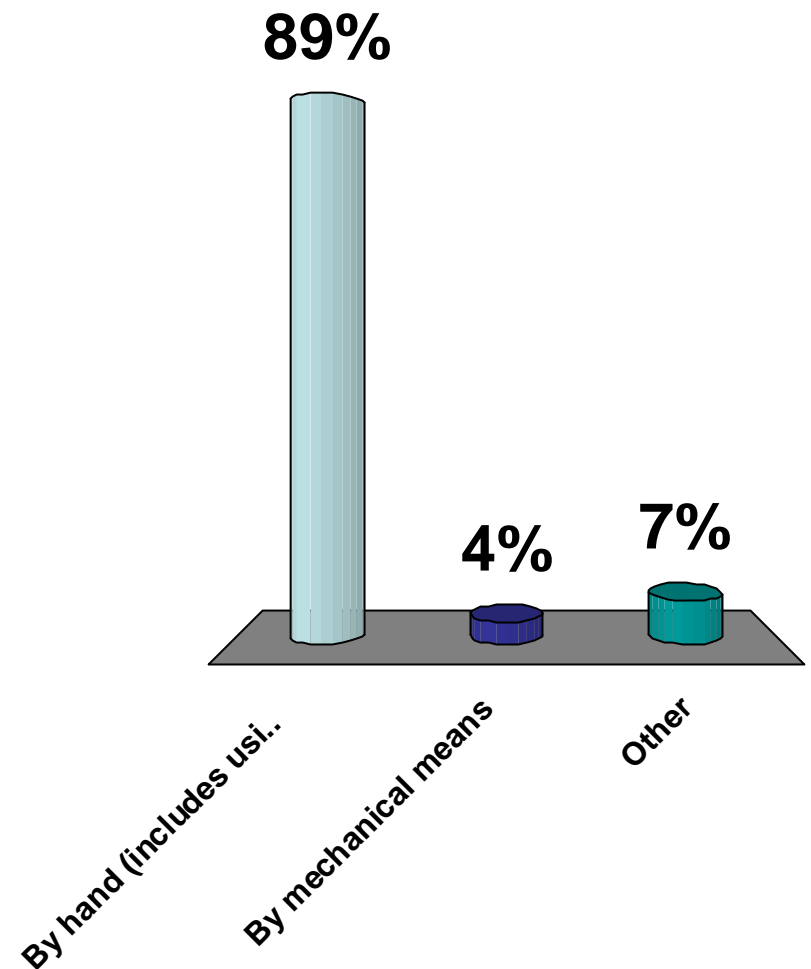
The stage of lady beetles I have released is (check all that apply in order of frequency)

1. Adults
2. Larvae
3. Pupae
4. Eggs
5. Not sure



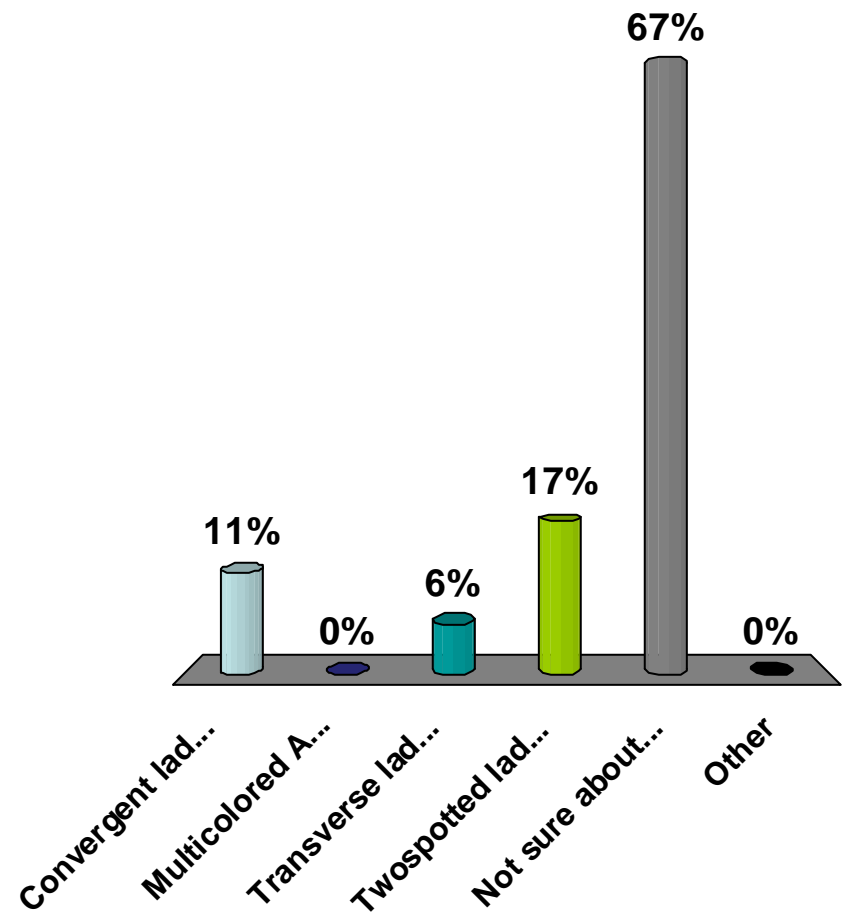
The most common method I have used to release lady beetles is:

1. By hand (includes using an ATV to ride around the orchard)
2. By mechanical means
3. Other



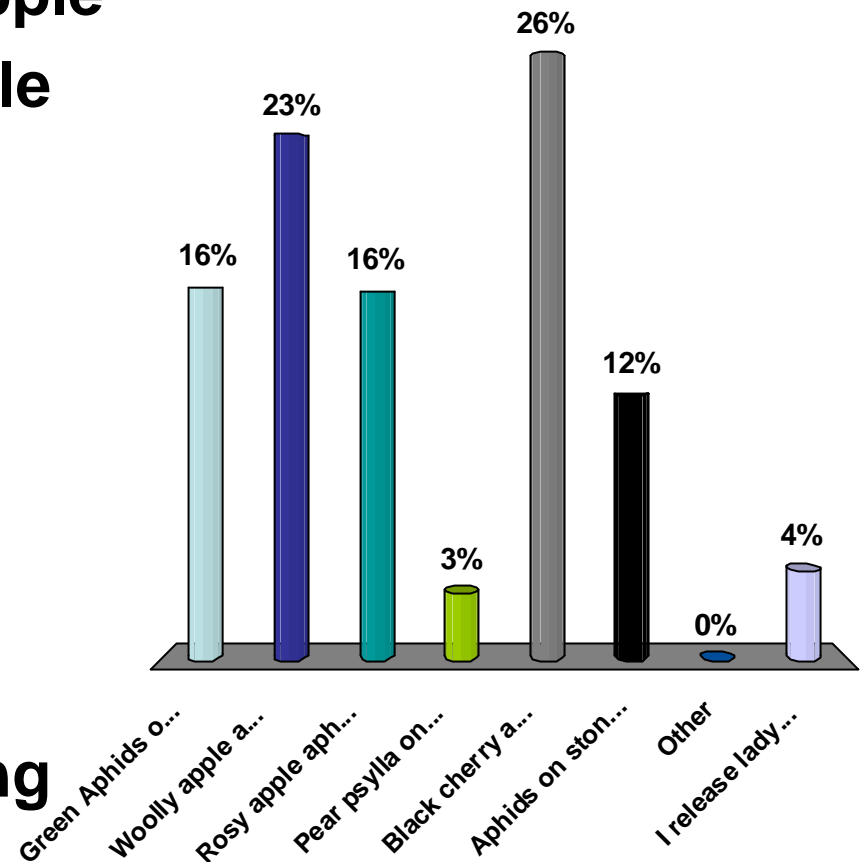
The lady beetle species I have released most frequently is:

1. Convergent lady beetle, *Hippodamia convergens*
2. Multicolored Asian lady beetle, *Harmonia axyridis*
3. Transverse lady beetle, *Coccinella transversoguttata*
4. Twospotted lady beetle, *Adalia bipunctata*
5. Not sure about the species
6. Other



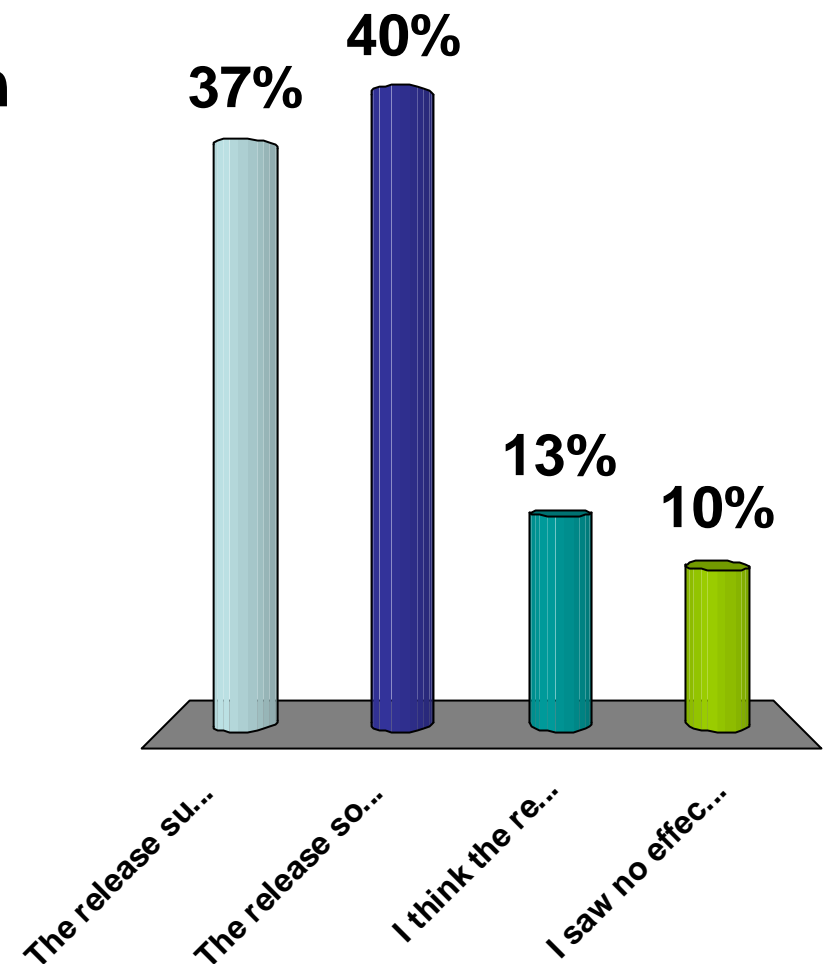
The pest(s) I most frequently release lady beetles for are (rank in order):

1. Green Aphids on apple
2. Woolly apple aphid on apple
3. Rosy apple aphid on apple
4. Pear psylla on pear
5. Black cherry aphid on cherry
6. Aphids on stone fruit
7. Other
8. I release lady beetles to prevent future pest problems without knowing what the target might be



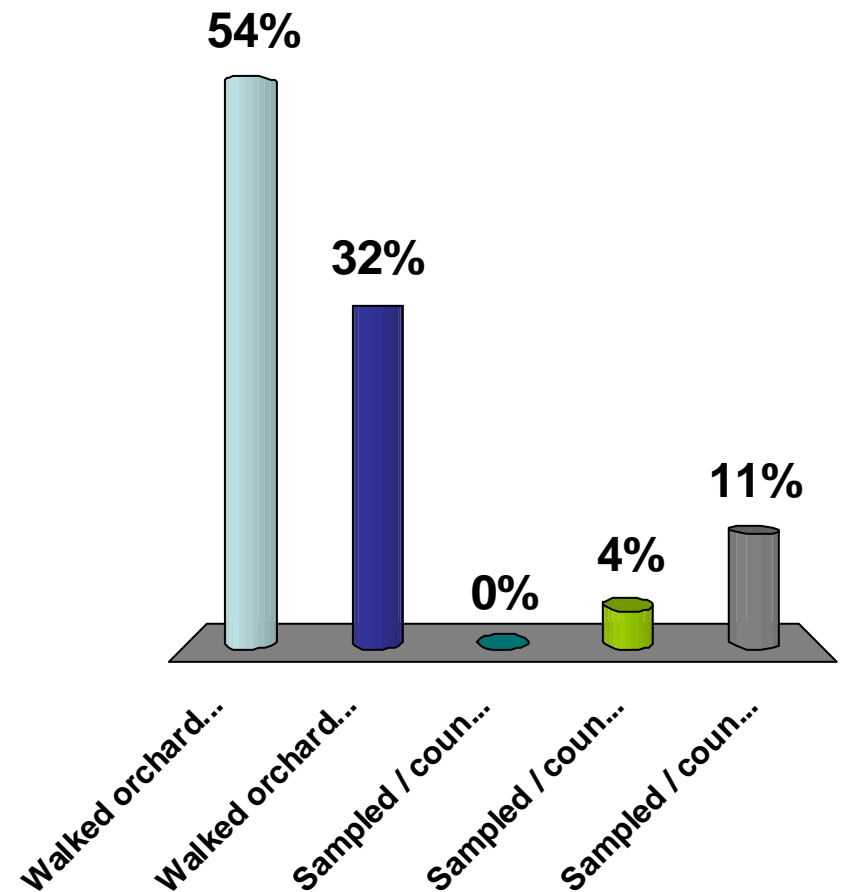
What statement best describes your view of the success of the release?

1. The release successfully solved my pest problem in a timely fashion
2. The release solved the pest problem, but too slowly
3. I think the release helped the pest problem, but I'm not really sure
4. I saw no effect of the release on the target pest



How did you evaluate the success of your release?

1. Walked orchard and looked for pest and lady beetles
2. Walked orchard, looked at release site for lady beetle survival / dispersal
3. Sampled / counted lady beetles after release
4. Sampled / counted lady beetles and target pest after release
5. Sampled / counted pest and/or lady beetles before and after release





*Thanks for
participating !*