Characterizing instructor priorities for organic agriculture

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Organic: A Growing Sector of Agriculture

• Over 20,000 Certified Organic Operations
• Retail Market Valued over $39 Billion
• 39% of organic producers intended to increase production

Young People are Interested in Organic...

- On average, organic farm operators are younger than conventional\(^1\)
- Young consumers (age 18-29) are more likely to buy organic products\(^1\)
- Creation of organic programs and student farms

<table>
<thead>
<tr>
<th>Land Grant Organic Trends</th>
<th>2003</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td># of states with certified organic research acres</td>
<td>18</td>
<td>37</td>
</tr>
<tr>
<td># of student organic farms</td>
<td>9</td>
<td>36</td>
</tr>
<tr>
<td># of organic academic programs offered</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td># of states offering organic Extension resources</td>
<td>42</td>
<td>45</td>
</tr>
</tbody>
</table>

Industry is Patchy Across U.S.

- Some areas have fewer organic examples for teaching students
- May have fewer resources and less support for teaching this topic

Develop a curriculum for organic production

What are the most important topics and skill sets to include?
What resources are instructors already using?
What are instructors biggest challenges and support opportunities?
Project Objectives

1. Characterize instructors’ mental models for organic agriculture education
2. Develop introductory curriculum to address critical concepts identified by instructors
3. Test curriculum in target classes across regions, accounting for student perceptions
Methods: Finding Faculty

• To find faculty who teach organic courses we searched
  • Sustainable ag education association (SAEA) program listing
  • Land Grant Universities
  • Hispanic Serving Institutions
  • 1890 Historically Black Colleges
• Searched 130 universities for organic courses
• Found 38 Faculty currently teaching organic courses
• Contacted 26 Faculty
• Interviewed 19 Faculty
## Methods: Faculty Summary

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positions</td>
<td>Instructor - Regents Professor</td>
</tr>
<tr>
<td>Institution Types</td>
<td>Land Grant, Other 4-year, Liberal Arts</td>
</tr>
<tr>
<td>Teaching appointments</td>
<td>15-100%</td>
</tr>
<tr>
<td>Years Teaching Organic</td>
<td>2-15 years</td>
</tr>
</tbody>
</table>
Methods: Faculty Summary

Map of the United States with regions color-coded:
- Northeast: blue
- South: green
- North Central: purple
- West: orange

Numbers indicate the count of faculty in each region:
- Northeast: 4
- South: 7
- North Central: 3
- West: 5
Methods: The Interviews

- Via phone or in-person
- Semi-structured, open-ended interview strategy
- Questions developed via meetings w/ an advisory board
- Interested in:
  - Concepts & Skills Covered
  - Scope of Teaching Examples
  - Challenges and Opportunities
Methods: Question Examples

• What two topics do you consider critical for teaching organic agriculture?

• In your class, do students learn about organic certification regulations? If yes, how do they learn about the history and implementation of regulations?

• Which topics or skills are most challenging for you to teach?
Methods: Coding and Analysis

- Transcribing
- Labels or ‘codes’ assigned to segments of interview
- MAXQDA software
- Calculated Frequency of Mentions
how you can, you know one of the analogies we use is related to soil/organic matter is the bank account analogy. So you can either take less money out or put more money in. Same kind of thing so.. Organic matter you can either reduce tillage and conserve what you have there or you can focus on adding more organic matter inputs through cover crops or through compost. So that's a pretty big one. That's probably the primary thing.
Results: Identify Two Critical Topics...

<table>
<thead>
<tr>
<th>Topics</th>
<th>% Respondents (out of 18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soils</td>
<td>44.4%</td>
</tr>
<tr>
<td>Ecological Principles</td>
<td>38.9%</td>
</tr>
<tr>
<td>NOP Standards /Certification</td>
<td>27.7%</td>
</tr>
<tr>
<td>Systems</td>
<td>16.7%</td>
</tr>
<tr>
<td>Insects</td>
<td>16.7%</td>
</tr>
<tr>
<td>Cover Crops</td>
<td>11.1%</td>
</tr>
</tbody>
</table>
## Results: Example – National Organic Program

<table>
<thead>
<tr>
<th>Concept</th>
<th>% Respondents (out of 17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards and Regulations</td>
<td>88.2%</td>
</tr>
<tr>
<td>Certification Process</td>
<td>58.8%</td>
</tr>
<tr>
<td>People &amp; Organizations involved</td>
<td>52.9%</td>
</tr>
<tr>
<td>National List Allowed/ Prohibited Substance</td>
<td>41.2%</td>
</tr>
<tr>
<td>History</td>
<td>35.3%</td>
</tr>
</tbody>
</table>
## Results: Teacher Challenges

<table>
<thead>
<tr>
<th>Teaching Limitations &amp; Challenges</th>
<th># Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Resources/Materials</td>
<td>9</td>
</tr>
<tr>
<td>Time &amp; Timing</td>
<td>8</td>
</tr>
<tr>
<td>Lack of Knowledge/Expertise</td>
<td>8</td>
</tr>
<tr>
<td>Lack of Administrative Support</td>
<td>5</td>
</tr>
<tr>
<td>Philosophical/Political</td>
<td>5</td>
</tr>
</tbody>
</table>
“It’s not my specialty. Something I’m extremely sympathetic to and I think like a lot of natural science folks, not trained in it, don’t know quite how to do it, but really want to do it.”
Results: Support & Opportunities

<table>
<thead>
<tr>
<th>Support &amp; Opportunities</th>
<th># Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guest Lecturers</td>
<td>15 (mentioned 47 times)</td>
</tr>
<tr>
<td>Co-teaching</td>
<td>7</td>
</tr>
<tr>
<td>Connections with Farmers</td>
<td>7</td>
</tr>
<tr>
<td>Partner Institutions &amp; Organizations</td>
<td>4</td>
</tr>
<tr>
<td>Conferences/Associations/Societies</td>
<td>4</td>
</tr>
</tbody>
</table>

- 17 out of 19 respondents use spaces outside of the classroom
Conclusions

Focus on production and foundational principles

Topic areas of need:
- Livestock
- Social Issues
- Climate Change
- Marketing

Areas of Instructor Support:
- Guest Lecturers
- Outside Teaching Spaces
Next Steps...

- Analyzing faculty syllabi for:
  - Content
  - Sequencing
- Developing modules
- Module testing
Questions?

Acknowledgements
Eric Gallandt
Tim Chapman
Faculty who were interviewed
Advisory Board: Krista Jacobsen and Joe Dauer

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