

Weeds: Friend or Foe?

The **life cycles of weeds** differ, and you should tailor your weed-management strategies to fit. Annuals complete their life cycles in a year and reproduce by seed. Summer annuals complete their life cycles during the growing season. Winter annuals, such as shepherd's purse, can overwinter as seedlings and flower in spring. To control these weeds: pull them, apply a thick mulch, and deadhead (cut off flowers before they set seed). Biennials, such as burdock, throw seed in their second year of growth, then die. Try deep digging, regular mowing, and heavy mulching. Perennials, such as Canada goldenrod and ground ivy, live for more than two years. Many reproduce from roots or rhizomes as well as by seed. Repeatedly mow perennials or carefully remove pieces of rhizomes and roots (which can sprout new plants). A "once-over" tillage is not recommended, but repeated tillage, followed by deep mulching, may reduce infestations in your garden.

Before you plant a new garden, till the soil shallowly to encourage weed seeds to sprout, then water the area if the soil is dry. The combination of air, moisture and exposure to light will stimulate weed-seed germination. Wait a week after tilling and then hoe or till again to eradicate all the newly germinated weed seedlings before you plant. The more times you repeat this pre-plant weed reduction technique, the fewer dormant weed seeds you will have lurking in your garden beds. Once the upper-layer weed seeds are exhausted (it takes a number of years, so be patient), very few new weeds will appear unless you bring them up from below or let weeds mature and drop new seeds. Tiny, newly germinated weeds are the easiest to deal with. Cultivating is the gentle stirring of the soil's surface to uproot young weeds before they become a problem.

A word about herbicides

Many persistent weed problems can be solved by using these alternative strategies, but if you are considering herbicides, first think of: **Effectiveness:** Are weeds at the right growth stage? Most herbicides are designed to work within a specific time frame. For example, pre-emergence products are effective only before germination, not on established weeds. Is the product appropriate for your weeds? Check the label. **Environment:** Valuable plants can be harmed or killed if they come into contact with nonselective herbicides. Water and wind carry herbicides, reducing their effectiveness in the garden and polluting the environment. **Cost:** How much will you need, and how many repeated applications? Do you have the proper equipment, correctly calibrated, and protective clothing to wear?

Healthy soil creates healthy plants. Soluble chemical fertilizers, herbicides and pesticides provide plants with a quick fix and short-term benefits. Research has shown that these chemicals also stress plants, kill beneficial insects, pollute ground water, and destroy soil organisms. Without the soil organisms the processes of decay and decomposition no longer can continue, and your garden becomes dependent on chemicals for its source of nutrients. Practicing other sustainable gardening techniques like adding compost, companion planting, and crop rotation in your garden will nourish the soil, provide long-term benefits, and contribute positively to the environment rather than destructively.

These techniques, along with regular cultivation, will cure weed problems and result in a tidy garden. And a well-kept garden just may motivate you to spend more caretaking time there.

Resources

- **Field Guide to Noxious Weeds in BC** www.agf.gov.bc.ca/cropprot/weedguid/weedguid.htm
- **Report infestations** of noxious weeds in the Regional District of the East Kootenay 1-888-478-7335, www.rdek.bc.ca
- **Weeds and your Garden** (pdf brochure) www.nysipm.cornell.edu/publications/weedsgarden/files/weedsgarden.pdf
- **Weeds as Soil Indicators** by Stuart B. Hill and Jennifer Ramsay, www.eap.mcgill.ca/Publications/EAP67.htm

Notes:



Fernie Community Eco Garden
Workshop Series 2008 - Keeping Food Real

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Weeds probably discourage more potential gardeners than any other single problem. "Oh, the garden was overgrown with weeds and we finally gave up" is a common explanation of many frustrated gardeners, but it doesn't need to be that way. Have you ever heard anyone say, "Oh, the living room finally got so dusty that we just

stopped using it"? We don't stop enjoying the living room because of dust. We simply vacuum or sweep every so often to keep the room clean. It's the same for your garden: regularly cleaning your garden by weeding is one of the keys to keeping your crops productive and your enthusiasm strong.

excerpt from Winning against Weeds
Mother Earth News – June/July 2003

Defining the weed

The soil contains a seedbed of many millions of seeds which germinate only when the conditions are right to do so for that particular seed, and this includes what we would term as 'weeds'. Many so called weeds are considered valuable plants when they appear in the right places, so it's also a matter of perspective.

weed Any plant growing where it is not wanted. On land under cultivation, weeds compete with crops for water, light, and nutrients... Many weeds are hosts of plant disease or of insect pests. Some originally unwanted plants later were found to have virtues and came under cultivation, while some cultivated plants, when transplanted to new climates, escaped cultivation and became weeds in the new habitat. – *Britannica*

*Weeds are flowers,
too, once you get
to know them.*
- Eeyore

Noxious weeds

Noxious weeds are typically non-native plants that thrive without the insect predators and plant pathogens that help keep them in check in their native habitats. For this reason and because of their aggressive growth, these alien plants can be highly destructive, competitive and difficult to control. These weeds are known to:

- Clog waterways used for swimming and boating
- Reduce visibility on transportation corridors
- Act as carriers of disease and insects which affect beneficial plants
- Kill native grasses and wildflowers including rare and endangered species
- Destroy natural habitat for wildlife, birds, and domestic animals
- Reduce yield and quality of agricultural crops
- Interfere with regeneration of forests
- Increase wildfire hazard; fires lead to increased soil erosion and stream sedimentation
- Ruin water quality and destroy habitat for fish and other aquatic organisms
- Some are potentially toxic to humans, pets, livestock, and wildlife

You can help! Regularly check clothing and equipment for weed seeds and vehicles for plant fragments. Remove hitchhiker seeds and dispose in the garbage (not in your compost). Stay on existing trails and camp only at designated camping areas. Pull and bag noxious weeds if flowers are present, then dispose of them in the garbage.

Invasive plants

Some wild and cultivated perennial plants can become invasive in the garden, spreading by underground roots and rhizomes (underground stems). When planning a garden, keep in mind the invasive potential of plants such as St John's wort, tansy, and the mints. Wildflowers, such as oxeye daisy, chickweed and the clovers, are also invasive plants likely to spread in our gardens if allowed to. An example all gardeners are familiar with is quack (couch) grass, which will continue to spread if any part of the plant is left in the soil. Several methods of utilizing and managing the most common garden weeds are explored in the following pages.

Beneficial roles of weeds

Besides the obvious benefits of edible and medicinal weeds, there are many ways in which these plants can help us in the garden. Shelter plants can **protect the soil** from erosion and drying from wind and sun. Trap crops can **draw away potential pests** from the actual crop intended for cultivation. For instance, lamb’s-quarters attract leafminers that might otherwise attack your spinach. Weeds are excellent **soil indicators**; their presence can tell much about soil make-up and quality. Tap-rooted weeds can **improve soil** by pushing deeply through the soil. This opens and increases air spaces, basically aerating deeply, and so improves drainage even in clay soils. Pulling such weeds will then provide channels for water, air, and nutrients to deeply enter the soil. Deep penetration by their roots often enables weeds to **draw up mineral nutrients** from the subsoil and transport them to the soil surface. Through the weed’s subsequent death and decomposition, these elements become available to crop plants with less extensive root systems. Interestingly, the accumulated elements are often those in which the particular soil is deficient. By providing cover vegetation, weeds will **enable beneficial soil animals** to be active at the surface, depositing their nutrient-rich faeces and/or acting as biological control agents against various insect pests.

Weeds as soil indicators

Weeds are excellent indicators of the soil conditions of your garden. For example, dandelions may signal that the surface soil has become too acid due to calcium loss when grass clippings are removed. Using the knowledge of weeds can assist you in your gardening efforts in two ways: by planting crops that thrive in the soil conditions indicated by your weeds or providing soil with the appropriate amendments to balance out the soil conditions.

When using weed information, remember to look for large populations of the weed, one plant is not indicative of the whole situation. Also look for another weed that likes the same conditions as your indicator weed; this will give you verification of the soil condition. An example is dandelion and mullein which are both indicators of acidic soils. Mullein can also mean a soil with poor fertility so if you see it alone it may mean several things but with dandelions you know the soil is acidic. Keep in mind the health of the weed plant. A nice healthy stand of clover may indicate soil that lacks nitrogen whereas the same plant will grow in soil that has adequate nitrogen but look much less vigorous.

Weeds don't just tell you what soil you have by their presence; often they can even improve your soil, which may seem an odd concept.

Soggy or Swampy Soils: dock, horsetail, foxtails, willows, oxeye daisy, goldenrod, rushes, sedges are found in these conditions. These weeds are excellent indicators that the area will be soggy at some time during the year. It is best to plant items that enjoy these soil conditions. It is almost always too much work to correct successfully

Compacted Soils: chicory, bindweed, white lupines, sweet clover will thrive in compacted soil and break up the soil as they grow.

Crusty Soils: quack grass, mustard family just love crusty type soils. Crops to plant would be cultivated mustards, choys, broccoli, cabbage and cauliflower. These crop plants can push through crusty soils with ease. Compost can be used as an aerator of compacted or crusty soils. Also be sure that the soil is dry enough before you start working it.

Acidic Soils: dandelions, sorrel, mullein, stinging nettle and wild violet all thrive in pH below 7.0. Take advantage of this acidic soil by planting hydrangeas, blueberries, rhododendrons and azaleas or endive, rhubarb, shallots, potatoes. These plants tolerate soil with a pH as low as 5. Applying lime or woodash will bring up the pH.

Alkaline Soils: field peppergrass, champion indicate an alkaline soil (pH higher than 7.0). Asparagus, broccoli, beets, muskmelons, lettuce, onions and spinach all do well in alkaline soils. Adding peat moss, elemental sulfur or lots of compost will help bring the pH back into balance.

Poor Soils: daisies, wild carrot, mugwort, mullein, wormwood are all signs of poor soil fertility. Beets, carrots, parsnips, peas, beans, legumes, radishes, sage and thyme will all tolerate poor soil conditions. To improve the fertility, compost or manure (nitrogen), bone meal (phosphorus), and kelp meal (potassium) can be added as necessary.

Fertile Soils: chickweed, lamb’s quarter love very fertile soils. Redroot pigweed indicates an abundance of nitrogen, red clover indicates an excess of potassium, purslane and mustard indicates an abundance of phosphorus. Corn, broccoli, lettuce, melons, squash, tomatoes and peppers are all heavy feeders and thrive in fertile soils.

Keep in mind that weeds can be used as you would any green manure crop that is intentionally seeded. Weeds help stop erosion, and the deep roots help loosen the soil better than the usual cover crops and grab nutrients deep down below the surface, far beyond the grasp of most traditional cover crops. It is best if they are cut or tilled in before they go to seed.

The flowers of many weeds provide essential nectar and pollen, foods that beneficial insects need to complete their life cycle. The beneficial insects are the ones that take care of the bad ones.

Remember too, some insect pests would actually prefer to dine on weeds rather than your deliberately planted crops, if given the choice. So consider using some of your weeds as a companion to some of your crops.

Edible and medicinal weeds

For any edible weed or wild plant don’t eat unless you can positively identify it. If you’re not familiar with a plant refer to a good field guide before eating it. Here are a few common weeds you’re likely to find in your garden:

Chickweed: This common garden weed is nutritious, high in minerals and vitamins (especially vitamin C), protein and fiber. When young its subtle flavour, reminiscent of fresh corn, is a fine addition to your spring salads. Chickweed can also be made into a salve to soothe skin irritations. Blend finely chopped fresh chickweed with olive or coconut oil. Add a little melted beeswax if you want the salve to be creamy.

Plantain: This weed is common in lawns. For instant relief from insect bites, bee or nettle stings, pick a plantain leaf, chew it briefly, and apply the pulp to the affected area.

Dandelion: Snack on those young leaves, add them to salads or steam them with other veggies, noodles, miso and … mmmm… maybe ginger. Roots can be dried for a nutritious tonic tea, perhaps boiled with cinnamon and cloves for taste, or well-roasted to make a coffee substitute.

Lamb’s quarters: These are often found growing in vegetable gardens. The plants can grow to about four feet in height. The leaves and stems have a flavor that can be compared to spinach or chard. Harvest while young, before they grow tall and put up flower buds, rinse well and steam. The very young leaves are good raw in salads.

Mullein: This biennial with large fuzzy leaves puts up a tall flower spike the second year and will throw seeds if allowed to mature. It is a valuable medicinal plant; the fresh leaves can soothe diaper rash and relieve nettle stings. Dried, the leaves have been used in smoking mixtures or infused as tea to treat coughs, colds and lung congestion.

Weed management

When it comes to maintaining a garden, even the most experienced gardener eventually has to pull weeds. Weeding is part of gardening. Weed seeds drift in on breezes or are carried by animals and birds. Tidying areas adjacent to your garden will reduce the number of weed arrivals. You can inherit perennial pests in root balls of transplants, so take care to remove weeds when you bring plants into your garden. Some areas are so overgrown with large, established weeds that pulling them isn’t feasible. Before you mow or till them under, however, identify them. The rhizomes and tap roots of some perennials can create thousands of sprouts if you chop them and leave them in the soil.

Cover crops can interfere chemically with weed growth; winter rye and fescues, for example, excrete substances from their roots and shoots that suppress weeds. A season or more of cover crops can minimize weeds in newly planted sites. Tilling under cover crops also increases the organic content of the soil.

Mulches can prevent light from reaching weeds for a season, while your plants get established. The leaves of living plants also prevent light from reaching the soil. Try wide-canopy plants, such as closely planted broccoli.

A four-inch thick layer of shredded bark, straw, leaves, wood chips, or several other organic choices can prevent weed seeds from germinating. You might also consider laying down sheets of newspaper or landscape fabric around established flowers, shrubs, or vegetables to prevent weeds from emerging near them. Alternatively, lay down the sheeting on newly prepared beds and poke holes into which you’ll plant. Try to prevent weeds from emerging from the edges of those holes.

Certain synthetic fabrics can be expensive, though, and difficult to install and remove, especially once weeds have rooted in them or sunlight has degraded them. They also separate the decomposing mulch from the soil organisms.

Some gardeners place chopped leaves or other organic material under the fabric. Once the fabric is removed, the soil generally has better tilth, or texture, from the activity of soil organisms and the decomposition of organic matter.