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Weed Control

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Introduction

Weeds affect us all. Older gardeners will leave a property that they love because they no longer can keep up with the weeds. Newer gardeners can get discouraged because weeds can take the fun out of gardening. And all of us regret the time that we must spend dealing with weeds.

A weed is any plant that grows where it is not wanted. Besides taking up valuable space, weeds compete with other plants for nutrients, water and light. Veg-etables have reduced yields or do not produce at all under weedy conditions. A weedy garden is also unattractive.

In the past, 2, 4 D and similar selective herbicides were used to control broad-leafed weeds. Glyphosate weed killers were also used in home gardens to totally remove all plants from a specific area. These have now been banned for cosmetic use on lawns and gardens in Ontario. Blanket or preventive ap-proaches, besides raising health and environmental concerns, often fail and sometimes cause unwanted side effects or require constant application.

Try to relax. A few weeds won't destroy your garden and some weeds are necessary. Milkweed, for example, is the required food of Monarch butterflies.

The following should give you some strategies for dealing with weeds in your lawn and garden, making this sometimes onerous task less of a chore.

Getting to Know your Weeds

The more you know about a particular weed and its life cycle, the easier that you can develop an effective strategy to combat it. All weeds, whether they are perennial or annual should be prevented from going to seed and the seeds should be kept from germinating. A single crabgrass plant can produce 250,000 seeds in a season. Weed seeds in large numbers are already present in all soils. They remain viable for many years. For example, lamb's quarters seeds from under medieval ruins in Europe were found to be still viable after centuries. Most weed seeds lie in wait for signals that the competing plants have been removed from above them and that there exists the right conditions for their germination and survival. They wait for one or various combinations of light, warmth, fluctuating temperatures, moisture or increases in nitrates and other chemicals that are found in disturbed soils. Deep spring tillage, besides being hard on the structure of the soil, is just about the perfect source of these signals. For some vegetable gardens, and for some weeds, it makes sense to dig the garden, allowing the weed seeds in the top layer to germinate, and a week or two later, take shuffle hoe to the whole garden. This will kill most of the tender young weed seedlings, but not bring up many more new seeds. Weed-free organic layers added to the top of the garden such as finished compost can also be used to keep the surface cool and to eliminate light from the seeds near the surface.

Perennial weeds need to be managed differently than annual weeds. Biennial weeds such as Queen-Anne's-lace, form roots and a rosette of leaves the first year and set seed the second.

Perennials

The most effective way of controlling perennial weeds without the use of chemicals is to physically remove them or to discourage them through cultural practices. In many cases, all pieces of the underground roots and rhizomes need to be removed, particularly storage parts of the plants. Even if you cannot get the entire plant, repeated removal of leaves and stems, weakens weeds and eventually they give up. Examples of perennial weeds are dandelion, plantain, thistle, ground-ivy, quackgrass, and creeping bellflower.

Annuals

Annuals should also be handpicked or killed by shallow hoeing at the seedling stage, but can be effectively controlled by preventing the spread and germination of seeds. Examples of annuals are crabgrass, barnyard grass, ragweed, wild buckwheat, smartweed, foxtail, lamb's quarters, purslane, pigweed, wild oats, and wild mustard. Winter annuals can also germinate in the fall and flower the following year. Examples of these are henbit, shepherd's purse, and chickweed.

Knowing your weeds helps with their control.

Consider crabgrass as an example. Crabgrass is an annual, and one plant is capable of producing thousands of seeds per season. It normally invades lawns that are thin, weak and undernourished. The plants infest lawns during the spring and summer and then leave large voids in the fall and winter when they die off. Second, crabgrass has an unpleasant texture that often interrupts the uniformity of a lawn. In vegetable gardens, crabgrass can quickly out-compete desirable plants, causing considerable yield reductions.

Crabgrass germinates when soil temperatures reach about 15°C and air temperatures stay above 18°C for at least five consecutive days. It usually establishes itself in mid to late spring. So effective control involves identifying the weed and assessing the level of infestation; employing cultural practices that favour the desired plants and a healthy turf over the crabgrass; preventing the crabgrass from going to seed; preventing what seeds are present in the soil from germinating; and hand picking or shallow hoeing when the weed plants are young.

Weeding Techniques

The objective is to get as much of the plant as possible including all of the roots. It is best to grab the plant close to the ground, encircling its leaves with the fingers of one hand.

Maintaining a Healthy Lawn

Here are some hints for maintaining a healthy lawn.

- Mow at a height of 6 to 8 cm (2 ½ to 3 inches)
- Cut frequently
- Remove no more than 1/3 of the blades at a time.
- Keep your mower blades sharp and use a mulching mower.
- Leave the lawn clippings on your lawn after mowing. Only remove thick clumps of clippings.
- If you must water, water deeply and infrequently and only when there is insufficient rain. If we water the lawn in August to get rid of the brown, we have to balance that against creating roots so shallow that we cannot stop the watering. Some parts of your lawn will be brown, some years in August but it always comes back. Early morning is the ideal time for watering.
- A healthy lawn can survive several weeks in a dormant state.
- Avoid excessive watering, as the water fills up air spaces in the soil and reduces oxygen supply
- Avoid over fertilization
- If you are moving in to a new subdivision, insist that the builder lays down more than ½ inch of topsoil because grass needs more to grow properly. Use grass seed that suits our climate and your location. The Peterborough Ecology Park sells some excellent mixes.
- Feed the soil not the lawn by spreading compost on top on a regular basis.
- Overseed thinned areas to keep the turf thick. Try some of the new grass seed mixtures. The Wildflower Farm near Coldwater, Ontario has alternate mixes that decrease maintenance.

A small-bladed knife, an English-style weeding fork or sharp-edged hand trowel in your other hand can be used in the soil to slide under the roots of the weed to loosen them helping to remove the plant. This works best when the soil is moist and crumbly. If you disturb the surrounding soil, mulch, or leaf litter, you run the risk of bringing deeply buried weed seeds closer to the surface. Mixing bark chips or other mulch with the soil, unless it is finished compost, robs it of nitrogen.

Hand pulled weeds can be left on the ground to break down where except for any that have developing or mature seeds. Seeds should be cut from the plants and bagged for curbside disposal. Perennial weeds might stay alive in the home compost, but you can put them in the sun in a closed plastic bag for a month to finish them off.

Keeping Weed Seeds Underground

Since weeds are prolific and their seeds are just waiting in the soil for the right signals to germinate, keeping the weed seeds buried is one of the most important things to do.

Topdressing perennial beds with at least an inch or two of well-finished weed-free compost reduces the number of weeds. This layer should not be dug into the bed. Instead, it should be left on top to act as a blanket blocking the light and reducing the temperature of the underlying layer. Compost is available from the City of Peterborough Waste Programme and truckloads can be delivered within the city. This finished compost is free of seeds, which is not often true for home compost. It can be picked up in smaller amounts at the Ecology Park.

Compacted or poor soils favour many weed species. Yearly applications of compost contribute to the overall health of the soil. Adding organic material alters soil structure of both sandy soils and clay soils. Aeration is improved with increased pore spaces allowing air to reach the root zone. Soil's ability to retain water increases with the addition of compost. A healthy soil often is all it takes to tip the balance in favour of your plants.

Control of Weeds in your Lawn

A Healthy Lawn Competes Well with Weeds

A well-maintained lawn resists weed infestations because there is no room for weeds and the desired turf species are growing under optimum conditions. In a dense lawn, kept cut at a height of 6 – 8 cm., little light reaches the weed seeds so they will not germinate. Cutting your grass short allows light to reach the seeds providing the conditions for a weed invasion. Also topdressing with weed-free compost helps prevent seed germination.

Choosing the Right Groundcover

Grass may not always be the best groundcover for all situations. Replace grass with paving stones or mulch in heavy traffic areas. Choose alternative ground covers such as thyme, *Lamium*, or *Sedum* in difficult spots such as steep slopes.

Hand weeding

Hand weeding the lawn is still one of the most effective methods of control.

- Pull up weeds before they go to seed and spread around the garden.
- Try to get the whole weed including the root. Don't weed when it is bone-dry or the roots will not come out cleanly.
- Younger weeds are easier to pull because they haven't established a strong root system.
- For taproots like dandelions pull straight up with a little pressure on either side of the stem using a tool with small V-shaped end.
- Try pouring boiling water on perennial weeds.

Corn Gluten

Considering that the topsoil in a typical 5,000 square foot residential lawn is home to more than 25 million weed seeds just waiting to germinate, seasonal battles against these unwanted plants will continue, but the war could never really be won. Corn meal gluten provides a natural source of nutrients that, if used according to the label directions, can enhance the ability of the grasses in your lawn to compete with weeds.

Corn gluten does not harm established plants, pets, beneficial insects, pond or stream life, or children. It is safe to apply even up until the day of harvest.

While most annual weed seeds germinate in the spring, some called winter annuals, germinate in the fall and remain alive all winter thereby getting a jump on spring.

Here is how corn gluten is used:

- It is available in powdered and pelletized forms, both of which work equally well. The pelletized form is easier to apply.
- Spread evenly on lawns at a rate of twenty pounds per 1,000 square foot. Avoid any bare spots where you are reseeding grass.
- Water in if there is no rain to activate it.. Then allow area to dry for 2-3 days. Plants need dryness for corn gluten to be effective. If

excessive rains occur, reapplication may be needed.

- Timing is important. Apply in early spring, when crocus and early daffodils bloom. And in early fall when the temperature turns cooler.
- It should remain effective for five to six weeks each time you apply it.

Don't expect to see instant results from using corn gluten meal. Every consecutive year you apply should give better results than the year before.

It is equivalent of 10-0-0 in a slow release form. Applying it at the recommended rate gives more than enough nitrogen to meet the lawn's needs. It does not supply phosphorus or potassium.

The only potential hazard that is documented so far is potential allergic reaction from inhalation of dust with certain individuals.

Corn gluten lasts 5-6 weeks. **It will prevent all seeds from germinating so do not seed your lawn at the same time.** There is no carryover. After this time seeds can be planted in treated areas without being affected.

Control of Weeds in your Garden

Don't let Weeds get a foothold in a new garden

Keep the weed seeds in mind, when making a new flowerbed. Don't remove turf because you would be wasting valuable organic matter. Provide a biodegradable barrier for weeds and grass using a layer of cardboard or newspaper (6 to 10 newspaper sheets thick). Next add a layer of topsoil or triple mix to a depth of four to six inches or more followed by a layer of compost (three to four inches). The compost layer suppresses the weed seeds that can be present in the soil layer or the triple mix. Beds constructed this way, can be planted right after they are built. Just be sure to replace the compost layer to control weeds.

Weeding Old and Overgrown Gardens

If the bed is choked with weeds and has not been used for years, cut down or dig out the large weeds, cover the area with clear plastic and fasten it in place for two months in the heat of summer. This will ‘sterilize’ your soil and leave it ready for amendment and planting in the fall. If there are plants in the area that you wish to save, remove them carefully, wash their roots of all traces of weeds. Keep them in pots for at least six weeks to ensure that you did not miss any weeds.

Mulch:

The trick is to ensure that you mulch deep enough to discourage weeds and to make removal of those determined to invade your garden, easy to pull out. But do not mix the mulch with the underlying soil because it robs the soil of nitrogen. Even minor mixing while planting through the mulch can have an effect on your transplants.

Controlling Weeds in Patios and Walkways

For weeds growing between cracks in pavement, decks, etc., try pouring boiling water over them to kill them. Killing weeds with a torch also works but with both methods, you need to wait to see if the weed dies from the heat. If this doesn't get them all use a weeding blade, a thin blade with 90-degree bend and sharp edge for cutting between stones, bricks, etc. Plant more desirable plants in the cracks to compete with the weeds.

Garden Thugs and Invasive Plants

Any plant that encounters just the right conditions for optimal growth and reproduction, can become a garden thug, but invaders from other countries are particular problems because they have no natural controls.

Dog strangling vine has invaded large areas in the US at the eastern end of Lake Ontario and has been found in Peterborough. This vine is related to milkweed so much so that monarch butterflies will lay eggs on it, but the young do not survive. You can recognize it by its slender green pods and it has no natural predators. It's poisonous to deer, goats and other grazing animals. It grows in stands as big as 500 acres, crowding out all native plants.

Many of you have a bush or tree on your property known as European Buckthorn and you may not even know it is there. It looks harmless, but it is not. If left unchecked, it will take over.

The annual spring rite of plant sales is fraught with dangers for the uninformed. The plants you sometimes find at the sales could be better labeled as assertive. If you are buying from the plant sale, choose carefully and if you are donating, consider composting your excess goutweed, ribbon grass, lily of the valley and periwinkle. They are the gifts that keep on giving.

For Further Information

Publication 505, Ontario Weeds

OMAFRA's Weed Gallery