

WEED MANAGEMENT

A GUIDE FOR CUT FLOWER FARMERS

Every flower grower needs a weed management plan, using strategies not only to manage weeds when they pop up but more importantly to reduce their numbers over time.

WEED IDENTIFICATION AND TRACKING

Weed management starts with weed identification: you can't manage weeds effectively if you don't know what they are. This process is as simple as getting a good weed guide for your area (readily available in bookstores or online), and then each week, walking your fields and identifying the most common weeds you see.

Consult the guide to determine its key characteristics:

- Is it an annual or perennial weed?
- Does it spread primarily by seed? Or by underground roots?
- What is its lifecycle? How long until it sheds seeds?
- Does it grow in cool weather or warm weather?

Once you have identified your problem species, you can develop a plan to manage them.

WEED MANAGEMENT STRATEGIES

Unfortunately, your soil is most likely filled with weed seeds. We call this your 'soil seed bank'. Weed management is all about reducing your soil seed bank over time. This depends on, first, stopping the weed seeds from germinating, and second, if they germinate, stopping them from going to seed. There are a number of ways to achieve this.



Limit tilling

Small flower farms often rely on tillage for weed management. However, tillage ultimately brings weed seeds in the soil up to the light where they will germinate, and in the long run, keeps weeds coming back. Over tillage can also harm soil ecosystems, creating additional problems. Limiting tillage as much as possible is your best long term solution.

Create a stale seed bed

If you do need to till an area, then try a stale seed bed approach. This approach encourages weeds to sprout and then eliminates them when they are small.

Follow these steps:

1. Till and water.
2. Cover the area with clear plastic and weigh down the edges as tightly as possible, creating a greenhouse effect.
3. Wait for the weed seeds in the top layer of soil to sprout.
4. Leave the plastic there until the weeds over-heat and die, or remove the plastic and surface hoe or burn away the tiny seedlings.
5. Plant in the prepped soil, without tilling the area again. Your weed pressure will now be less in this area.

Keep on top of them

With fast growing crops, like sunflowers for example, the easiest and most efficient approach is often to destroy weeds when they are tiny, using a wheel hoe hand hoe, or flame burner. Hoe your rows before you really see the seeds. As the old joke goes, "Why does Santa Claus have such a nice garden? Because he loves to Ho Ho Ho."

Cut weeds before they seed

Even in the best systems, weeds get away from us. Sometimes the best option is to cut the crop residue and weeds to (at least) prevent the weed seeds from falling to the soil. Weed eaters, sickle bar mowers, mulching mowers, etc. are all good tools to help with this.



Use organic, non-organic, or living mulches

Mulching works by stopping sunlight from getting to weed seeds and prevents their germination. Depending on the type of mulch, there can be a number of other benefits.

ORGANIC MULCHES

In addition to weed control, organic mulches have the advantage of decomposing and adding to the organic matter of the soil over time.

Almost any organic material you have can be used as a mulch, including:

- Grass clippings - cut your grass short so there are no seeds in the clippings
- Woodchips - any kinds, but finer wood mulch is better for tiny plants
- Cardboard - can be recycled or purchased in rolls; avoid pieces with coloured inks
- Straw or hay - do some experiments first to ensure there are no invasive seeds in the mix; germination of the straw plant (i.e., oats, rye, wheat) isn't necessarily a problem
- Leaves - generally better if they are dry and you can chop them up a bit first by driving the lawn mower over them or putting them into large garbage bins and using a weedeater to chop them up.

NON-ORGANIC MULCHES

Many flower farmers grow crops in either plastic or landscape fabric. Both these materials can have several advantages, as well as some drawbacks.

| | ADVANTAGES | DISADVANTAGES |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plastic | <ul style="list-style-type: none">• Reduces weeds• Conserves moisture• Can be laid with a mulch layer• Is easy to plant in by punching holes in plastic | <ul style="list-style-type: none">• Only lasts one season• Produces considerable waste |
| Landscape fabric | <ul style="list-style-type: none">• Reduces weeds• Conserves moisture• Lasts for multiple years | <ul style="list-style-type: none">• Holes need to be burned with a torch to prevent fibres from fraying• Is heavier to work with |



LIVING MULCHES

Living mulch is a low-growing cover crop planted among main crops to perform the functions of a traditional mulch, and is most often used alongside perennials. Almost any plant can be a living mulch, as long as you make sure the mulch crop stays smaller than the flower you want to harvest. Ideally, a living mulch can be direct seeded, germinates quickly, and grows faster than other weeds and crops in the same area. Living mulches can have the added advantage of being habitat for beneficial insects.

Examples of living mulches include:

- White clover (especially in deep rooted perennials like peonies) and other traditional cover crops (see below)
- Alyssum (is also habitat for beneficial insects)
- Canada anemone (spreads rapidly and covers ground in a perennial or woodies bed)
- Herbs like short catnips, oregano, thyme

Plant cover crops

Cover crops are your best solution for weed management—and more!

Cover cropping isn't just for big farms. In fact, experts across Canada agree that growing cover crops is the single most important beneficial practice you can adopt as a small-scale farmer, given our changing climate.

Cover crops are ESPECIALLY vital on small plots/farms like flower farms, which have a very intensive planting and harvesting nature, and often rely on tillage for weed management. In addition, new flower farms are often established on land that has been degraded and the initial soil quality is poor.

This topic warrants in depth discussion and consideration, so let's dive in!

WHAT ARE COVER CROPS?

Simply, they are crops grown to provide a service or function to your farm, particularly to improve soil health.



Different crops have different specific advantages, including:

- Increasing soil organic matter and improving structure
- Increasing microbes in soil
- Improving soil water holding capacity
- Cooling soil
- Protecting soil from erosion
- Increasing available nitrogen
- Fixing nitrogen from air, or scavenging nutrients from deep soil layers, and releasing nutrients to the soil and subsequent plants
- Suppressing weeds
- Interrupting pest cycles

TYPES OF COVER CROPS

Cover crops can be divided into two broad groups:

Legume – clovers, vetches, peas, beans, sun hemp, lentils. These crops fix nitrogen from the air, and reduce erosion, and contribute to beneficial habitat. You will see grey-pink nodules on the roots.

Non-legume – cereals (rye, wheat, oats, barley), grasses (ryegrass, millet, Sudan grass), buckwheat, sunflowers, brassicas. These crops build organic matter, suppress weeds, accumulate nutrients, reduce soil compaction, and support beneficial insects.

Cover crops can be further divided into warm or cool season crops, which informs when to plant them.

Warm Crops (plant in summer) - sun hemp, soybeans, buckwheat, sunflowers, Sudan grass, millet

Cool Crops (plant spring or fall) - clovers, peas, rye, wheat, oats, barley, radish, mustard



HOW TO TERMINATE YOUR COVER CROP

Once the cover crop has done its work, it's essential to fully kill it off so you can plant in that area again later in the season or the following year. For small-scale flower farms that don't use herbicides or large equipment, there are a number of other options to consider.

- Winter kill – Let frost naturally kill the crop.
- Mow, crimp, roll, or knock it down – Physically break down the crop.
- Tarp it – Smother it with a tarp to block light.
- Till it in – Incorporate it into the soil.
- Or use a combination of these methods.

GETTING STARTED WITH COVER CROPS

There are many options and variations for using cover crops. For those who are new to this technique, there are two easy to do options that work well for small scale cut flower growers.

1. Summer cover crop followed by 'cool' flower transplants
2. Winter cover crop that dies over winter

Summer Cover Crop

You can do this anytime, but good windows are after your early annuals (nigella, larkspur, Agrostemma, etc.) have finished, usually in late July or early August. This leaves you 3-4 weeks of a cover crop before you need to transplant your 'cool' annuals.

Follow these steps:

1. Remove your crop by pulling, cutting, or tilling, depending on your scale and equipment.
2. If you have a lot of weed pressure, consider tilling the area. Otherwise, cut the weeds very low with a mower or weed eater.
3. Scatter the cover crop seeds. Oats + peas, or oats + oilseed radish works great.
4. Drive over the crop or stamp down the seeds into the soil. If you are not tilling, it is helpful to spread compost lightly on top of the cover crop seeds.
5. Leave the cover crop to grow for four weeks.
6. Transplant your Fall cool flower transplants directly into the cover. The oats, peas, and radish will reliably be killed by the cold weather, leaving just your cool flowers.



Alternatively, if you use landscape fabric with burned holes, you can drop cover crop seeds into the holes as you pull your early annuals. Then when you are ready to transplant your cool flowers, you can just pull a few cover crop plants and pop your cool annuals right into the same holes.

Winter Cover Crop

This is very similar to sowing a Summer cover crop; it is just a bit later. You can use this technique after your main season annual flowers are mostly finished. You want to sow your cover crop before the middle or end of September, depending on your zone.

1. Terminate your flower crop as above (i.e. pull, mow, or till).
2. Sow the cover crop seed as above. Oats mixed with anything is fantastic because it reliably winter kills and leaves mulch behind.
3. In the spring, plant directly into this mulch, without tillage, adding additional mulch as required.

If you use landscape fabric with burned holes, you can pull your crop, sow the cover right into the holes and leave the fabric there over winter. In the spring, you can transplant your early annuals directly into the cover crop refuse in the landscape holes.





ADDITIONAL RESOURCES

WATCH

[Garden Cover Crops & Green Manures • Johnny's Educational Webinar Series](#)

Explains benefits and provides practical tips for using cover crops.

READ

[Cover Crop Selection for Vegetable Growers](#)

University of Minnesota. This resource lays out simple 'windows' for cover crops on market garden farms that are useful for flower farmers starting out.

EXPLORE

[Canada's FaRM program learning hub](#)

Free online courses for farmers, and more.

Downloadable cover cropping [workbook](#).

