

# Weed management strategies for small-scale diverse organic farms

*Jim Leap*





## **Good weed management involves:**

- *Timing*
- *Strategy*
- *Using all the tools in the toolkit*
- *Planning ahead*

## **Good weed management will:**

- *Save time*
- *Save labor*
- *Improve profitability*
- *Increase yields*

# What is a “weed”?

## *Broad categories:*

- Perennials
- Annuals (spring, summer, fall, winter)
- Biennials
- Broadleaf
- Grasses
- Semi aquatic
- “Problem perennials”
- Noxious weeds

# Where are all these weeds coming from?

- *Wind*
- *Water*
- *Equipment*
- *Compost / soil amendments*
- *Potting mix*
- *Planting stock*
- *Animals*
- *Seeds produced on farm!*

# Weeds can be:

- *Disease vectors*
- *Toxic to livestock*
- *Hosts to insect pests*
- *Extremely persistent*
- *Nearly impossible to eradicate*
- *Highly competitive*
- *Very easily introduced*
- *Extremely drought tolerant*

## Weeds can also be:

- *Great indicators of soil conditions*
- *Excellent nutrient scavengers*
- *Great at providing beneficial insect habitat*
- *Great at keeping soil covered*
- *Great at improving soil quality*

**Timing in terms of  
size is critical**







**Hand labor costs can easily go over \$1,000 per acre per crop in small scale production systems**



Bermuda grass



Johnson grass



Nut Sedge



Bindweed







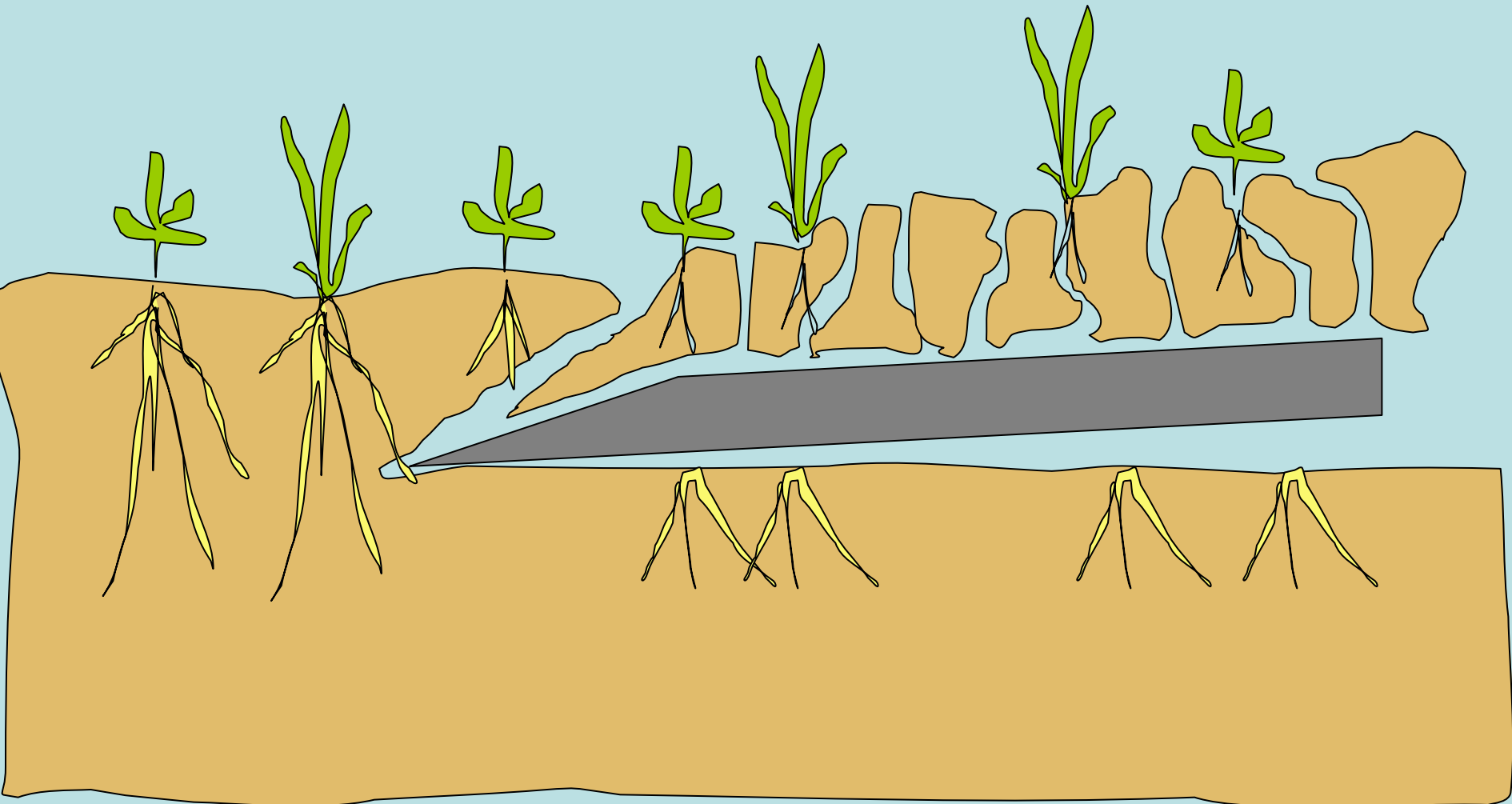
**Under-cutter**



**Spring-tooth  
harrow**



# Under-cutter blade



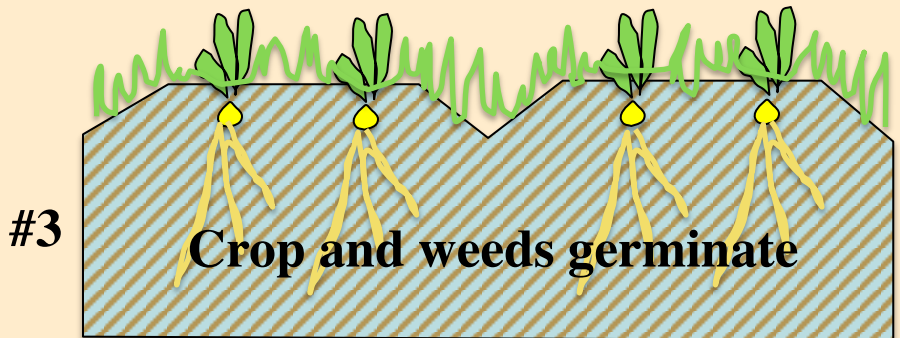
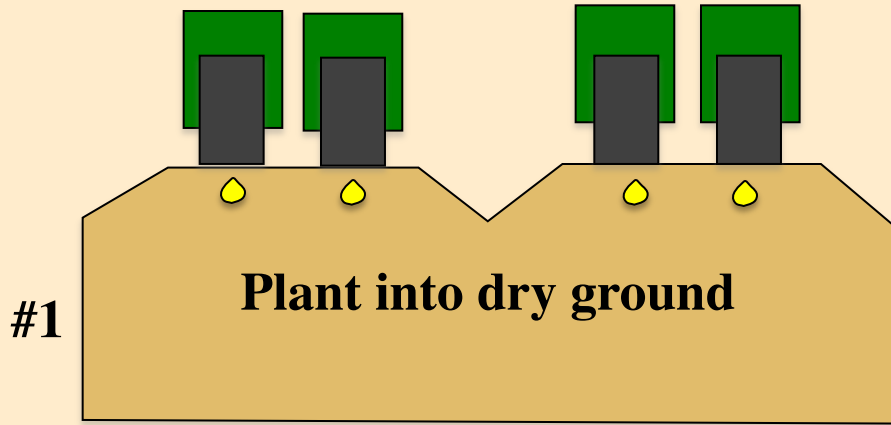
# Attributes of a good seed bed:

- **minimal clodiness**
- **good particle size**
- **stable aggregates**
- **minimal crusting**
- **good nutrient balance**
- **good drainage**
- **no perennial weeds**
- **minimal weed seed**
- **no plow pan**
- **uniform shape**
- **minimal compaction**





# Scenario one:

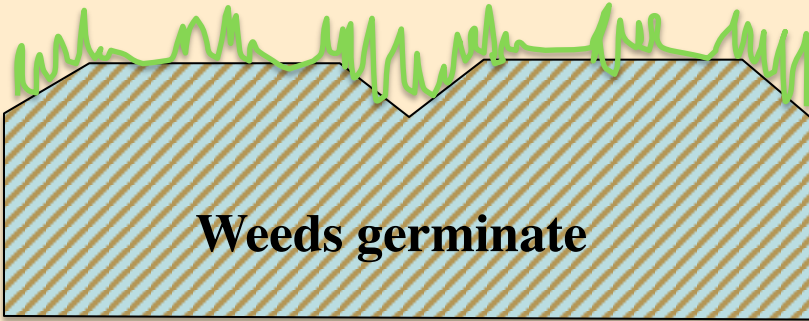


## Scenario two:



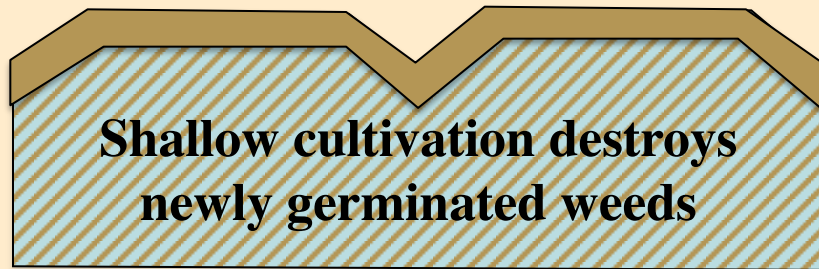
#1

**Pre-irrigate to initiate weed germination and fill root zone**



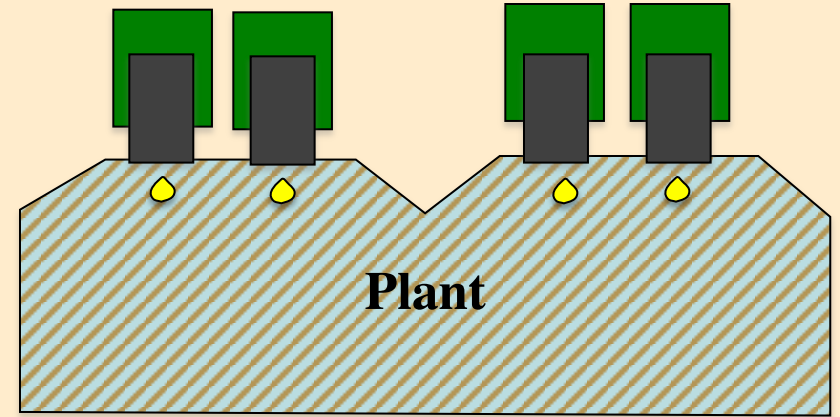
#2

**Weeds germinate**



#3

**Shallow cultivation destroys newly germinated weeds**



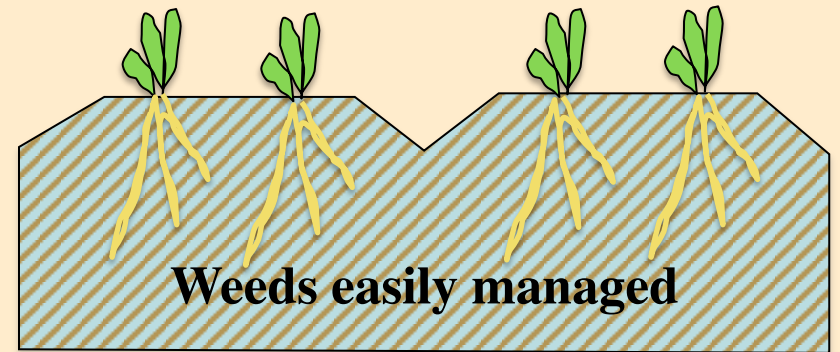
#4

**Plant**



#5

**Irrigate to initiate germination**



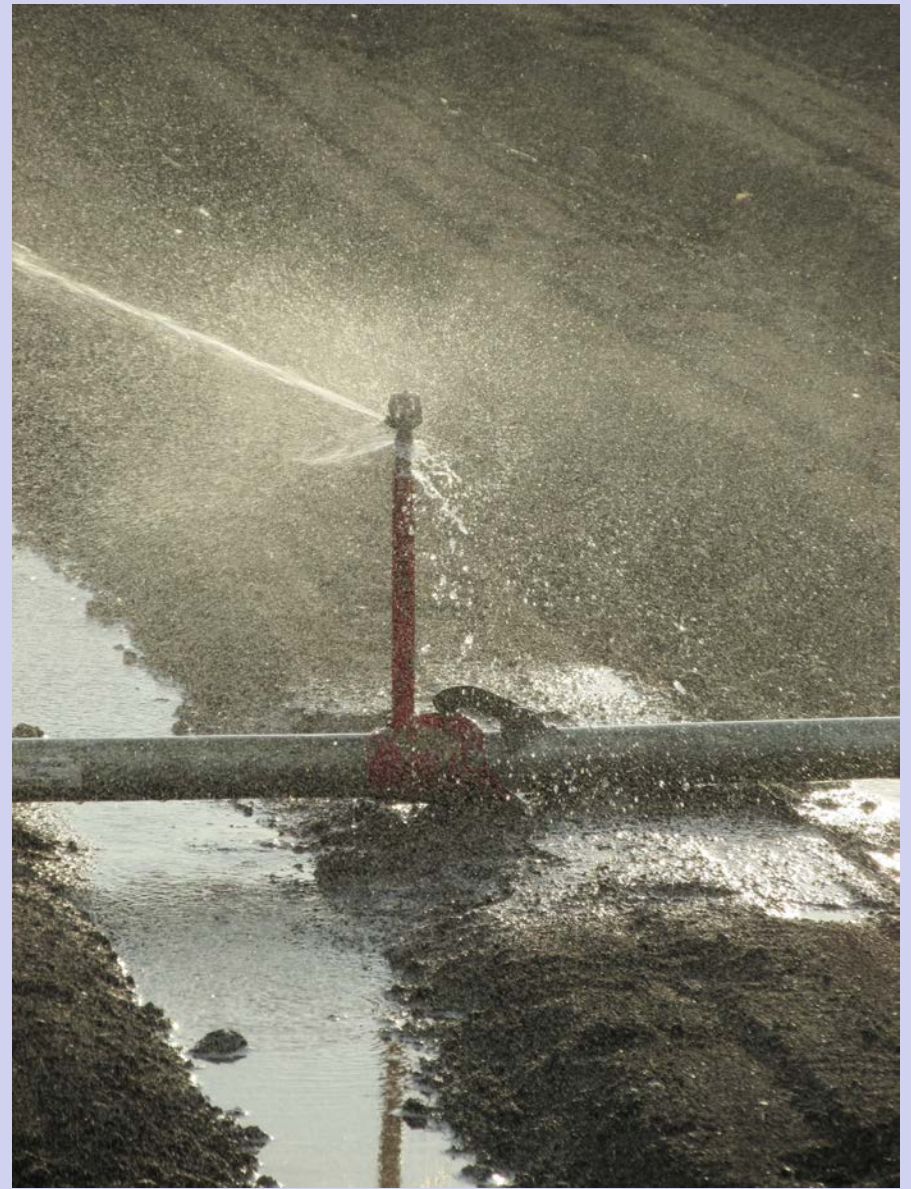
#6

**Weeds easily managed**





**Good for weed management**



**Bad for weed management**





**Good cover crop  
management is critical  
for good weed control.**



## *Weed management strategies when planting cover crops*

Plant dense stands

Plant early

Plant weed suppressive species (rye, mustard)

Plant to moisture

Plant cover crop on beds

Use drill to plant cover crop



**Finger weeder**

## *Score your weed management:*

- 1. Crop rotation**
- 2. Dense cover crop**
- 3. Managed fallow**
- 4. Crops planted on uniform beds**
- 5. Effective use of mechanical cultivation**
- 6. Use of pre-irrigation**
- 7. Use of flame weeder**
- 8. Prevention of weed seed set**
- 9. Uniform and "leak free" irrigation**
- 10. Use of transplants**



# Questions?

