

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*

Weeds can be:

- *Disease vectors*
- *Toxic to livestock*
- *Hosts to insect pests*
- *Extremely persistent (hard seed coat)*
- *Nearly impossible to eradicate*
- *Highly competitive*
- *Very easily introduced*
- *Extremely drought tolerant*
- *Highly adaptive*

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*
- *Important for soil microbial diversity/abundance*
- *Nutritious / Medicinal / Marketable*

**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



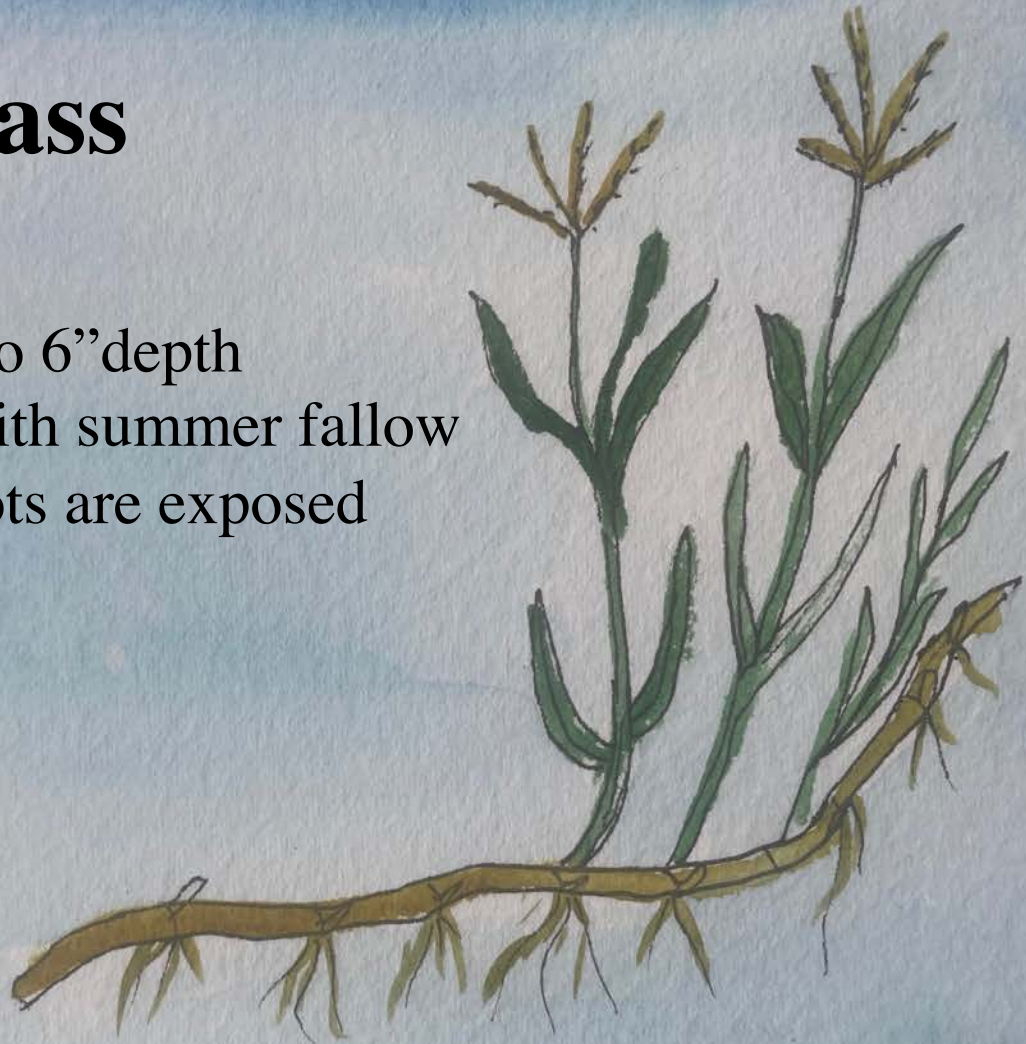
Bindweed



Bermuda Grass

Cynodon dactylon

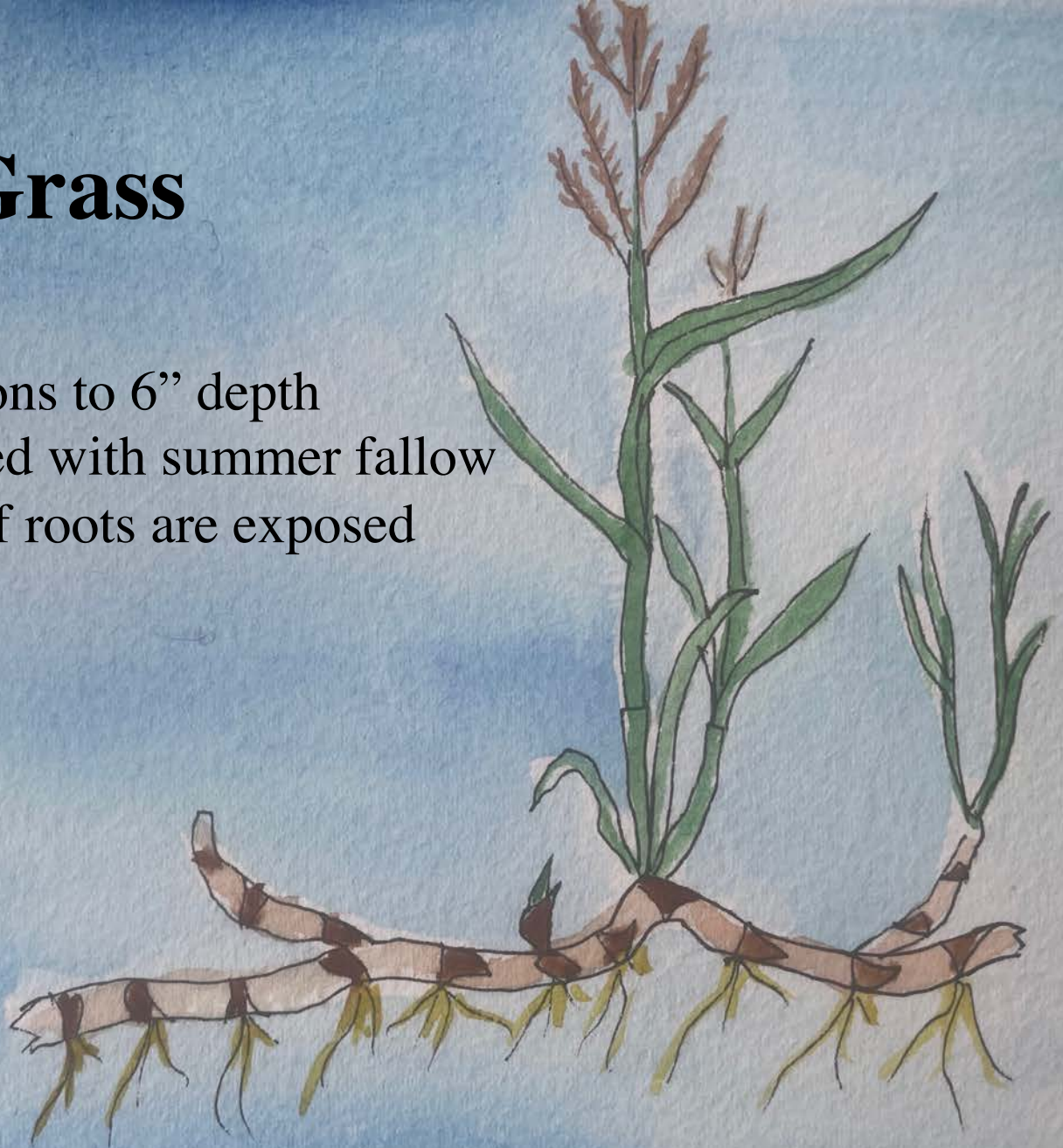
- Rhizomes/stolons to 6" depth
- Can be managed with summer fallow
- Will frost kill if roots are exposed
- Perennial



Johnson Grass

Sorghum halepense

- Rhizomes/stolons to 6” depth
- Can be managed with summer fallow
- Will frost kill if roots are exposed
- Perennial



Yellow Nutsedge

Cyperus esculentus

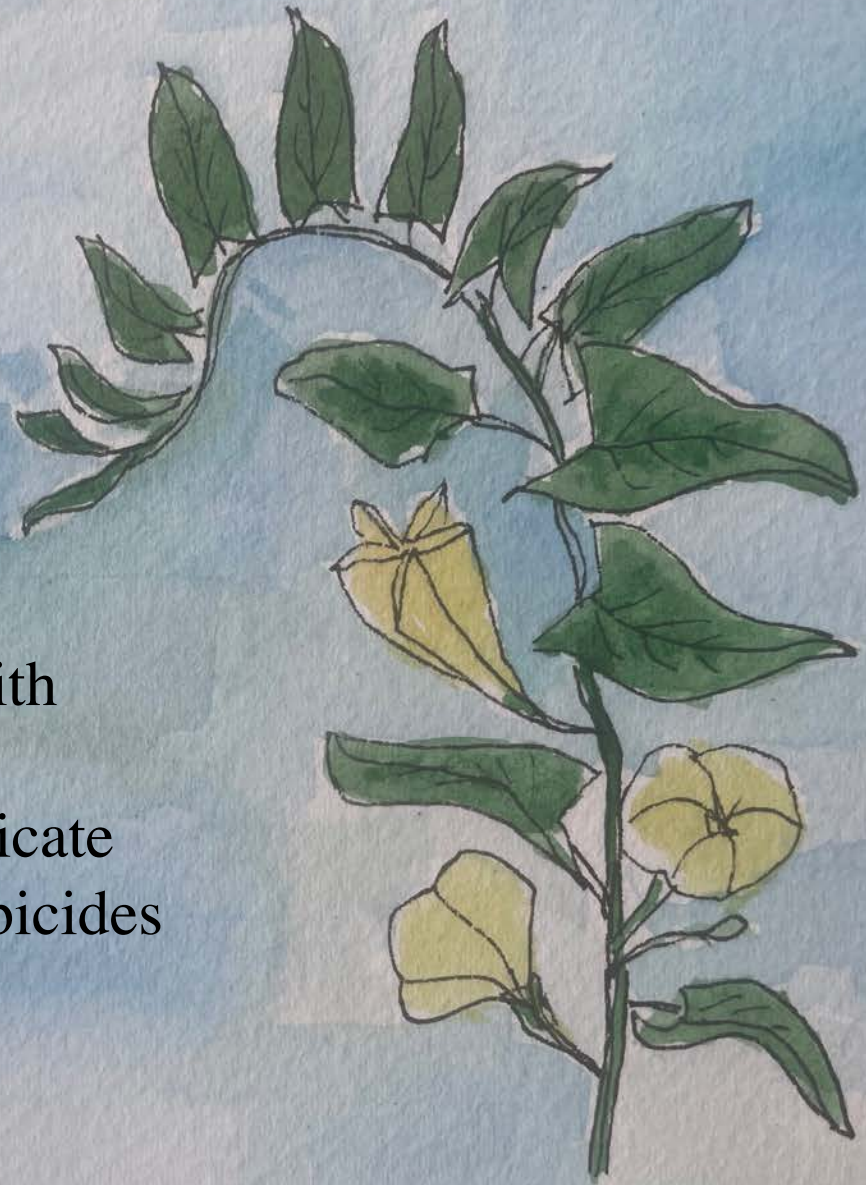
- Tubers to 6" depth
- Prefers water logged soils
- Takes 3 or more years to eradicate
- Tubers have capacity to sprout 3 times
- Eradication difficult

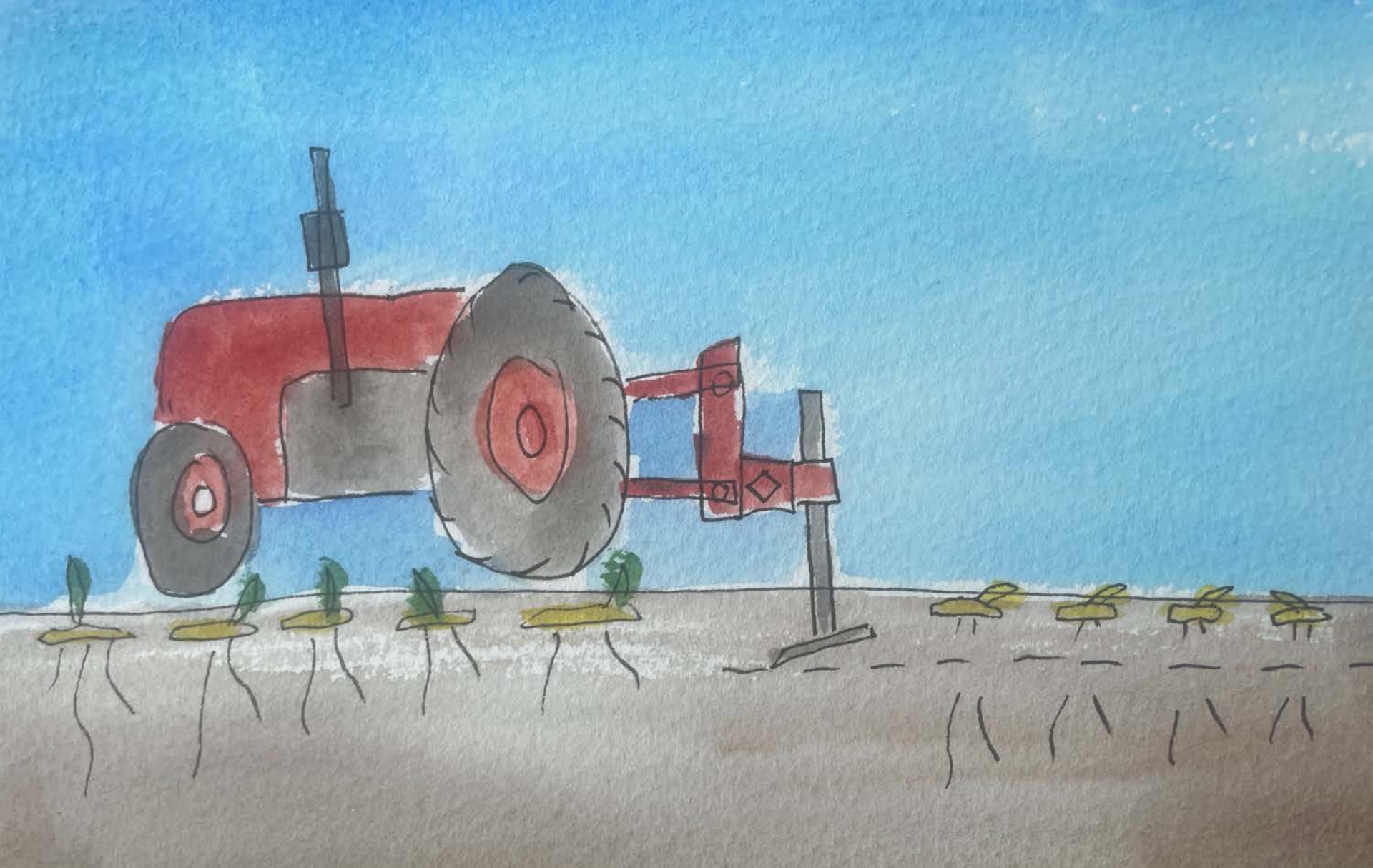


Field Bindweed

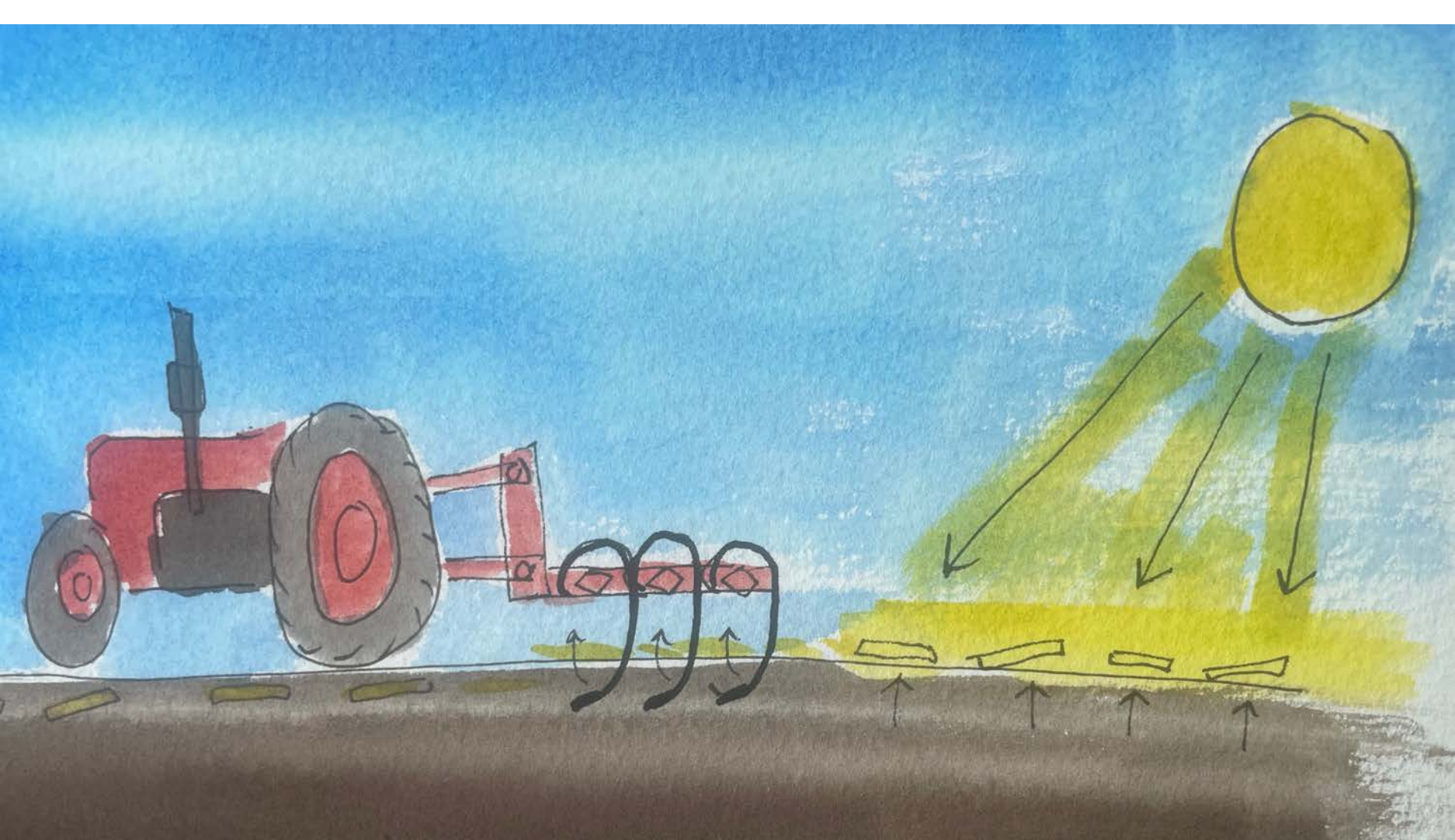
Convolvulus arvensis

- 70% of roots in top 24"
- Roots can reach 20 feet
- Drought tolerant
- Prefers heavier soils
- Can be "kept in check" with fallow management
- Nearly impossible to eradicate without conventional herbicides

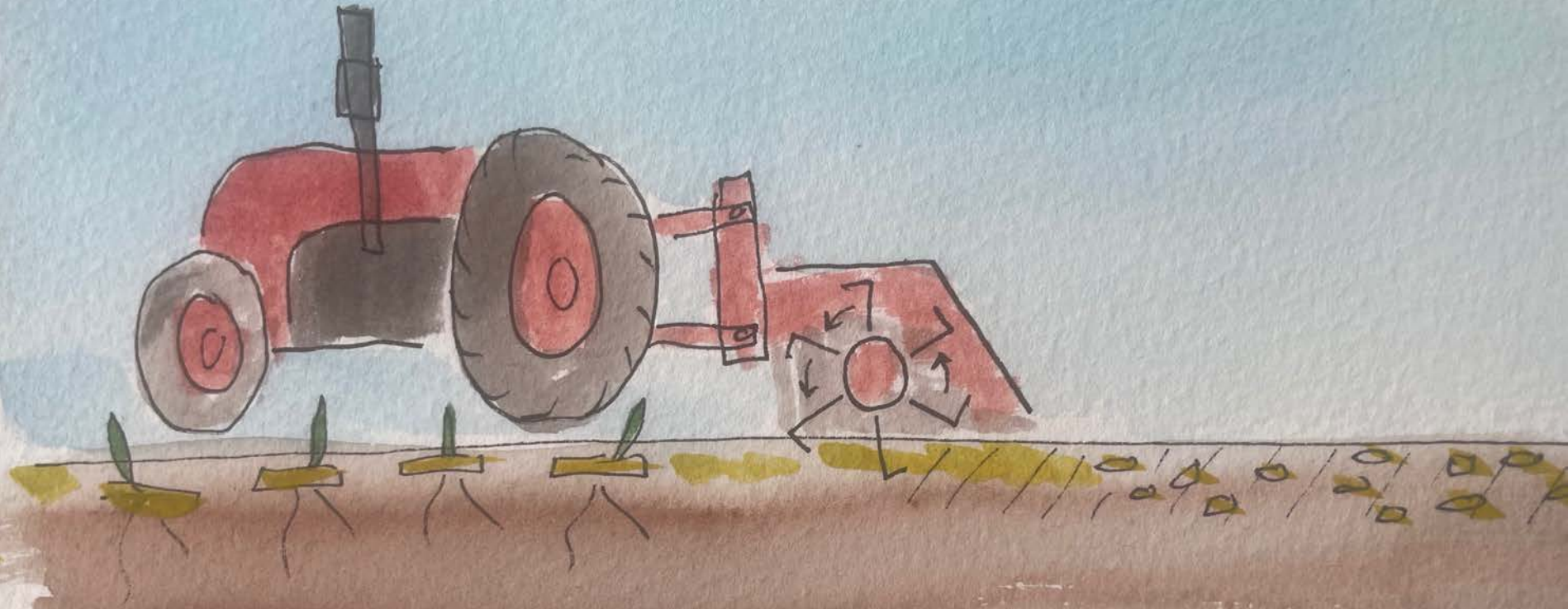




Use of undercutter for control of Bermuda grass / Johnson grass



Following undercutting springtooth cultivator used to bring rhizomes/stolons to surface for desiccation



In heavily infested areas tillage with rototiller or disc can cut and spread rhizomes potentially increasing population

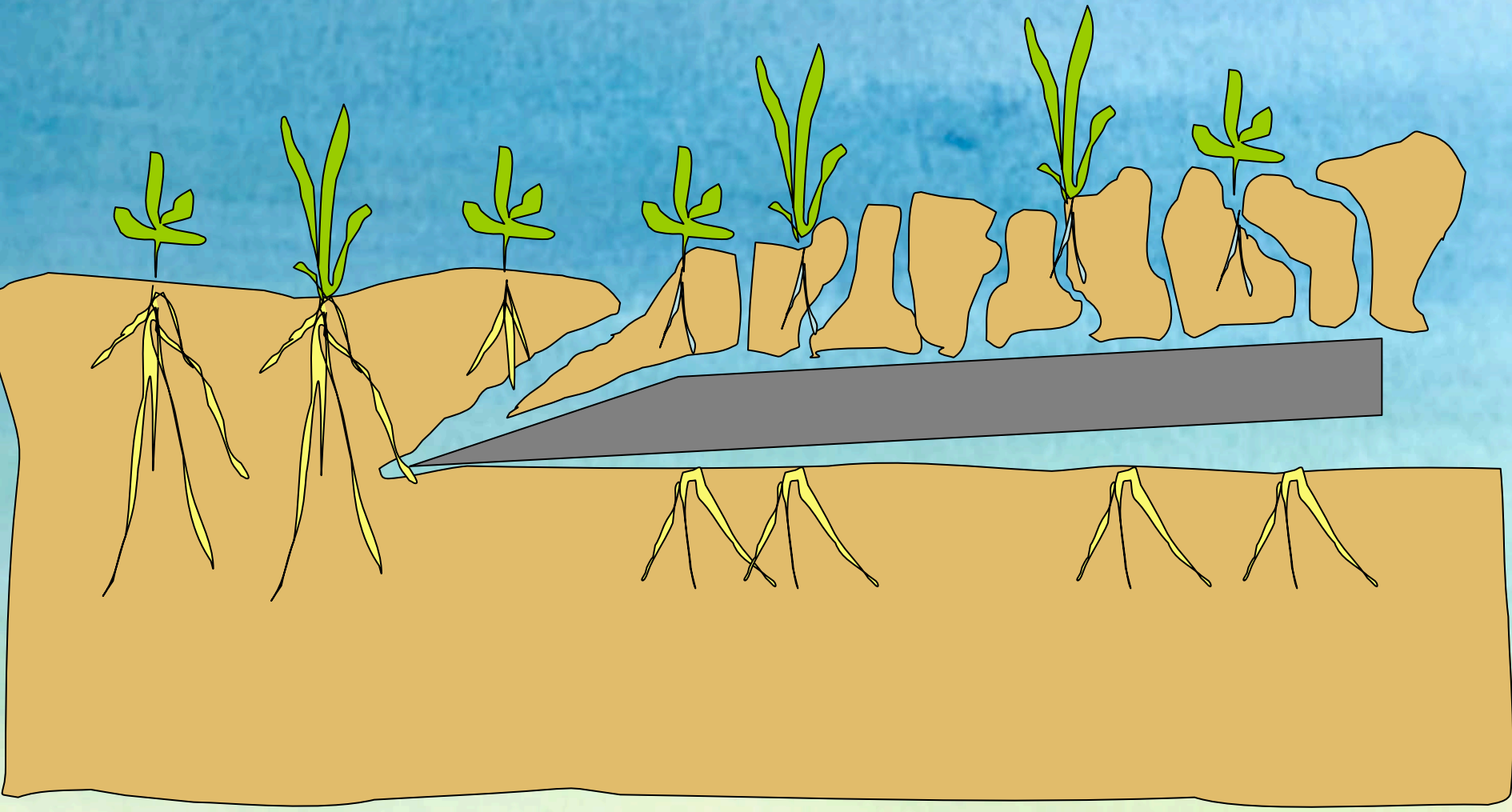


Under-cutter

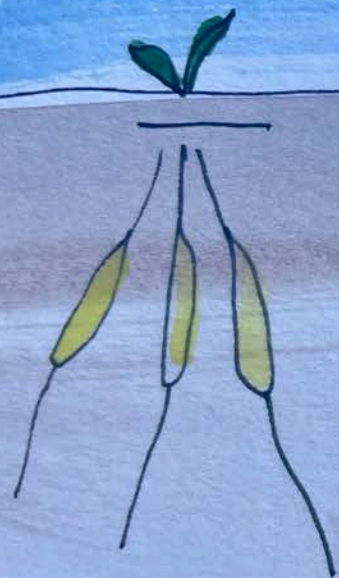


Spring tooth harrow

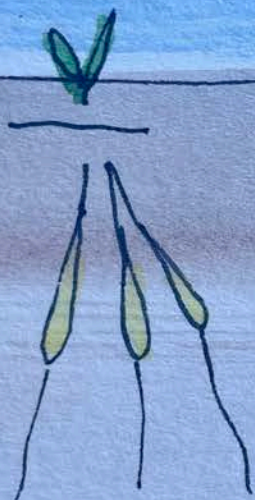
Under-cutter blade







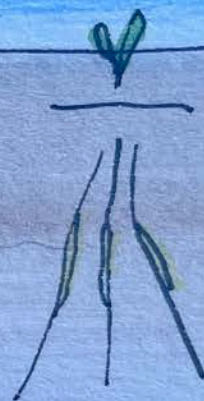
JUNE



JULY



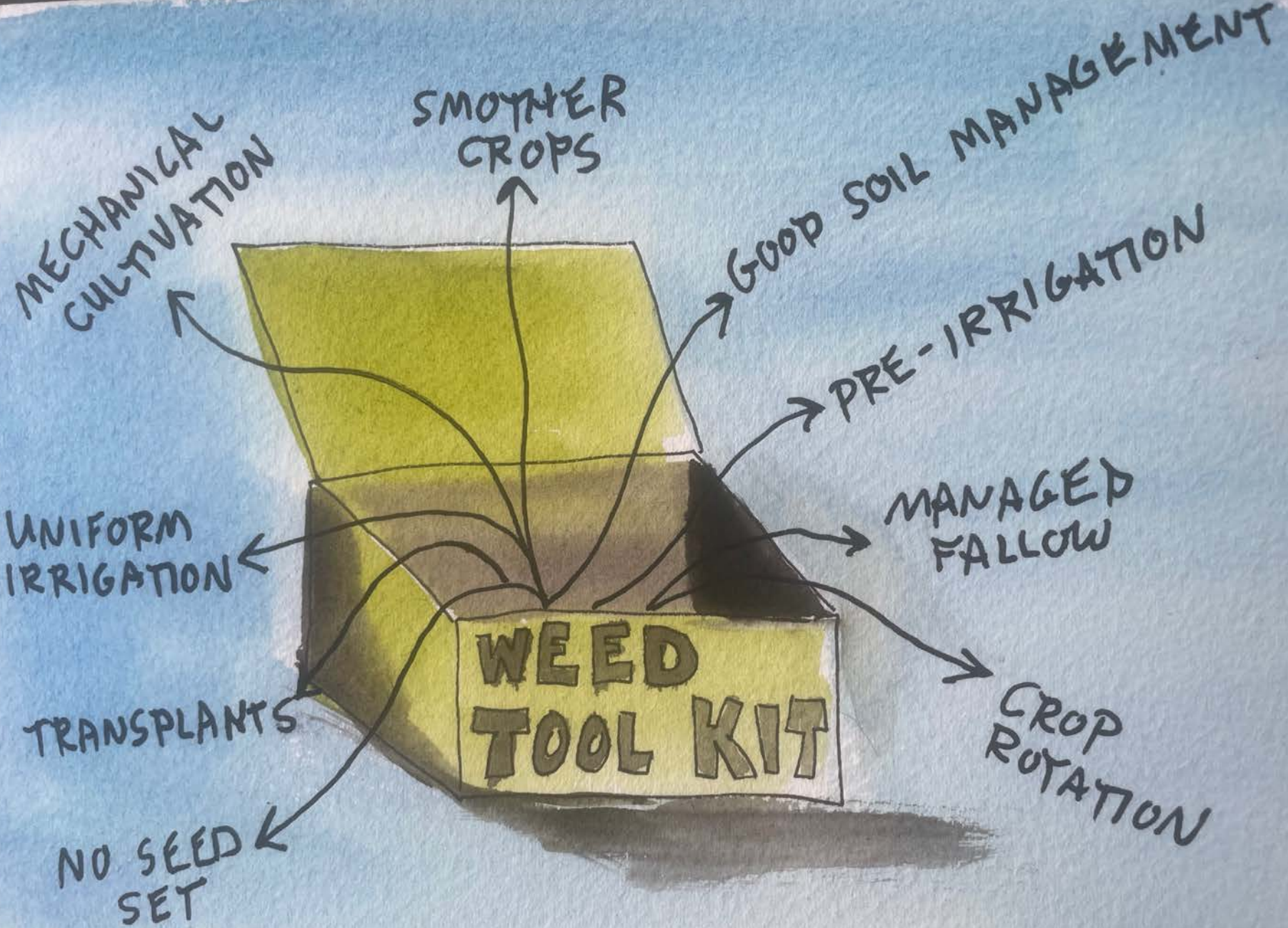
AUG



SEPT



**WEED
TOOL KIT**



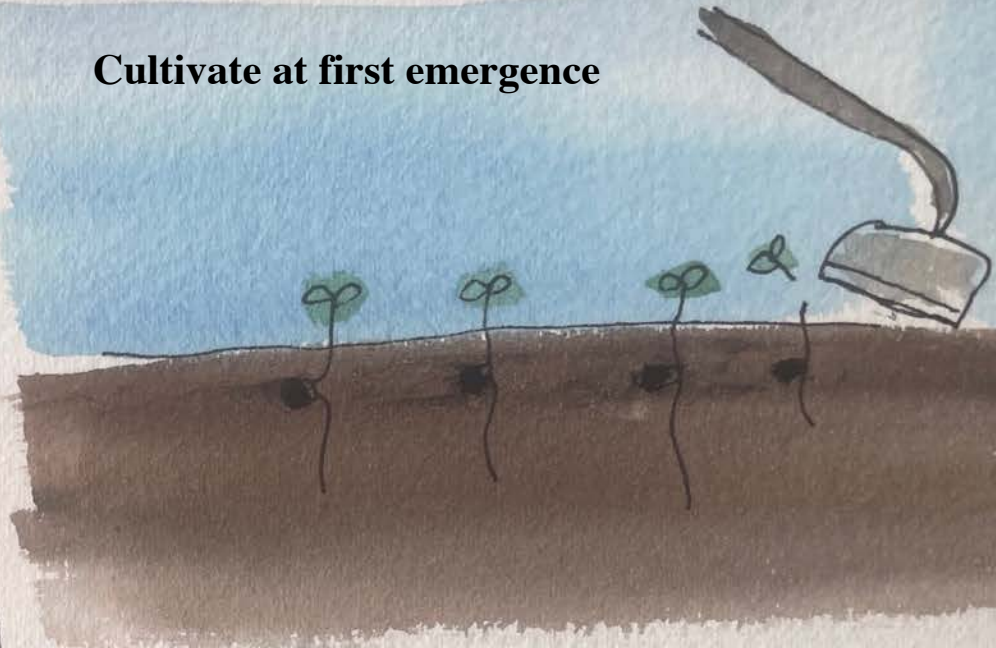


Crop rotation critical for perennial weed management

Remove flowers ahead of seed set



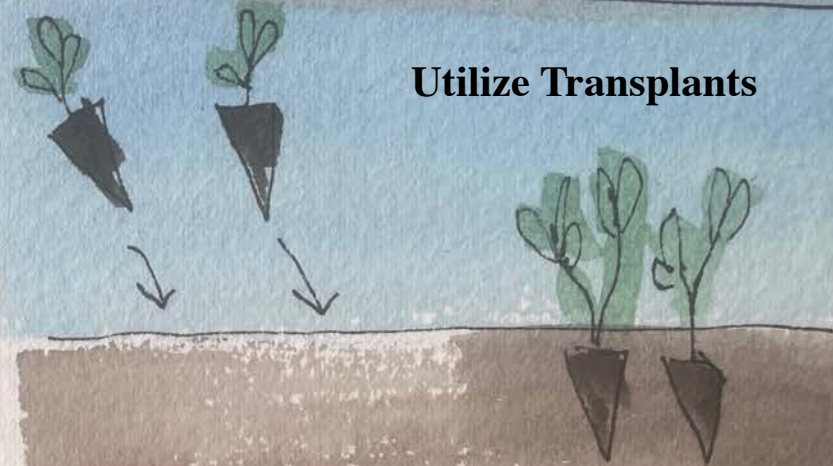
Cultivate at first emergence



Maintain irrigation uniformity



Utilize Transplants





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

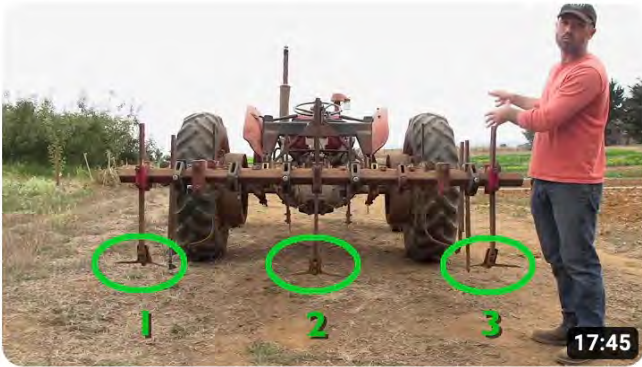
Plant cover crop on beds

Use drill to plant cover crop



Finger Weeder

Resources:



Introduction to Weed Management in a Small Scale Organic Production System HD

567K views • 8 years ago

M Martha Brown

Organic weed control techniques used at the UC Santa Cruz Farm, including both mechanical cultivation and hand hoeing.



Introduction to Weed Management In a Small Scale Organic Production System | A Production of... 8 chapters



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Weed photo gallery

The UC IPM Weed Photo Gallery includes many, but not all, weed species and landscapes.

Choose a category below or skip to a [LIST OF ALL WEEDS](#).

Identify your weeds



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Revised 10/11

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- [Impact](#)
- [Management](#)
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Questions?

