Efficient and Resilient Specialty Crop Production Systems
Tom Buller
This material is funded in partnership by USDA, Risk Management Agency, under award number RM18RMEPP522C046"
What is efficiency?

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Why efficiency?

- Scale neutral concept but scale dependent in application
- Applies everywhere across the farm
- Seeking the optimal
Different ways to frame efficiency

- Yield/Unit Area (lbs or bu/acre)
- Yield/Labor Time
- Value/labor time
- Value/area (bed/row/square foot/acre)

Net Income
What are systems and why do we care?

- Relational
- Holistic

https://www.sare.org/Learning-Center/Books/Systems-Research-for-Agriculture
Integrated Pest Management

- Goal to manage pests not eliminate
- Scouting critical step- figure out what is going on before its an emergency
- Multiple Layers of Defense
  - Preventive cultural practices
  - Mechanical Controls
  - Biological Treatments
  - Chemical
How to decide what systems to optimize?

▪ What are your challenges?

▪ What are limiting resources?
  (time......)

▪ What is your vision?
Thinking efficiency

- Ask Why?
- Prioritize
- Make Data Driven Decisions
- Eliminate Waste
- Think of the whole system
- Learn from others
Ask why 5 times

Why?
Why?
Why?
Why?
Why?
Getting Priorities in Line

- *What is important is seldom urgent and what is urgent is seldom important.*
  - Dwight Eisenhower

<table>
<thead>
<tr>
<th>Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgent</td>
<td>1. Do it now!</td>
</tr>
<tr>
<td>Not Important</td>
<td>3. Delegate</td>
</tr>
</tbody>
</table>
Make Data driven decisions

- Veggie Compass
  - http://www.veggiecompass.com/

- Iowa State Vegetable Production Budgets
  - https://www.extension.iastate.edu/agdm/crops/html/a1-17.html
Ben Hartman’s 10 Types of Waste

- 1. Overproduction
- 2. Waiting
- 3. Transportation
- 4. Overprocessing
- 5. Inventory
- 6. Motion
- 7. Making Defective Products
- 8. Overburdening
- 9. Uneven Production/sales
- 10. Unused Talent
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make applesauce: cait
make soup: kay
pumpkin pie: erin
cleaned center: cait
Cut + hang herbs: kay + tony
print G6 film: cait
wood burn sign: cait
Straw: 41
(we bought 48)
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Minimize Moves

- Spaghetti Diagrams
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When you can avoid loses?

NAP

• Non-Insured Crop Disaster Assistance
• Need Actual Production History (APH)
• Verified Production Records

• Whole Farm Revenue Insurance
  • The go to form of crop insurance for diversified operations
  • Also great for operations that don’t grow traditional commodities
  • Records must be kept to verify production levels
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Unused talent?

http://www.kansassbdc.net
Think of the whole system

Worksheet 3  Greenhouse Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating costs</td>
<td>$10,000</td>
</tr>
<tr>
<td>Cooling costs</td>
<td>$5,000</td>
</tr>
<tr>
<td>Irrigation cost</td>
<td>$2,500</td>
</tr>
<tr>
<td>Total greenhouse costs</td>
<td>$18,000</td>
</tr>
</tbody>
</table>

Greenhouse annual operating costs:

<table>
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<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>Heating costs</td>
<td>$2,000</td>
</tr>
<tr>
<td>Cooling costs</td>
<td>$1,000</td>
</tr>
<tr>
<td>Irrigation cost</td>
<td>$500</td>
</tr>
<tr>
<td>Total annual operating costs</td>
<td>$3,500</td>
</tr>
</tbody>
</table>

Total cost per flat:

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Note: All costs are approximate and subject to change.
THE PAPERPOT TRANSPLANTER

Turn Hours Of Labor Into Minutes!

https://paperpot.co/
Learn From Others
What’s the least efficient part of your operation?
Questions?
Tom Buller

tombuller@ksu.edu

785-843-7058