

What control options are available?

1. Cultural Control

Maintaining a healthy lawn is your first line of defense against grubs. Healthy, vigorously growing lawns can tolerate more grub feeding, because they generally have more extensive root systems. (See the *Lawn Care and European Chafer Management Calendar*).

Some residents are also considering the use of alternative ground covers on selected areas of their lawn.

Groundcovers can be chosen to be aesthetically pleasing year-round and to require minimal maintenance. Mulch or paving stones can also be considered in high traffic areas.

Dutch White Clover (*Trifolium repens*) is one example of a low-growing plant that will form a green, durable ground cover that is easy to maintain. It also produces tiny white or pale pink flowers that may attract bees and other beneficial insects to your yard.

2. Physical/Barrier Controls

Raise your mowing height to 6 to 9 cm (2.5 to 3 in), since beetles prefer laying eggs on closely cropped lawns. Higher grass blades will also help to protect the soil surface from water loss during the summer, and encourage deeper root growth.

In chafer infested areas, some residents have had success with the

use of Remay cloth, plastic sheeting, or landscape fabric to cover their lawns before dusk (approximately 9 pm) in June and July when the adult beetles are most active. A cover may prevent mated females from laying eggs in your turf and repeating the cycle. (Note that some covers may need removal each morning).

3. Biological Control

A recent study commissioned by the Western Canada Turfgrass Association, the Canadian Nursery Landscape Association, and several local municipalities (2005), revealed that biological treatments could be very effective at controlling the European chafer population, when used in combination with healthy lawn care practices.

According to the study, the most effective biological control measure was the natively-occurring nematode (or microscopic roundworm) *Heterorhabditis bacteriophora*.

The *H. bacteriophora* nematode is a "cruiser" species that actively infects and kills white grubs, such as the European chafer grubs.

The 2005 study revealed that *H. bacteriophora*, when used at a rate of up to 3 billion nematodes per acre, can provide significant control of young (1st instar) European chafer grubs in the ground.

Treatments are most effective if done in late July, after the European chafer eggs have hatched and when the young grubs are most vulnerable to nematode attack.

Nematode products will be readily available for purchase by homeowners before July 2005.

4. Chemical Control

Chemical insecticides are also available from garden centres and lawn care companies, however these products are not appropriate for use in the late fall or spring. If you see European chafer damage, it may be too late to apply any form of treatment. Save your money, and focus on preventative lawn care until it's the right time of year to plan for your treatment.

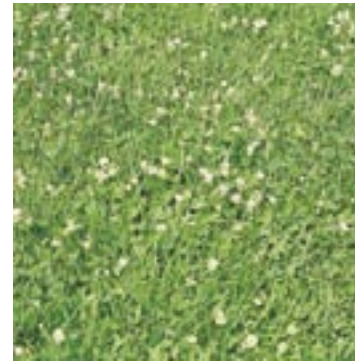
Before you purchase a chemical insecticide or hire a lawn care company to do the work, remember that many insecticides are harmful to beneficial insects (such as bees), harmful to aquatic organisms (via storm drains), and have longer-term effects in the soil or groundwater.

Chemical treatments should only be considered as a last resort. The City recommends that healthy lawn care practices, alternative ground covers, and biological treatments be considered as the preferred approach.

Visit your local gardening centre for other suggestions or advice on maintaining your lawn, or replacing it with alternative groundcovers.

What is the City doing?

In 2005, the City is intending to experiment with the use of Dutch White Clover and varying soil depths in newly constructed medians and boulevards along Southridge Drive.



The City will also be considering the replacement and biological treatment of turf on high priority public areas. The City will be evaluating the success of these control methods over time, and reporting back on their ability to prevent European chafer damage.

Contact Us

For other inquiries, or to report the European chafer:

City of Burnaby, Engineering Department
www.city.burnaby.bc.ca
Tel: 604-294-7460
Fax: 604-294-7425
engineering@city.burnaby.bc.ca

Information on the

European Chafer Turf Pest

The European chafer is a new turf pest to our region and was first identified in New Westminster in 2001. It is currently spreading westward into Burnaby and other parts of the region - appearing in lawns, boulevards and medians.

European chafer is here to stay, and it may be several years before an effective control strategy can be achieved. In the meantime, healthy lawn maintenance, alternative groundcovers and biological treatment may be the keys to a pest-free yard.

Read more to find out ways of managing the European Chafer infestation on your property.



March, 2005

What is the European chafer?

The European chafer, *Rhizotrogus majalis* is a beetle that has been introduced into Canada, and which has few natural predators to control it.

The larval stage of the European chafer is a grub that feeds on the roots of many plants, but prefers the fibrous roots of turf grasses. Grubs (larvae) have a soft, white, C-shaped bodies with tan or brown heads and three pairs of long legs.



The adult stage of the European chafer is a tan coloured beetle, that measures approximately 1.3 cm (0.5 in) in length.

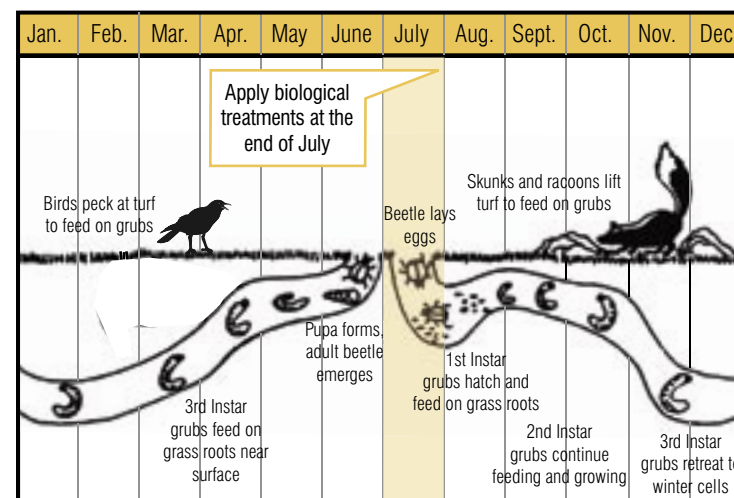


If you have observed the European chafer, please contact the City of Burnaby Engineering Department to report its location. Phone: 604-294-7460 or e-mail: engineering@city.burnaby.bc.ca.

What is the life cycle of the European chafer?

The European chafer completes its life cycle in one year. The adult chafers swarm in mating flights on warm evenings in June and July. The beetles usually fly to tall, vertical structures to mate. The European chafer does not generally cause damage to lawns or other vegetation at this time. The mated females return to grassy areas to deposit their eggs below the soil.

Eggs hatch in June to early August and the larvae or grubs begin feeding on turf roots. From mid-May to early June of the following year, the larvae stop feeding and pupate (undergo metamorphosis), and the adult beetles emerge two weeks later.



Adapted from the Landscape Ontario Horticultural Trades Association

How do I know if I have European chafer grubs in my lawn?

The only way to be sure if you have the European chafer in your lawn is to dig up several test sections in both affected and unaffected areas of your lawn.

Using a garden shovel or spade, cut three sides of a 12-inch square. Grasp the open edges and peel back the turf like a carpet, towards the attached side. Look for the white, C-shaped grubs in the soil, and just underneath the newly-exposed turf roots. If you count 5 or more grubs per square foot, control measures may be warranted.

Often, birds and small mammals will peck or pull back the turf in search of a meal of grubs. Damage is most severe in the fall and the spring when the grubs are increasing in size rapidly and feeding near the surface.

Lawn Care and European Chafer Management Calendar

January-March

- If more than 5 chafers are found per test section of lawn, consider using a biological (nematode) treatment at the end of July.
- No treatment methods are successful at this time of year.

April

- Aerate compacted soil with a power aerator.

May

- Lightly rake over damaged areas of turf.
- Apply a topdressing of compost or topsoil to damaged areas of the lawn.
- Reseed with a deep-rooting grass mixture, such as perennial rye grass and fescue.
- Water newly planted lawns daily
- Water established lawns once or twice weekly, giving them a total of 2.5 cm (1 in).
- Apply an organic-based lawn fertilizer or a good quality slow release synthetic chemical fertilizer.
- Mow once per week, maintaining the grass at a height of 5-6 cm (3-4 in). Leave the grass clippings on the lawn.

June

- Water lawn once or twice weekly, giving it a total of 2.5 cm (1 in) per week (following watering restrictions).
- Mow once per week, maintaining the grass at a height of 5-6 cm (3-4 in). Leave clippings on the lawn.

July

- Water lawn once or twice weekly, giving it a total of 2.5 cm (1 in) per week (following watering restrictions).

- Mow once per week, maintaining the grass at a height of 5-6 cm (3-4 in). Leave clippings on the lawn.
- Apply nematodes, *H. bacteriophora*, to the lawn during the last week of July.
- Water lawn for 3 hours prior to nematode application, and for 3 hours following nematode application. Nematodes should be applied in the evening or on a cloudy day.

August

- Water lawn once or twice weekly, giving it a total of 2.5 cm (1 in) per week (following watering restrictions).
- Mow once per week, maintaining the grass at a height of 5-6 cm (3-4 in). Leave clippings on the lawn.

September

- Apply an organic lawn fertilizer or a good quality slow release synthetic chemical fertilizer.
- Water lawn once or twice weekly, giving it a total of 2.5 cm (1 in) per week (following watering restrictions).
- Mow once per week, maintaining the grass at a height of 5-6 cm (3-4 in). Leave clippings on the lawn.

October - November

- Monitor for European chafer grubs in test sections of your lawn.
- Minimize any skunk and crow damage by replacing and stomping down clumps of grass immediately after they have been pulled up.

December

- No maintenance required.