What research do we need for organic orchards?

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Are you in Yakima?

1. No
2. Yes

73%

27%
Do you work with organic orchards?

1. No
2. Yes
What is your role?

1. Grower
2. Manager
3. Supervisor
4. Ag chem fieldman
5. Warehouse fieldman
6. Research/extension
7. Other
Where is most of your organic orcharding?

1. Yakima Valley
2. Lower Columbia Basin
3. North of I-90
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

![Bar chart showing percentages for each category]
Question 1a.
What is the most serious problem you face in organic tree fruit 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
Question 1b.

What is the 2nd most serious problem you face in organic tree fruit 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

1. New varieties / rootstock: 29%
2. Insect management: 22%
3. Disease control: 18%
4. Tree nutrition: 12%
5. Weed control: 7%
6. Crop load management: 3%
7. Fruit quality: 4%
8. Economics: 4%
9. Post harvest issues: 3%
Question 1c.

What is the 3rd most serious problem you face in organic tree fruit 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
Which is the **least** serious problem you face in organic tree fruit 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
Question 2.

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
Question 3.

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

5%  42%  44%  9%
Question 4.

What is your level of satisfaction with your current options for weed control in organic orchards?

1. Very low
2. Low
3. Moderate
4. High
5. Very high
Question 5.
What is your level of satisfaction with your current options for tree nutrition in organic orchards?

1. Very low
2. Low
3. Moderate
4. High
5. Very high
Question 6a.

Rank the **most** difficult insect pest to control in organic apple production.

1. Rosy apple aphid
2. Stink bug
3. Mites
4. Wooly apple aphid
5. Codling moth
6. Thrips
7. Lygus bug
8. Leaf roller
Question 6b.

Rank the second most difficult insect pest to control in organic apple production.

1. Rosy apple aphid
2. Stink bug
3. Mites
4. Wooly apple aphid
5. Codling moth
6. Thrips
7. Lygus bug
8. Leaf roller
Question 6c.

Rank the third most difficult insect pest to control in organic apple production.

1. Rosy apple aphid
2. Stink bug
3. Mites
4. Wooly apple aphid
5. Codling moth
6. Thrips
7. Lygus bug
8. Leaf roller
Question 7.
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
Question 8.
Rate the need for additional codling moth control tools for organics.

1. Low
2. Medium
3. High
Question 9.

What biocontrol category is the most important for you to know more about as an organic grower?

1. Value of releasing beneficial insects
2. Value of habitat manipulation (e.g. rose garden, cover crops)
3. Effects of sprays on beneficial insects
4. Monitoring methods for beneficial insects
Rank the need for more research on post-harvest diseases of organic apples.

1. Very low
2. Low
3. Medium
4. High
5. Very high
Question 11.

Rank the importance of research to develop methods to measure soil quality changes and the impacts on trees and fruit.

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

• Long-term

• Interdisciplinary – bugs, dirt, and money!

• Interaction of parts – effects of soil on fruit quality; fertility and diseases, ...

• Ecological design of the orchard system – training systems, rose gardens, ground cover, water use, ...

• Other – climate change impacts, energy, etc.

Benefits: more self-regulation of pests, fertility; more stability; lower environmental impact, lower input costs; …
Do we need a long-term organic systems research site?

1. No
2. Yes
3. Not sure

- No: 13%
- Yes: 68%
- Not sure: 19%
Question 12b.

Rank the importance of a systems research site compared to support for more immediate problems (e.g. a new pest)?

1. Very low
2. Low
3. Medium
4. High
5. Very high
Question 13a.

Choose your **highest** priority for organic tree fruit research.

1. Crop load management
2. Post harvest issues
3. Disease control
4. Economics
5. Weed control
6. New varieties / rootstock
7. Organic systems site
8. Tree nutrition
9. Insect management
10. Fruit quality
Question 13b.

Choose your 2nd highest priority for organic tree fruit research.

1. Crop load management
2. Post harvest issues
3. Disease control
4. Economics
5. Weed control
6. New varieties / rootstock
7. Organic systems site
8. Tree nutrition
9. Insect management
10. Fruit quality
Question 13c.

Choose your 3rd highest priority for organic tree fruit research.

1. Crop load management
2. Post harvest issues
3. Disease control
4. Economics
5. Weed control
6. New varieties / rootstock
7. Organic systems site
8. Tree nutrition
9. Insect management
10. Fruit quality
At what point would you consider switching back to conventional production – if the minimum difference between Organic and Conventional bin returns were:

1. 10% less for Org.
2. No difference
3. 10% more for Org.
4. 20% more for Org.
5. 30% more for Org.
6. I would never switch back to Conventional
Question 15.

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 tillage for weed control?

1. No
2. Yes
Have you used mulching for weed control / soil improvement?

1. No
2. Yes
Do you use compost to supply nutrients?

1. No
2. Yes

- No: 20%
- Yes: 80%
Do you use legumes in the orchard to provide some nitrogen nutrition?

1. No
2. Yes

62% Yes
38% No
Rate your ability to adequately control mice (voles) in your organic orchard.

1. Very low
2. Low
3. Moderate
4. High
5. Very high
Thanks for participating!