Transform Compost Products

healthy soil, healthy future

European Chafer Deterred by Healthy Soil

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We in the lower Mainland are alarmed by the proliferation and spread of the European chafer, which started damaging lawns in New Westminster in 2001. To control the European chafer in our quest for a pesticide free environment, communities are promoting the application of beneficial nematodes, and make general statements about the benefits of maintaining a healthy lawn. What can we learn from eastern North America, who have been dealing with European chafer for decades? What is a healthy lawn, and how does it deter the European chafer?

European Chafer Damage

European chafer beetles lay their eggs in lawns in June. These eggs hatch in July and develop into chafer grubs, which feed on fibrous roots throughout the fall and winter until April. The adult beetles emerge in late May, and begin the cycle all over again.

The grubs damage the root systems of the grass in the lawns, and can also move to other plants. The most obvious damage happens in the fall and winter, when animals and birds dig up the grass to feed on the grubs.

How Does Eastern North America Deal with European Chafer and Other Grubs?

Given that the European chafer and other grubs have been in eastern North America for decades, perhaps some of their wisdom may assist us in our fight against the grub. Jeff Ball, Garden writer in New York for 28 years, writes in his Yardener.com website, “The condition of the soil in your yard greatly influences the size of the grub population and the severity of their damage. First, soil that is thin and infertile because it lacks organic matter has large populations of grubs because there are no naturally occurring beneficial insects in it. Also, grubs are more prevalent in yards where there has been frequent routine or preventative use of broad-spectrum insecticides. These products kill bad and good insects indiscriminately, so nature’s first line of defense--the beneficial insects--is eliminated along with the pest insects.”

We also see other references to the benefit of increasing the organic matter in our soil. Paul Tukey, author of The Organic Lawn Care Manual, sees compost treatments as the basis for all organic lawn care. "It improves soil structure—especially in clay or sand-heavy soil—and is full of beneficial organisms, including bacteria, algae, fungi, and nematodes, that keep your soil healthy." The Toxics Use Reduction Institute at the University of Massachusetts suggest that grub problems are rare in organic lawns, possibly due to high biological activity and plant diversity in the soil. (www.turi.org/toxics_use_home/press_center/tip_sheet_series/10_tips_for_a_healthy_pesticide_free_lawn)

What is a Healthy Lawn?

There are varying definitions for a healthy lawn and for how to maintain it. Those having experience with grubs in eastern North America understand that a maintaining a healthy organic matter is one of the most important preventative strategies for European chafer and other grubs, because a healthy organic matter contains beneficial organisms that eliminate the grubs, and keep the biology in balance. A healthy lawn is more than aerating, dethatching, fertilizing, deep watering and high mowing. It requires the return of organic matter into the soil.

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Many Lower Mainland Lawns are Depleted of Organic Matter and Micronutrients Making Them Susceptible to Chafer Damage

Many of our lawns in Vancouver do not have much organic matter or micronutrients to maintain a healthy soil. Older homes have lawns that have had nutrients and organic matter removed for 80 years or more. Newer homes have all of the topsoil removed before construction, then perhaps as little as 5 mm of topsoil returned for the lawns.

Removing the grass clippings from our lawns removes not only the nitrogen, phosphorus and potassium that we put back as chemical fertilizer, but also micronutrients not supplied in chemical fertilizers. Our rainfall also leaches out nutrients, making our soil more acidic, further reducing the soil productivity and health.

We observed this soil depletion first hand on a property on Granville, where the owner called and mentioned that although the lawn was aerated and fertilized every spring, it did not grow well. An application of an organic fertilizer containing a balance of micronutrients was the "magic" that this lawn needed. The grass or the soil did not have to be replaced, it just needed the "makeover" with organic matter and micronutrients.

The Best Long Term Defence Against European Chafer is Annual Compost Application

A well cured compost contains organic matter that feeds the soil microorganisms, but also contains beneficial organisms, including beneficial nematodes that feed on the grubs. Application of nematodes only may control the European chafer for the season, but we can encourage the survival of these nematodes by providing a healthy home for them by providing additional organic matter through the addition of compost.

Control of European chafer using insecticides is not a sustainable solution because it also destroys the beneficial organisms, making the lawn even more susceptible for future infestations.

Understanding the Compost that is Being Used is Important

There are many different types of compost, with widely varying nutrient contents, and degrees of decomposition. The rule of thumb is that a longer curing time for compost encourages the proliferation of beneficial organisms such as beneficial nematodes. The particle size of the compost is important, as woody bits in the compost provide little value for your lawn. Avoid composts that contain sand, as sand is of little value in improving the health and organic matter of your lawn. Understand the source and nutrient levels of the compost as they can vary by an order of magnitude, depending on the source material and how long they have been composted. When adding compost in the spring, you can use compost containing higher amounts of nitrogen.

Paul Tukey, in his book on organic lawn care, advocates the application of ½" (6 mm) of compost. This may be a good recommendation for a yard waste type compost, but not for higher nutrient containing composts that are now available. We recommend addition of ¼" of a high quality, aged, and well screened compost. It is easy to rake into the grass, in fact using a regular rake an thoroughly raking the compost into the grass provides approximately ¼" of compost. We find that this is better than a ½" application of compost, which can choke the lawn for a short period of time.

Grass Recycling is One of the Best Practices to Maintaining a Healthy Lawn

Grass recycling is beneficial in that it recycles the organic matter and the nutrients. We have seen lawns that look incredible the entire season with an annual application of organic fertilizer or a high nutrient containing compost. It only means that you may be cutting this lawn at least twice weekly during spring and fall. Healthy lawns do not accumulate thatch because the soil organisms decompose the grass and dead roots. Healthy lawns also not require aeration, as the soil organisms are doing this for you 24 hours per day.