Lean Mean Growing Machine

Ben Hartman, author of The Lean Farm
Who we are...
Who We Are...

• 4-season specialty crop farm in northern Indiana

• 15\textsuperscript{th} year in operation, 3 part-time staff

• Local commitment: 100% of food ends up within 1.5 miles

• Behind the scenes farm for 6 artisan restaurants

• Leaned up: 80 to 5 crops, 60 to 35 hours, 5 acres to ½ acre, hundred of tools to a handful
We grafted Toyota’s business model onto our farm
4 Lean Tips
#1. Precisely Identify Value
To increase value...

Increase precision
Clay Bottom Farm Value Sheet

Chef Name: ____Jesse____________________

Preferred communication method and time: texts noon-4pm

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Bulb fennel, tops left on, no roots</td>
<td>Tues and Fri noon-4, Sept-Jan</td>
<td>About 10 per week</td>
</tr>
<tr>
<td>Salad mix, any kind just not too much spinach</td>
<td>Tues and Fri noon-4 all year</td>
<td>9# per week</td>
</tr>
<tr>
<td>Tomatoes—mix of colors, lots of green zebra, ripe</td>
<td>Tues and Fri noon-4 May-Oct</td>
<td>50-60# per week May-June 30# per week July-Oct</td>
</tr>
</tbody>
</table>
The customer is the only one allowed to define value.
#2: Count your steps from seed to customer
Old field management
Old field management

1. Plow or till old crop
2. Seed cover crop
3. Pack seeds with cultipacker
4. Mow cover crop
5. Till in cover crop
6. Shape beds

“Turnover” time: 3-6 months
Work time: 1-2 hours per bed
Lean Field Management

1. Pull out old crop
2. Loosen/raise the bed *if needed*
3. Add 2” of compost, leave it on top

“Turnover” time: 30 minutes per 100 sq ft. bed
Apply 2” compost per year
Leave the compost on the surface
We grow almost everything by paper pot method: beans, lettuce, basil, cilantro....
How to decide on new technology: “Does it eliminate a step or add steps?”

Tine weeding to eliminate steps
A French-inspired greens harvester
3. Maximize fixed costs: land, greenhouses
March 1: Tomatoes go in between greens
#4: Eliminate waiting waste
We eliminated the walk-in cooler.

Instead, all of our crops are delivered within four hours.
Questions?
Bonus slides (if time permits)
1. 5S on the Farm: We de-cluttered

We got organized—got rid of nonessentials—so we could move faster.
5S: #1. Sort: 3 Rules

1. Get rid of anything not used almost every week for adding value (*usefulness* instead Mari Kondo’s “joy”)
   • *don’t squirrel: remove it from the work space*

2. Simple is best: find fewest number of tools to accomplish the most work.

3. Use a *red tag* room.

*If you can’t completely sort in two days, the farm has too much stuff.*
Sorting before...
After...

A tool is in a worker’s hands or in it’s place. **There is no third option.**
5S: #2. Set in Order

• Store tools where you use them (get rid of the tool shed)—spread them around the farm
• Store tools where you see them (at eye level)
5S: #3/4/5: 
Shine/Standardize/Sustain

• Sorting, setting in order, and shining need to be made routine—part of everyday work
• Sustain = “do without being told”
Shine and sustain with Visual Systems: Kamishibai