



## **BEYOND PESTICIDES**

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### Read your weeds: A simple guide to creating a healthy lawn

Weeds can tell you a lot about the condition of your lawn and indicate what you need to do to grow healthy grass that is naturally resistant to weeds and pest problems. Learn to read your “weeds” for what they indicate about your lawn care practices and soil conditions, and you’ll be on your way to creating a healthy lawn that will be less work in the long run.

Reading weeds is actually very simple. First, know that weeds thrive in soil that is compacted, poorly fertilized, and not pH balanced; and in lawns that are improperly watered, seeded, and mowed.

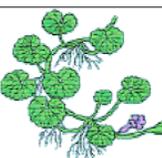
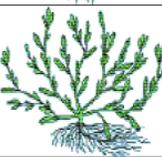
Synthetic fertilizers and chemical pesticides also lead to undesirable conditions, which restricts water and air movement in the soil. High nitrogen fertilizers can disrupt the nutrient balance, accelerate turf growth, increase the need for mowing and contribute to thatch buildup. Pesticides harm the microorganisms, beneficial insects and earthworms that are essential to maintaining healthy soil, and therefore, healthy turf.

Use the following chart to identify the weeds in your lawn and correct the conditions that are promoting them with the information below. For instance, blue violets often indicate compaction and excessive watering. Aeration and proper irrigation would correct the conditions that are promoting blue violet growth.

While we cannot provide specific information for every region of the country, and every weed, this general overview will highlight the association of weeds with poor soil and management conditions. And, while we don’t focus on pests, following the recommendations outlined here will help alleviate many pest problems.

Remember, many plants that are considered weeds, have beneficial qualities. Try to develop a tolerance for some weeds. For instance, clover - considered a typical turf weed - thrives in soil with low nitrogen levels, compaction issues, and drought stress. However, clover takes free nitrogen from the atmosphere and distributes it to the grass, which helps it grow. Clover roots are extensive and extremely drought resistant, providing significant resources to soil organisms, and clover will stay green long after turf goes naturally dormant. Crabgrass provides erosion control, dandelions’ deep roots return nutrients to the surface, and plantains are edible!

## Common Lawn Weeds and What Contributes To Them

Weed	Common Name	Soil Compaction	Mowing Height	pH	Fertility	Watering	Poor Drainage
	Annual bluegrass	X	L		E	E	
	Clover	X		L	L (N)	D/E	
	Crabgrass		L		L	D/E	
	Dandelion	X		L	L (Ca)  E (K)		
	Ivy (Ground)						X
	Knotweed	X		L	L (Ca)  E (K, Mg),		X
	Plantains	X	L	L	L		X

X- Condition associated with the weed, D- Drought, E- Excessive, H- High, L- Low, K- Potassium, Mg- Magnesium, N- Nitrogen

Illustrations Source: *Cornell University Cooperative Extension*

## **Eliminate the Conditions that Promote Weeds**

1. **Compaction** – Compaction is an invitation for weeds. If your lawn is hard, compacted, and full of weeds, aerate to help air, water and fertilizer to enter. If you can't stick a screwdriver easily into your soil, it is too compacted. Get together with your neighbors and rent an aerator. Once you have an established, healthy lawn, worms and birds pecking at your soil will aerate it for free!

2. **Mowing Height** – Bad mowing practices cause many lawn problems. Mowing lower than 1 ½ to 1 ¾ inches can kill the root system by preventing photosynthesis, and mowing with a dull blade makes the turf susceptible to disease. A low mowing height also invites sunlight in for weeds to sprout.

While grass species vary across the country, most lawns are a mix of kentucky bluegrass and fine fescue. Generally, you should keep a lawn at 3- 3 ½ inches. Mowing high allows the grass to develop deeper, drought-resistant roots systems. For the first and last cut of the season, mow to 2 inches. Do not mow more than 1/3 of the grass blade at a time. Keep your mower blades sharp to prevent the development and spread of fungal disease, or ask your service provider to sharpen their blades frequently.

3. **Soil pH and Soil Testing** – Low pH means acidic conditions and high pH indicates alkaline conditions. If the pH is too high, your grass cannot properly absorb nutrients. Ideal pH should be between 6.5-7.0, slightly acidic. Generally, lime is added to raise the pH and sulfur is added to lower the pH, and adding compost can naturally correct your pH. A soil test is highly recommended to determine the soil pH and specific nutrient needs. Contact your extension service to find out how to take a soil sample. In addition to nutrients and pH analysis, ask for organic content analysis, and request organic care recommendations. Organic content should be 5% or higher.

4. **Fertility** -Soil testing is the best way to determine your soil's specific nutrient needs. Fertilizing in early fall ensures good growth and root development for your grass. Nitrogen, the most abundant nutrient in lawn fertilizers promotes color and growth. Adding too much nitrogen, or quick-release synthetic fertilizers, can weaken the grass, alter the pH, promote disease, insect, and thatch build-up.

Your grass clippings contain 58% of the nitrogen added from fertilizers, improve soil conditions, suppress disease, and reduce thatch and crabgrass. So, *leave the clippings on your lawn*. You can use a mulching mower and leave the leaves too.

Compost is an ideal soil conditioner, adding the much-needed organic content to your soil, and suppressing many turf pathogens. In the fall and spring, preferably after aerating, spread ¼ inch layer of organic or naturally-based compost over your lawn. Compost tea and worm castings are also great additions.

Look for compost or organic slow release fertilizers at your local nursery or order online. Some fertilizers, such as Ringer® Lawn Restore®, are certified by the Organic Materials Review Institute, [www.saferbrand.com](http://www.saferbrand.com). Other makers include North Country Organics, [www.norganics.com](http://www.norganics.com); Harmony Farm [www.harmonyfarm.com](http://www.harmonyfarm.com); Peaceful Valley Farm Supply, [www.groworganic.com](http://www.groworganic.com); and Down To Earth's Bio-Turf [www.downtoearthdistributors.com](http://www.downtoearthdistributors.com).

Thatch is a dense layer of grass stems and roots on the surface of the soil. Thatch is a symptom of shallow watering and chemical fertilizer usage. When thatch layers become ½" or more, the roots will grow up within the thatch instead of in the soil, making grass susceptible to insects, disease, and weather stress. If your lawn feels spongy, you may have thatch buildup. Thatch is reduced by aeration, topdressing with organic matter, or power raking. In healthy lawns, earthworms and soil microorganisms break down the thatch.

**5. Watering and Poor Drainage**— Drought conditions, excessive watering or poor drainage due to soil type are all invitations for weeds. Watering needs are very site specific, but generally speaking, a deep watering of about one-inch once a week in the early morning is best. Your type of soil impacts your drainage and is also site-specific. Once you establish a deep root system from mowing high, you will need less water. Check with your local nursery for more specific recommendations and your soil type.

**6. Grass Seed and Seeding** – Grass varieties differ enormously in their quality, resistance to certain pests, tolerance to climatic conditions, growth habit and appearance. Some weeds are the result of using poor quality grass seed. Over-seed with the proper grass seed for your region to promote a dense turf that out-competes weeds. Consult your extension service website to learn the best grass variety for your region and site conditions (sun or shade). Your work to create a healthy lawn will help to protect public health and the environment.