

CORN GLUTEN MEAL: A NATURAL PRE-EMERGENCE HERBICIDE

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Corn gluten meal (CGM) is a natural substitute for synthetic pre-emergence herbicides. Pre-emergence herbicides attack seeds while they're still in the ground, before the seedlings emerge from the soil. CGM is a by-product of commercial corn milling that contains the protein fraction of the corn. Its use poses no health risk to people or animals. In fact, because it is 60% protein, corn gluten meal is used as feed for cattle, poultry, fish, and dogs. In addition to the 60% protein, corn gluten meal is 10% nitrogen, by weight.

The use of corn gluten meal as an herbicide was discovered during turfgrass disease research conducted at Iowa State University. CGM was observed to prevent grass seeds from sprouting. Further research has shown that it also effectively prevents other seeds from sprouting, including seeds from many weeds such as crabgrass, chickweed, and even dandelions.

Corn gluten meal is effective **only** against seeds, not existing plants. Annual weeds that are already up and growing will not be killed by products made of corn gluten meal. They'll die on their own, though, by the end of autumn. But most of the seeds they produce later in the season shouldn't sprout - provided you've applied the CGM properly and at the correct time. Crabgrass, foxtail, purslane, and prostrate pigweed are examples of annual weeds found in lawns.

Existing perennial weeds such as quackgrass, plantain, and dandelions won't be damaged by CGM, either. And, they'll still come back from one year to the next because their roots survive most winters. What corn gluten meal **will do** is stop the seeds they shed each summer, so the population of these particular weeds won't increase. In fact, because some will die of "natural" causes, their numbers should actually decrease after several years of consistent CGM use.

How to apply corn gluten meal to lawns

Corn gluten meal is available in powdered and pelletized forms, both of which work equally well. The pelletized form is easier to use, though.

Apply corn gluten meal first in late April/early May, then a second time around mid-August. Spread the product evenly, at a rate of twenty pounds per 1,000 square feet of lawn. Water it lightly into the soil in order to activate it. The CGM should remain effective for five to six weeks each time you apply it.

Most annual and perennial weed seeds sprout in spring or early summer, but there are a number of "winter annuals" that may sprout either in spring or fall. Chickweed, shepherd's purse, and speedwell (Veronica) are examples of winter annuals that may be found growing in lawns. When these seeds sprout in fall, their roots live over winter, giving them a head start the following spring. By the end of that growing season, they die, just like other annuals. Because of these winter annuals, you should apply corn gluten meal to the lawn in late summer as well as spring.

Results of using CGM on lawns

Don't expect to see instant results from using corn gluten meal. Every consecutive year you apply CGM - assuming proper timing and rate - should give you better results than the year before. By the fourth year, weed control should be very good.

When you use corn gluten meal you are also fertilizing the lawn, which encourages it to grow thicker and help exclude weeds. Applying CGM at the recommended rate of twenty pounds per 1,000 square feet, twice a year, gives your lawn a total of four pounds of nitrogen annually - more than enough to meet its needs. Corn gluten meal does not supply phosphorus or potassium, however. You should have your soil tested periodically to see if either nutrient should be added, and in what amount. Contact your local county Extension office for more information or visit the University's Soil Testing Lab web site, <http://soiltest.coafes.umn.edu>.

Garden applications

Corn gluten meal may be used safely in gardens around established perennial plants, to keep weed seeds from sprouting. It can also be used after transplants have been in the soil long enough to have "taken hold." Follow label recommendations for application rates.

Wait until seedlings are up and growing well before applying corn gluten meal to flower or vegetable gardens where seeds were sown directly into the soil. CGM will stop most seeds from germinating.

The downside

Potential problems with corn gluten meal stem from the fact that extensive moisture and microbial soil activity can reduce its effectiveness. You can control how much you water right after applying CGM, but you can't control rainfall. Sometimes seeds that had been prevented from forming roots can "outgrow" the problem.

Another potential drawback is price and availability. While it is becoming more readily available, corn gluten meal is still significantly more costly compared to other pre-emergence herbicides. Check places that sell garden supplies, farm stores or county co-ops that sell seed and grain for hobby farms, and some stores that specialize in selling food for wild birds.