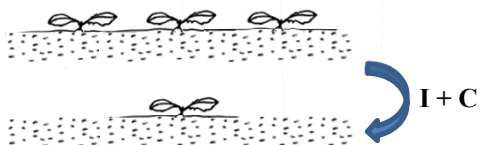


Putting it into practice...



For annual and biennial weeds:

Repeated irrigation (I) + cultivation (C) of weed seedlings will reduce the weed seed bank in the soil for the season. It is also critical to prevent new seed production.



For perennial weeds:

Repeated cultivation on small and young leaves will exhaust the energy reserves and lead to rhizomes/rootstock death.



For perennial weeds, unrepeatd cultivation will only spread propagules and aggravate infestation.

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Weed Management

The success of weeds in the field is due to their strong ability to reproduce. Weed seeds can be dispersed by wind, water, animals and humans, survive animal digestion, tolerate a wide range of environmental conditions, and remain viable in the soil for many years. The roots of some perennial weeds can spread 100 feet laterally and extend 30 feet deep into the soil. These characteristics can make weeds difficult to control. Organic farming relies mainly on mechanical, biological, and cultural strategies.

Some examples of control practices:

Mechanical: hand weeding, mowing, tillage, mulching, flooding and burning.

Biological: use natural enemies like insects, pathogens and animals.

Cultural: crop rotation, crop residues, cover crops, different planting dates, crop density, and crop design.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
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OHIO AGRICULTURAL RESEARCH
AND DEVELOPMENT CENTER

Weed Life Cycles and Management



**DEPARTMENT OF HORTICULTURE
AND CROP SCIENCE**

Weed Life Cycles

A weed is a plant that grows where is not required and that interferes with the growth of a cultivated plant.

It is critical to know a weed's life cycle for effective control!

- **Annual:** species that complete their life cycles in one growing season. Reproduction is mainly by seed (control in the seedling stage).
- **Biennial:** species that complete their life cycle in two growing seasons. Reproduction is mainly by seed (control in the seedling stage).
- **Perennial:** species that grow continuously from the same root or stem for many seasons. They reproduce from seeds, rhizomes, stolons, or root pieces. There are *simple perennials*, that have a deep taproot and reproduce mainly by seed (control in the seedling stage), and there are *creeping perennials*, with a creeping root system that reproduce mainly through stolons, rhizomes, and root pieces (control before planting).



Common Weeds in Ohio Field Production...



Giant Ragweed
Ambrosia trifida
Annual



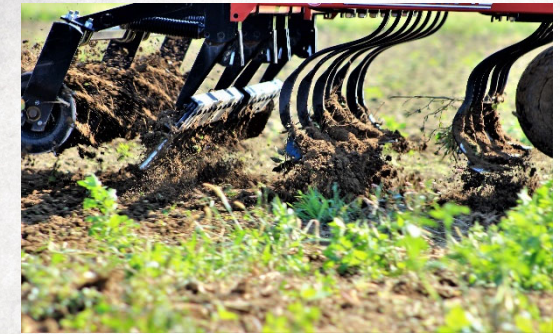
Curly Dock
Rumex crispus
Simple perennial



Field Bindweed
Convolvulus arvensis
Creeping perennial



Canada Thistle
Cirsium arvensis
Creeping perennial



Recommended cultural strategies

- **Cultivate before planting.** Reduce the weed seed bank by cultivating periodically until planting time.
- **Transplanting.** Crops that have small seeds are slow to establish and are less able to compete with weeds.
- **Tillage depth.** Keep in mind that deep tillage will carry seeds to the soil surface and stimulate their germination.
- **Frequent cultivation between rows.** Control weeds when small. Large weeds are likely to survive cultivation.
- **Use clean mulch.** Make sure mulch amendments are free of weed seeds.
- **Crop rotation.** The use of different crops disrupts weed growth cycles, facilitating their control.
- **Use allelopathic crops in rotation.** Crops like barley, rye, sorghum, wheat, alfalfa, clovers, vetches, *Brassica* spp., *Heracleum*, linseed, radish, sunflower, and sweet potato release chemicals that inhibit weed seed germination and seedling growth.