

WHAT IS CGM

It is a natural byproduct of wet-milling corn during the corn syrup process. Corn gluten meal is used in the production of taco shells, pet foods, corn chips and animal feed.

CGM is a 60% protein material containing 10% nitrogen. It has the following amounts of Nitrogen, Phosphate and Potassium; 10-0-0.

Corn Gluten Meal CGM is both a pre-emergent herbicide and a natural source of Nitrogen fertilizer, making it an all natural weed and feed product. It inhibits the germination of seeds. There are no pesticide or synthetic fertilizers in it. There are products available on the market that have other additives making them good general lawn fertilizers with CGM.

When a product has a nitrogen level of less than 10 (10-0-0), it is less expensive and also less effective. The fillers used in CGM where the N-P-K level is less than 10-0-0 have little to no fertilizing effect. According to studies and research done at IOWA State University on CGM synthetic additives or fillers can result in a diminished pre-emergent effect on weed seed germination.

It can be a fine yellow powder or a golden pelletized product. Both are pre-emergent herbicides. Pelletized product provides ease of application and effectiveness for up to six weeks, unlike powdered product. It has a faint cereal like smell.

The first patent for CGM as a natural pre-emergent herbicide was in 1991 in the U.S.A. In Canada, the Environmental Factor Inc has a temporary registration for Turfmaize (trademark product name) weed seed germination inhibitor.

WEEDS THAT CGM CONTROLS

In Ottawa, CGM is used primarily to control crabgrass (*Digitaria ischaemum*) and dandelions (*Taraxacum officinale*), but will also reduce the germination rate for curly dock, knotweed, lambs quarters, pigweed, and plantain.

WHERE TO USE CGM

Lawns, flowerbeds, bulb beds and vegetable gardens

WHEN TO APPLY CGM

Three times a year is best but the spring and fall applications are the most important. Fall application prevents weed root systems from establishing before winter, while the spring application will control the germination of weed seeds from the previous fall.

The first application can be done in early spring, after the snow has melted, since the corn gluten pellets slow release life is about six weeks. This annual application occurs from mid April (for crabgrass control) to mid May (for dandelion control). Apply the first treatment of CGM before the tulips go dormant. If used annually it is 80-100% effective at reducing crabgrass germination.

The summer application should be from the middle to the end of June, this will reduce the weed seeds that blow in, in late May.

In July to mid August, the lawn will be dormant or semi dormant depending on the temperature and rainfall. Let the lawn go dormant by not giving it additional water. This reduces the survival of recently germinated weed seeds and the eggs of lawn insects such as the European Chaffer Beetle, Japanese Beetle and June Beetles (lawn grubs).

In Ottawa overseed from mid August to mid of September if the lawn is not robust. Grass seed needs at least 6 weeks to establish before winter arrives. CGM can't be applied until it is established.

The third CGM application is done in late August, if no grass seed has been put down, to stop the weed seeds that have blown in during the late summer from germinating. Otherwise the third application is done in mid September to late October, after the grass seed is established, and late enough to be active in the very early spring. This is known as a dormant fertilization.

HOW TO APPLY CGM

It is applied to the soil surface for lawn weed control. Broadcast the product using a fertilizer spreader at the recommended application rate. Water the product thoroughly after application to press it to the soil surface and then let it dry out after. The drying out puts the newly germinated seed in further stress.

The CGM will still be effective if you do not have a chance to water your lawn immediately after applying it, because the proteins in the CGM are released every time it rains or the lawn is watered, until the pellets decompose.

Watering is not necessary to prevent burning since corn gluten will not burn a lawn, unlike many synthetic lawn products. If you spill more than a handful, simply spread it around with a rake.

Mix it into the top 1/4" of soil before transplanting flats or container grown annuals, perennials or vegetables. These plants will not be harmed by the CGM because they have a large strong root system. With fewer weeds in your garden, nourishment from the soil will be directed to desirable plants instead of strengthening weeds.

The CGM in pellet form is easier to apply than the powder form, will not cake when it is watered and will not blow away upon application.

Suggested application rates are in the order of 5 - 10 Kg / 100 m² to lawns or gardens depending on the time of year and how many weeds exist in the garden or lawn.

Buy the quantity needed for each application and if there is any left over keep it dry otherwise it may decay.

RESULTS

When it is applied annually in the spring there is up to 98% control of crabgrass germination. The plants do not grow so with repeated use there are less seeds on the soil to germinate. CGM won't damage the lawn, or soil because it is a natural product. People and pets can enjoy the greenspace or yard immediately after application because CGM is non- toxic.

In fact the Nitrogen is in the form of a slow release fertilizer, so the plants will be lush, leafy and dark green.

Some companies have added other nutrients to make it more of a broad based fertilizer, but to be effective as a pre-emergent herbicide it must be 60-98% CGM. (10-0-0)

HOW IT WORKS

The natural plant proteins (dipeptide) in Corn gluten meal stops root growth when seeds germinate causing the plants to die. These proteins are toxic to root growth in seedlings. The effectiveness increases if the soil dries out shortly after germination, because the plant will be unable to regrow a root system before it dies .

New products are being tested; research into hydrolyzed proteins from corn and other grains, show that they have higher herbicidal potential and can be applied as spray, making them easier to use.

Other Natural Herbicide Products

There are new environmentally friendly contact herbicides that use pelargonic acid a fatty acid found in plants and animals. They rapidly lower the pH of any plant sprayed weakening the cell walls and killing the plant in about 2 hours. They are not systemic nor selective so they can not be used on lawns Natures Glory, fast acting Weed and Grass Killer contains acetic acid (vinegar) and lemon juice. Ecoval Company sells a commercial formula which is 25% acetic acid.

ADDITIONAL INFO

<http://www.gluten.iastate.edu/>

<http://www.hort.istate.edu/mcdade.html>

<http://www.hc-sc.gc.ca/pmra-arla/english/pdf/reg/reg2003-09-e.pdf>

<http://attra.ncat.org/attra-pub/PDF/weed.pdf>

<http://users.adelphia.net/~nagahiro/rutgers/HTML%20Docs/PowerPoint/Tue-B.Holm.pdf>

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