

Lean Mean Growing Machine

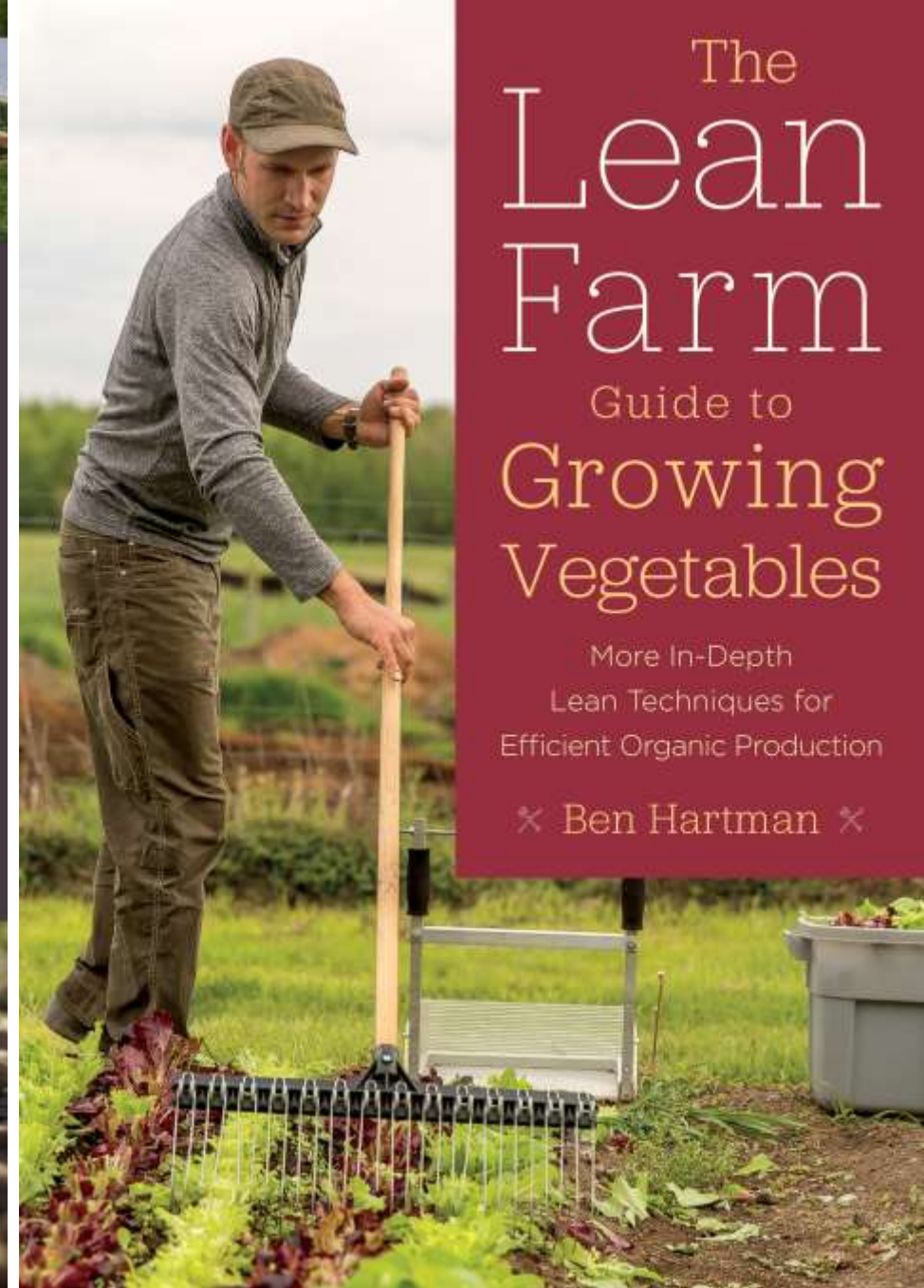
Ben Hartman, author of *The Lean Farm*



The
**Lean
Farm**

How to Minimize Waste,
Increase Efficiency, *and*
Maximize Value and Profits
with Less Work

✕ Ben Hartman ✕



The
**Lean
Farm**
Guide to
Growing
Vegetables

More In-Depth
Lean Techniques for
Efficient Organic Production

✕ Ben Hartman ✕

Online courses and events at claybottomfarm.com

Who we are...



Who We Are...

- 4-season specialty crop farm in northern Indiana
- 15th 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



Rachel
Leander
Arlo
Ben



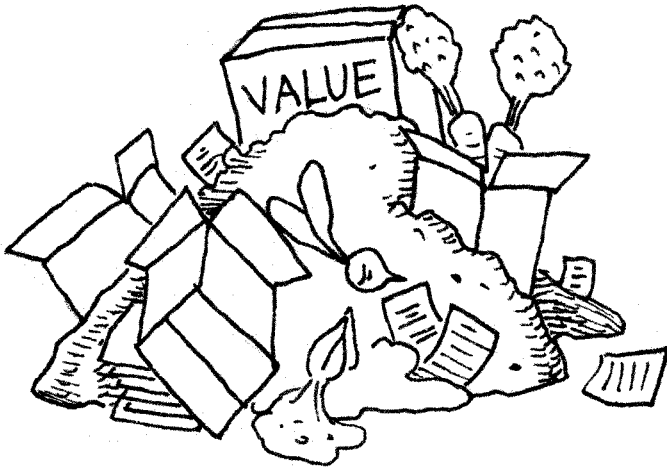
We grafted Toyota's business model onto our farm



4 Lean Tips

#1. Precisely Identify Value

TO INCREASE VALUE...



INCREASE PRECISION



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

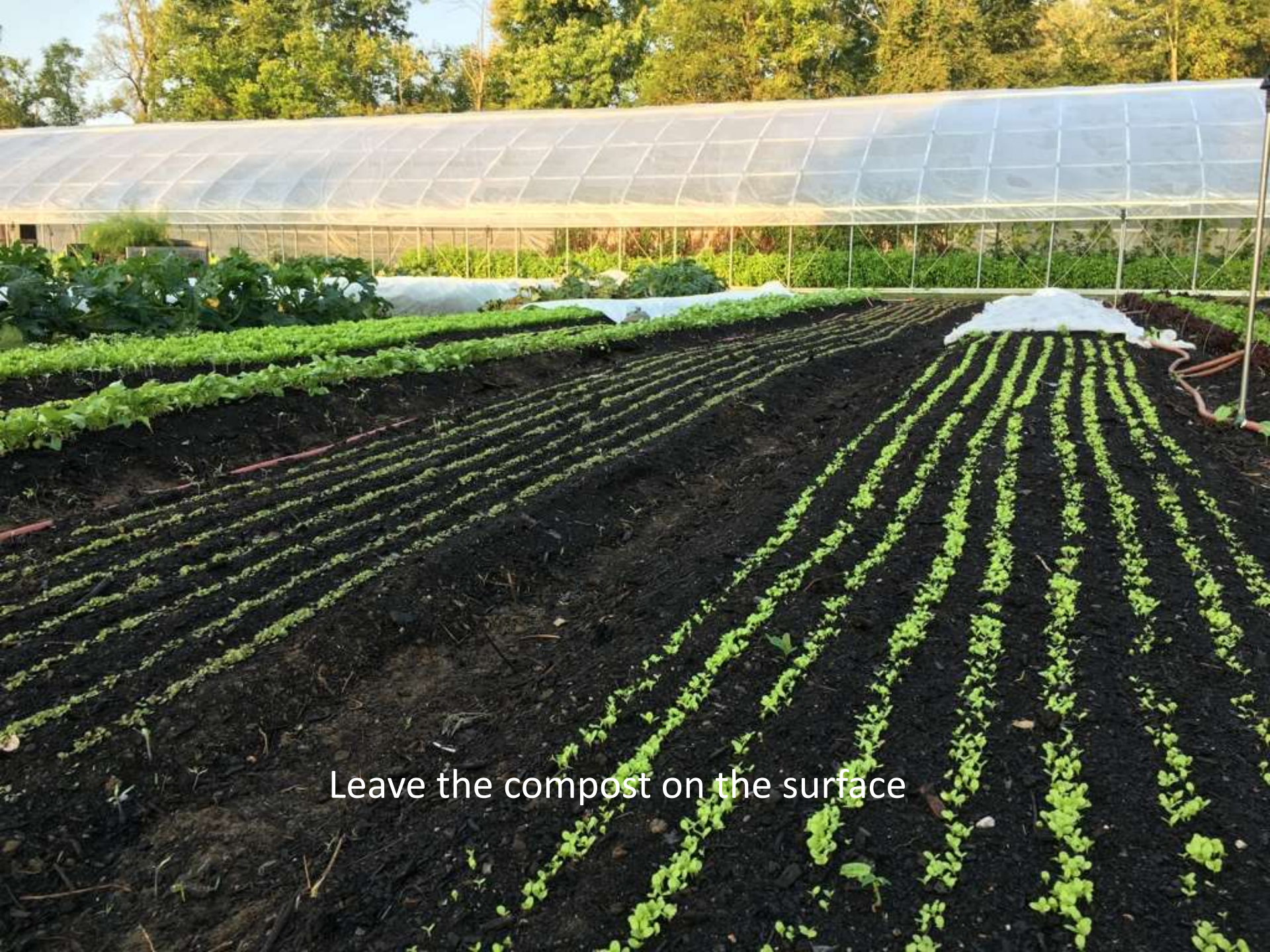
“Turnover” time: 30 minutes per 100 sq ft. bed



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.

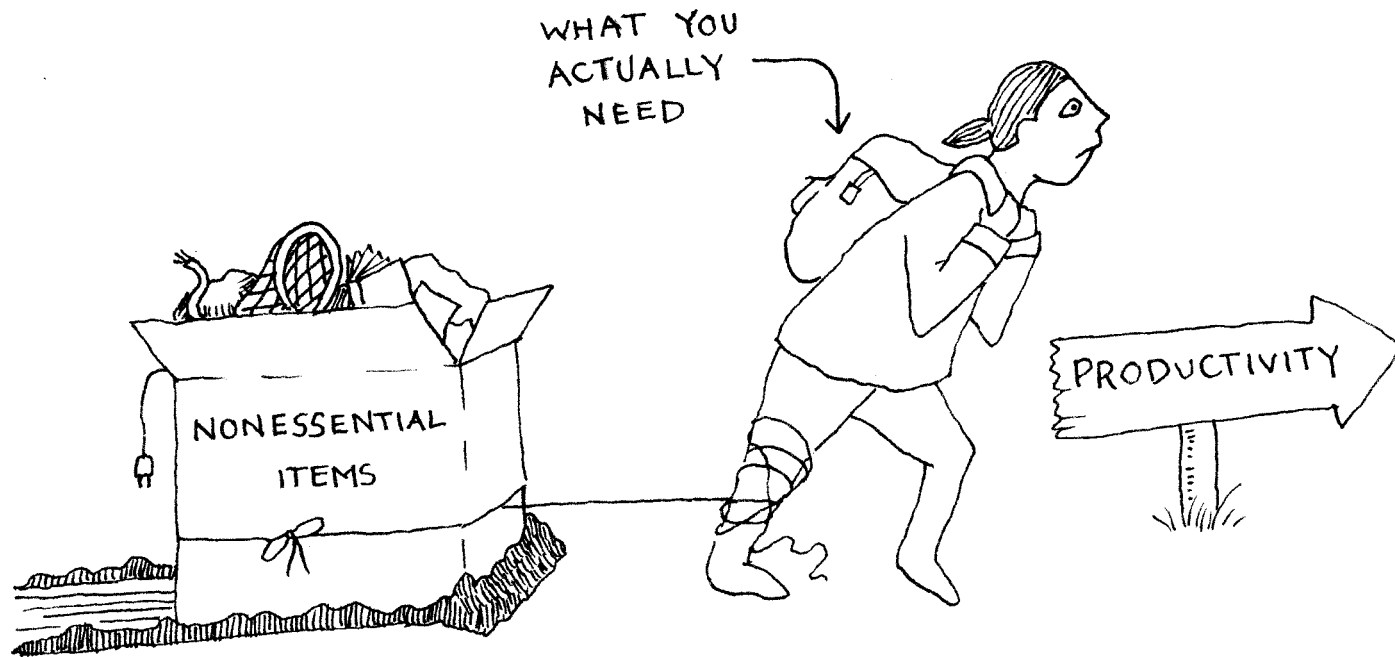


Questions?



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 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 its 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)





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

