

Conservation Corner for June6, 2017

Know Your Weeds

There are many options for controlling weeds once you know what you're dealing with

By Jodi DeHate
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If you have a flower or vegetable garden you know how much of a pain weeds are. Farmers deal with weeds in their crops too. Let's take a look at some of what's involved in managing weeds on a farm.

Types of Weeds

To come up with an effective management strategy, a farmer first needs to understand the growth patterns of the weeds on his or her farm. Weeds are divided into two main types: grasses and broadleaves. Quackgrass, crab grass, fall panicum, and foxtail are common grass-type weeds. Dandelions, burdock, purslane, and giant ragweed are examples of broadleaf weeds.

Within those types, weeds are further classified by how long they live – are they annuals, biennials, or perennials? Annual weeds are weeds that complete their life cycle in one growing season. Examples would be pigweed, lamb's quarters, and foxtail. Some annuals are categorized as summer or winter annuals meaning that the summer annuals won't germinate until temperatures are warmer. The winter annuals germinate in the fall and are the early weeds we see in the spring.

Biennials are plants that take two years to complete their life cycle such as wild carrot.

Perennial weeds are the ones that come back year to year in the same place such as dandelions and Canada thistle. Knowing these differences is key into understanding how to manage them.

How farmers manage weeds

Unlike gardeners, farmers are not going to hand pull weeds when they farm anything larger than several acres. It's just not feasible. So farmers use a variety of methods to manage weeds. It's like having many tools in a toolbox at your disposal to do a similar job. Each tool has its own tradeoffs.

Tillage

Many farmers like to use tillage to create a "clean" seed bed before planting in order to give the seed the best start possible. Winter annuals come up early in the season and tillage can often take care of those.

Crop rotation

Rotating crops helps break up weed pressure especially in perennial crops like alfalfa. Most dairy farms in this area rotate their hay crops every three to four years.

Cover Crops

Crops that are planted to provide environmental benefits rather than to produce food are called cover crops. They can help smother weeds out, especially if they are seeded between the rows of the main crop.

Herbicides

Herbicides can either kill existing vegetation, or prevent seeds from germination. Before biotechnology, many farmers used both types of herbicides on a crop. Summer annuals come up much later in the season and another round of spraying may be needed to kill them.

Mulch

Mulching is used in some types of vegetable and fruit production. It's typically plastic sheeting laid down with drip irrigation laid under it with the vegetable plants planted through the plastic. Tomatoes, peppers, strawberries, and melons are all commonly grown using this method.

Flaming

A flaming tool is a piece of machinery that uses a flame to burn weeds in its path. There are shields set up to protect the crop from being burned. A propane tank is mounted on the piece of machinery as the source of fuel for the flame. This is used primarily in organic production. It's a fun tool to watch!

Trade-offs

Each method talked about above has its positives and negatives. For example we know that more tillage breaks up organic matter in the soil. Organic matter is key to holding water in the soil and helpful for plant growth. On the other hand, using herbicides to kill weeds means that a farmer also needs to consider how long the herbicide will have active residues in the soil, whether or not it is likely to leach, and how to rotate weed control methods so that "super weeds" that are resistant to herbicides don't develop.

Future of weed management

Weeds will always be part of working in agriculture. In order to keep managing them effectively, precisely, and in environmentally safe ways, farms will always need to keep adapting how they deal with weeds and will need continual innovations provided by science.

Imaging from drones is already being used to help identify problem spots or stresses in field crops. Larger drones are starting to be used to spot spray small problem areas. Another option currently being researched is automated weed control using computer and sensor technology to identify weeds in the field. With this technology, a single pass can be made over the field, using one herbicide on a summer annual broadleaf, and a different herbicide on a perennial grass.

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All photos were taken by Jodi DeHate



The tall wheels and high clearance of this self-propelled sprayer make it possible to apply an herbicide to control weeds after a crop is up and growing. It also enables the farmer to apply nitrogen fertilizer at the optimum time for crop uptake.



It is possible to control weeds in perennial crops, such as alfalfa growing in Osceola County, without plowing up the field. The left side of this alfalfa field was treated with a selective herbicide that targets the weed “yellow rocket” while not harming the alfalfa.



Know your weeds and what their growth patterns are is crucial to success in managing them. In this photo alone there are annual (yellow rocket), biennial (burdock and white cockle), and perennial (dandelion) weeds.