Cornell Cooperative Extension

National Young Farmers Coalition

Lean & Clean

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Agenda

- A note on FSMA, 3rd Party GAPs Certification
- What is ‘Lean Farming’?
- Potential benefits
- Tools
- Where do I start?

94% of the problems are due to the system; 6% are due to the worker.

W. Edwards Deming

FSMA vs. 3rd Party GAPs Certification

FSMA

•Food Safety Modernization Act (FSMA) is **regulated by FDA (required by law)** and requires farms to comply with specific food safety practices on *farms that are subject to the regulation*.

•Farm **inspections** will be a part of the FSMA Produce Safety Rule for covered farms.

•PSA Grower Training

3rd Party GAPs Certification

•A third-party GAPs certification is a **buyer imposed program (**voluntary). There are different "brands" of GAPs – ex. Primus GAPs, USDA Harmonized GAPs.

•Certification usually requires an **audit** and a GAP manual.

•Various trainings and workshops

What is Lean Farming?

A framework for organizing and building systems into your farm to:

- Improve efficiency
- Cut waste
- Reduce physical strain on body

Photo by Jen Miller NOFA VT

10 Types of Waste

- O- overburdening (muri)
- U- uneven production and sales (mura)

- D- defects
- O- overproduction
- W- waiting
- N- Not using employees knowledge/strengths/abilities (unused talent)
- T- transportation
- I- inventory
- M- motion
- E- Excess processing (overprocessing)

Introduction to Lean

https://youtu.be/qSVPX6jhLfw

Potential benefits

- Improved time management
- Less risk of contamination
- More enjoyable work environment

Square Roots Farm

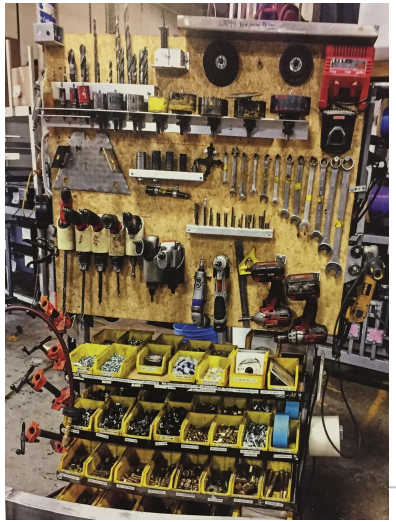


Photo by Ben Hartman
"The Lean Farm"

Tools

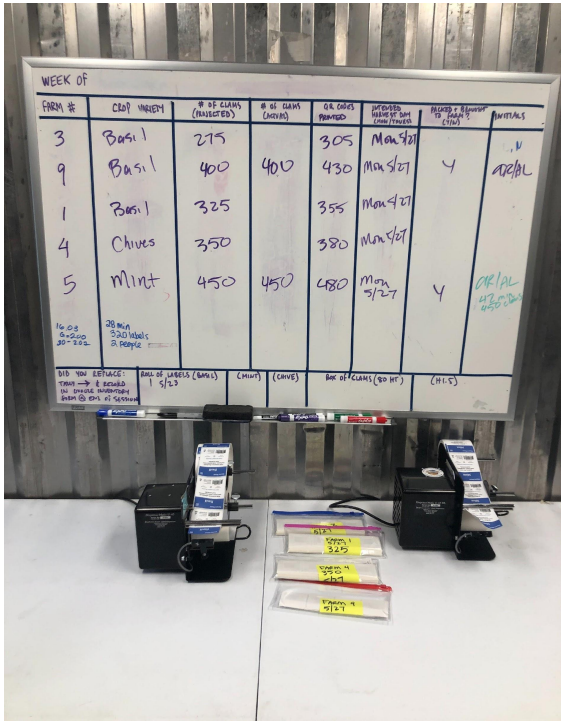
5 S

1. Sort
2. Set in order
3. Shine
4. Standardize
5. Sustain

Labeling of trash and recycle bins at Square Roots

Sort *(seiri)*

- Eliminate unnecessary items in production spaces
- Simplify toolset, identify what can be accomplished with as few tools as possible
- Turn waste into capacity to do more



Labeling Station at Square Roots

Set in order *(seiton)*

Two options for where to put a tool:

1) in its designated location (eye level, put where needed)

or

2) in the hands of a worker

Photo by Ellen Polishuk

Shine *(seiso)*

- Clean the work area
- Neat, clean and tidy spaces motivates workers
- Easier to see what needs to be done

Photo by Ellen Polishuk

Standardize *(seiketsu)*

- Define rules for maintaining the first 3 S's
- Create visual controls

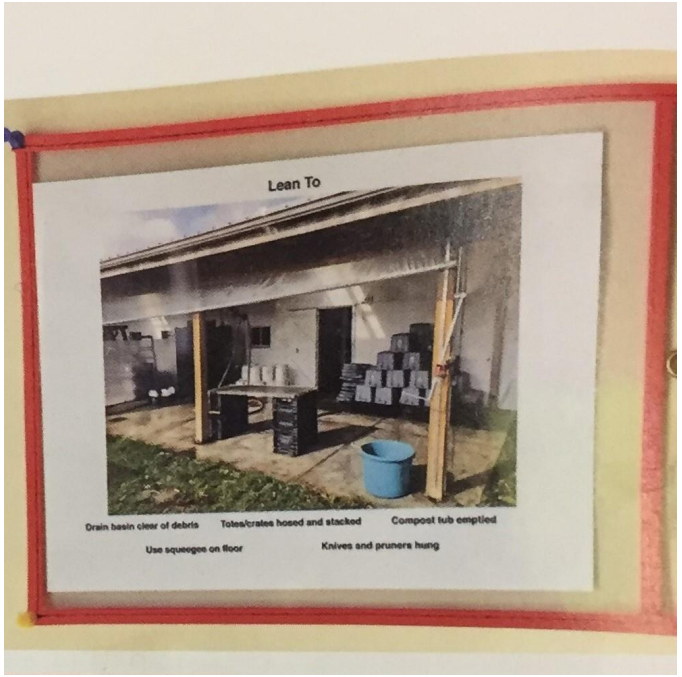


Photo by Ben Hartman

Photo by Ellen Polishuk

Sustain *(shitsuke)*

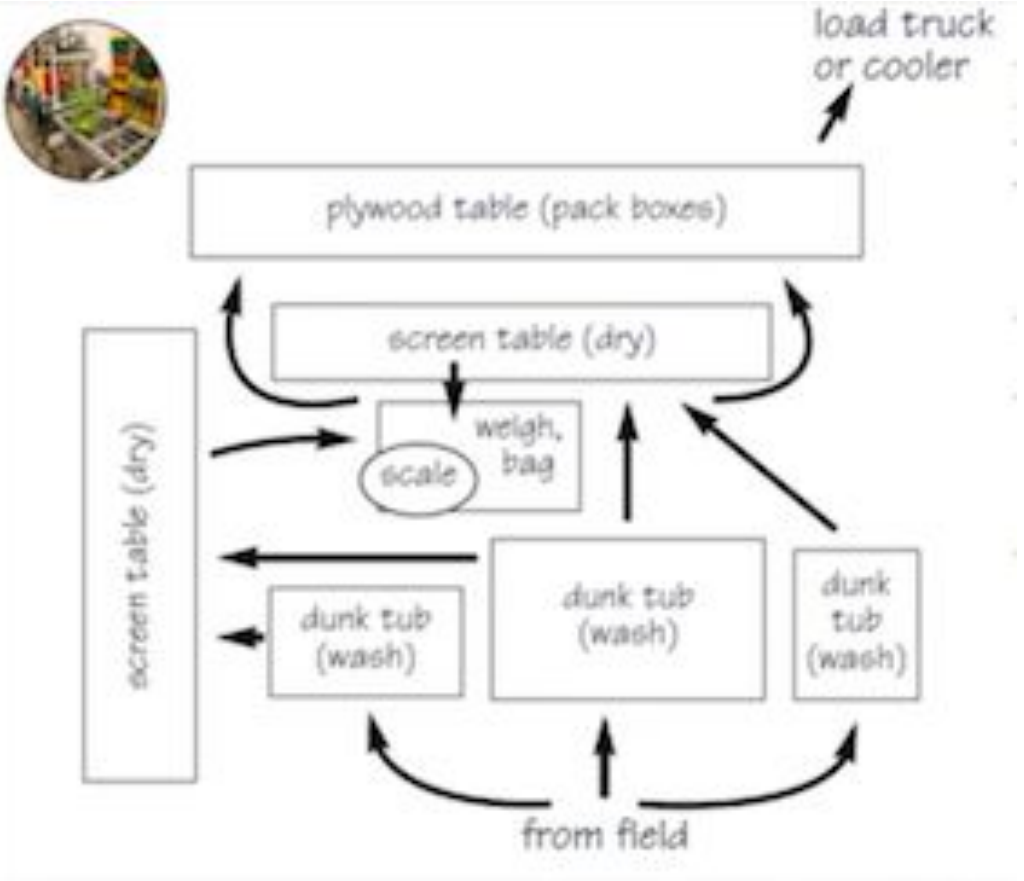
- Everyone understands and practices the rules – workplace organization has become a habit.
- Use performance measures to monitor progress and maintain gains.
- Write up your SOPs!

Photo by Ellen Polishuk

Tools

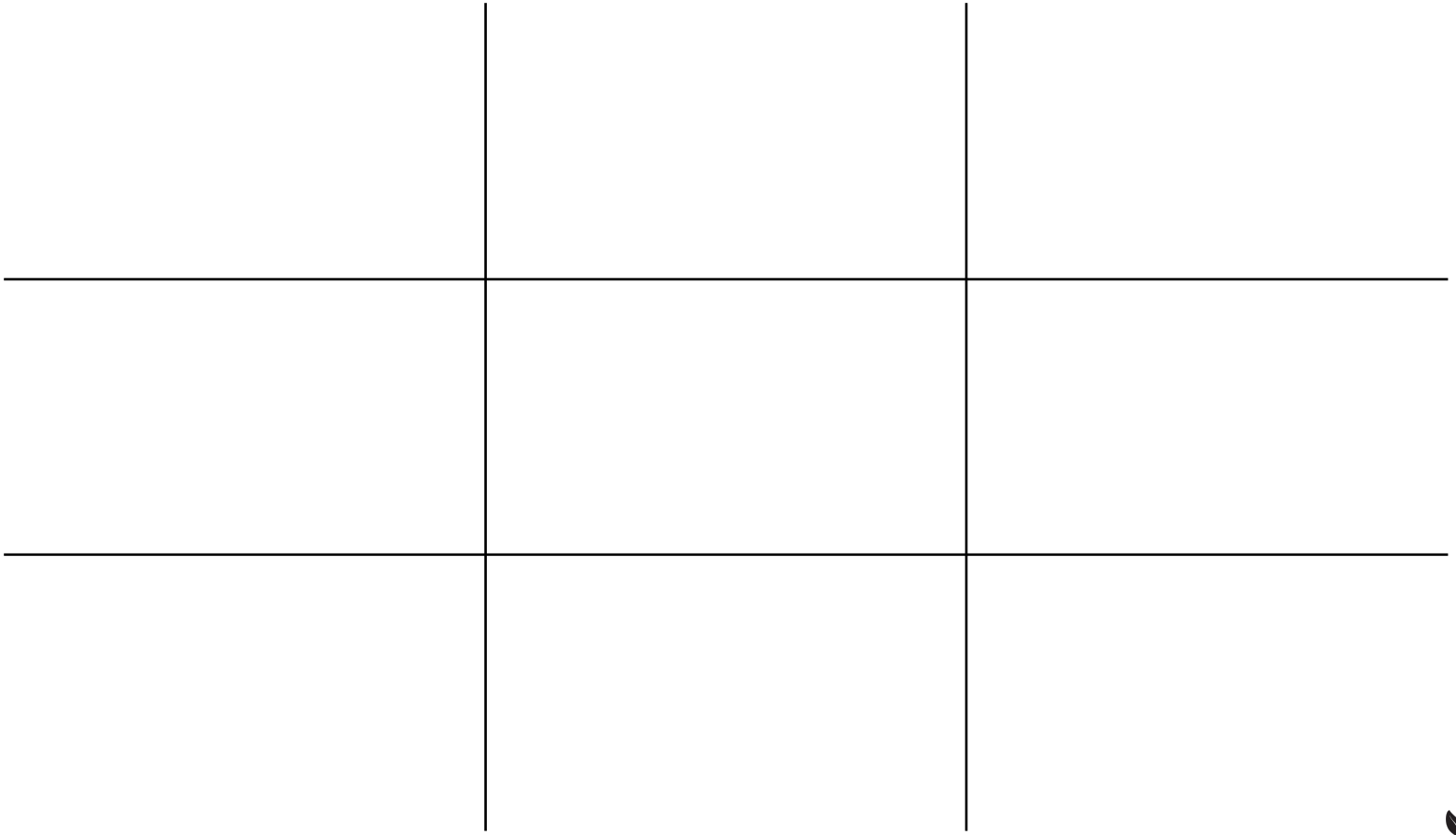
Spaghetti Diagram

Minimize Moves = Faster and safer FLOW from dirty to clean



Team Activity

Standard Work – Pig Production



Standard Operating Procedure

Step 1) Draw a letter M at the top left intersection
Step 2) Draw letter W at the bottom left intersection
Step 3) Draw letter W at the bottom right intersection
Step 4) Draw arc from letter M to top right intersection
Step 5) Draw another arc from top right intersection to bottom right W
Step 6) Draw an arc between the two bottom Ws
Step 7) Draw the letter O in center left box
Step 8) Draw arc from letter M to tangent of the circle
Step 9) Draw arc from left W to tangent of the circle
Step 10) Draw an arc for the mouth
Step 11) Draw an arch for the eyes
Step 12) Draw cursive letter e near top of arc on right
Step 13) Draw two dots in middle of circle for pigs' nose

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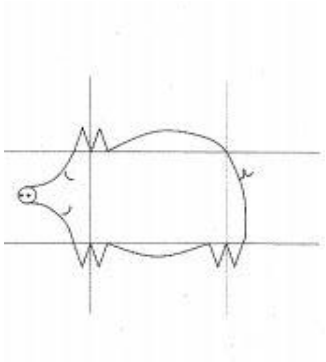


Tools

Mistake-Proofing: "Poka-yoke"

- **Design of processes to eliminate the opportunity for defects/failures**
  - Creating an extra CSA share to preempt a mistake
  - Sizing of gas pump nozzles
  - Glass encased fire alarms
  - Monitoring cooler/freezer temps
  - Drop down menus

Example of Mistake-Proofing: *"Poka-yoke"*

Seeding machine at Square Roots

Where do I start?

- What do I do all the time?
- What would make my life easier?
- What is my least favorite thing to do on-farm?

Where do I start?
Harvest

Process (as much as possible) in the field:
less touches, less dirt in the pack shed

Photo by Ellen Polishuk

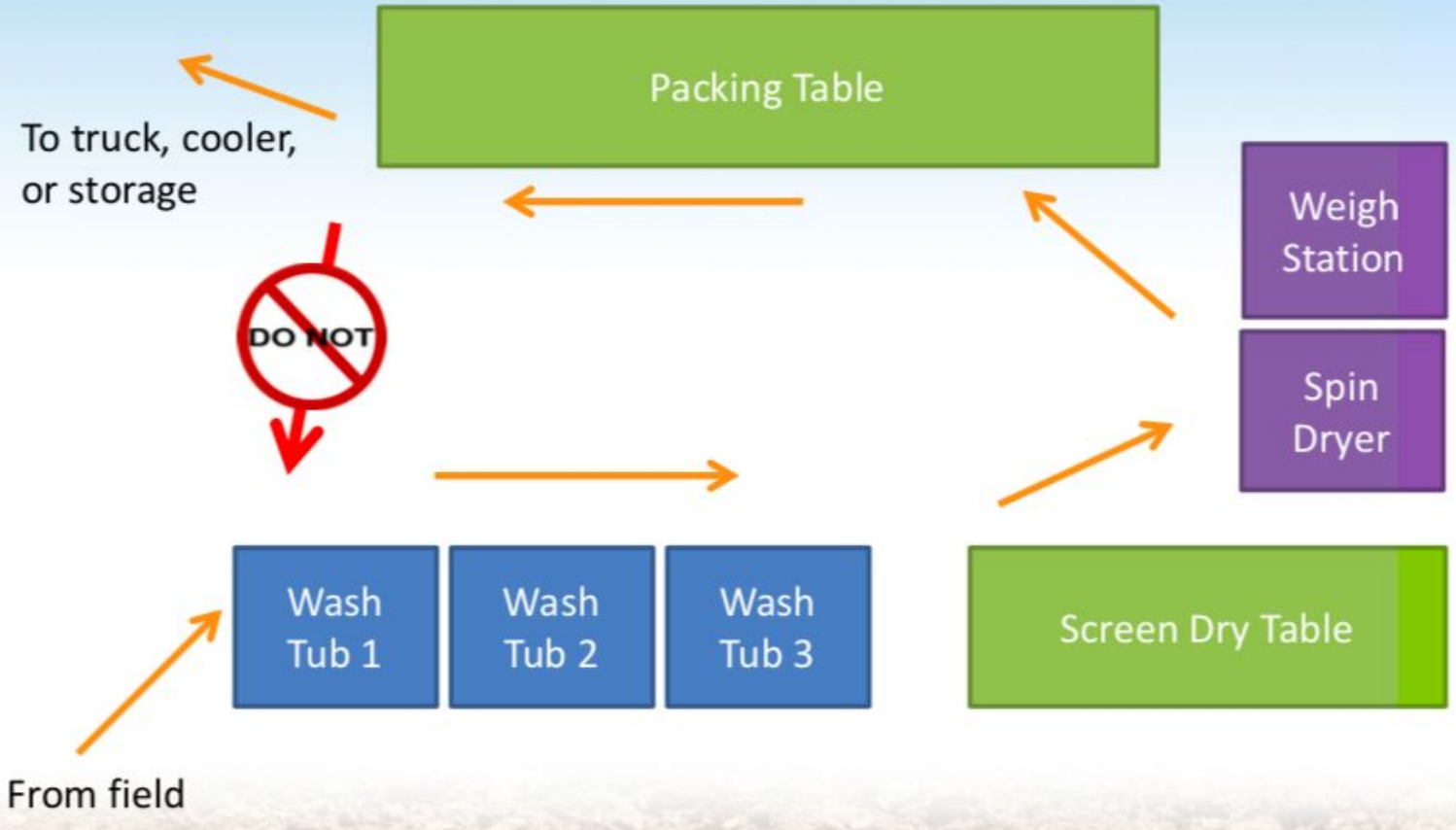
Where do I start?
Harvest

Containers off the ground, in the shade, and accessible!

Photos by Ellen Polishuk and Jen Miller NOFA VT

Someone thinking one step ahead

Wash Station Flow



Where do I start?
Wash/Pack

Where do I start?
Wash/Pack

Open or closed
Cleanability = hygienic/sanitary design

Where do I start?
Wash/Pack

- Wheels
- Retractable hoses and extension cords
- Lots of spigots
- Stackable bins
- Bubbler

Lighten the Load

Photo by Ellen Polishuk

Where do I start?
Wash/Pack

Hanging spray table: easy to move when not needed, easy to clean around

Photo by Ellen Polishuk

Where do I start?
Wash/Pack

- Human scale: ergonomic, off the floor, wheels
- Big cleanable drain
- GOOD lighting

Photo by Ellen Polishuk

NATIONAL YOUNG FARMERS COALITION EST 2010

Questions/Final thoughts

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Standard Operating Procedure Standardize Work Instruction	Status Final Revision 1 Rev. Date 8/29/2007
Procedure Number PIG0001-A	Page 1 of 1

Task	Description	Sub-Task	Instructions
1	Draw a letter M at the top left intersection.	1.1	Bottom center of M touches intersection
2	Draw letter W at bottom left intersection	2.1	Top center of W touches intersection
3	Draw letter W at bottom right intersection	3.1	Top center of W touches intersection
4	Draw arc from letter M to top right intersection		
5	Draw another arc from top right intersection to bottom right W		
6	Draw an arc between the two bottom Ws		
7	Draw the letter O in center left box		
8	Draw arc from letter M to tangent of the circle		
9	Draw arc from left W to tangent of the circle		
10	Draw an arc for the mouth	10.1	Half way between the W and circle
		10.2	Must be a happy pig
11	Draw an arc for the eyes	11.1	Half way between the M and circle
12	Draw cursive letter e near top of arc on right		
13	Draw two dots in middle of circle for pigs' nose.		

Visual Controls

- **Visual Controls build information into the workplace such that**
  - what needs to be done
  - how to perform a process
  - or the status of a process

  can be quickly understood

- **Examples include:**
  - Shadow boards, color coding
  - Jidoka boards, scorecards
  - Warning indicators
  - In/out boxes, kanbans

"The Lean Farm"
Photo by Ben Hartman

Point of Use Storage (POUS)

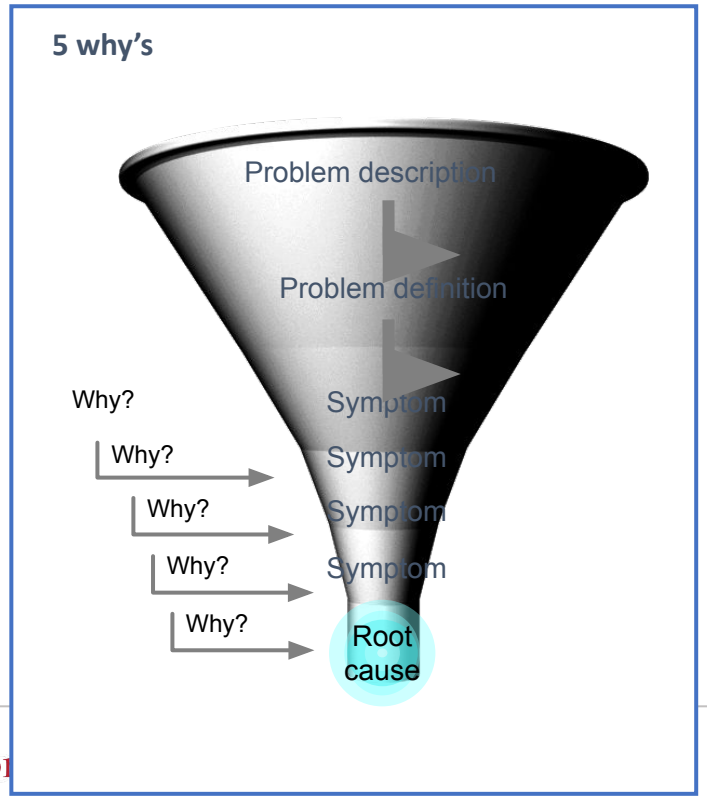
Locating materials, tools, instructions, reference materials at the point that they are needed

"The Lean Farm"
Photo by Ben Hartman

Lean Concepts and Principles

- Collecting customer input and identifying product/service requirements (*value*)
- Eliminating unnecessary steps (*waste)*
- Making the process *flow*
- Respond to customer demand (*pull)*
- Training and empowering employees to identify and act on opportunities as they arise
- Pursue perfection

“Five Whys” – Root Cause Analysis



What is it?

- Method to quickly identify the root cause of a problem starting from a clear problem definition

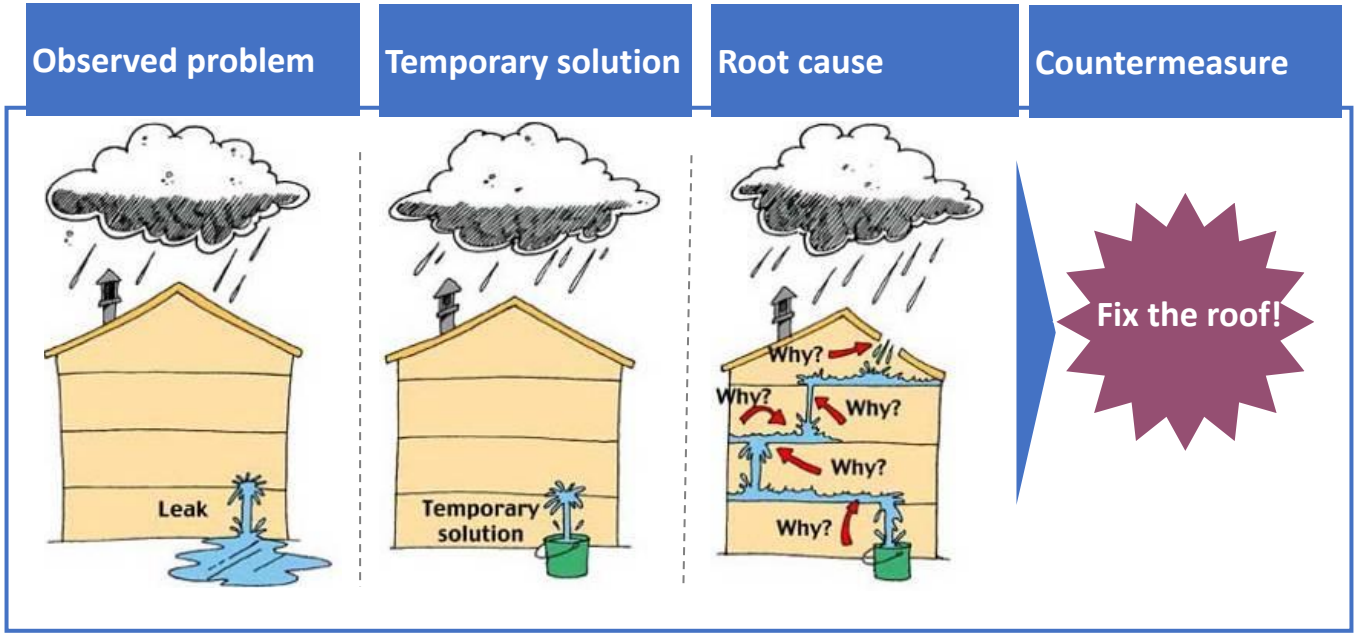
When to use it?

- For simple problems with few elements contributing to the problem

How to use it?

- Start with a clear problem definition
- Ask why till you come to a cause that is actionable and that is within the scope of the problem-solving team
- Find a solution for the root cause identified

Most farms have a tendency to jump at temporary solutions to problems



O-H-I-O *Only Handle it Once*

- **Don’t start something until you have everything necessary and the time to complete the job**
  - Example: Instructing workers to harvest as market-ready as possible