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Annie Deutsch, Door County UW-Extension Agriculture Agent

Does your lawn look like this?



What is it and why have I never seen this before?

The turf damage seen around Sturgeon Bay is due to grubs (the immature stage) of the European chafer beetle. This is a new invasive insect in Wisconsin and it was first found in Door County in the summer of 2016.

European chafer grubs feed on grass roots which results in dead patches of grass. The areas that are torn up are due to birds, skunks, or other animals searching for and feeding on the grubs. This insect could be present in varying numbers in grass all throughout Sturgeon Bay and the surrounding regions.

Other things can damage grass including salt from the winter, waterlogging, areas with too much shade, nutrient deficiency, disease etc., so do not treat for grubs until grubs have been found. To search for grubs, pull back the grass at the edge of a dead or dug-out patch in about a 1 foot square. Shake the clump of grass to free any grubs that may be feeding in the root zone. Dig about two inches down into the soil and look for grubs there as well. Repeat this process about 5 times in other areas in the lawn. In the spring, the grubs are mostly white, C-shaped, and about the size of a dime. Five to ten grubs in a one square foot area is enough to cause noticeable damage in non-irrigated turf.

What can I do about it in the spring?

Unfortunately there isn't much to do about it in the spring; but things should start to look better in late May through July. Immature insects go through different growth stages, and in the spring the European chafer grubs are fully mature: they are the largest that they will get, they are eating the most, and they are the least susceptible to insecticides. Insecticide applications at this time will have inconsistent results and likely will require additional treatments at other times during the summer.

Because the grubs are fully mature in the spring, will feed until around May, descend into the soil to pupate (transform), and then emerge as adult beetles. From the time they pupate, are adults, and the next generation are eggs, they don't feed so the grass can begin to recover.

During the spring, the best thing to do is to press down any patches of grass that have been dug out and wait. As temperatures warm, grass seed can be spread to fill in bare patches.

How do I treat for them?

While there isn't much to do about European chafer in the spring, insecticides are the main way to deal with the grubs. These products should be applied to the grass mid-summer. Not all insecticides will work, and even effective insecticides will not work well when used at the wrong time. There are two categories of insecticides: preventive ("pre-emergent") insecticides and curative ("post-emergent") insecticides. The active ingredients in these products are listed in the table below. To be most effective, preventative products should be applied mid-summer (June – late July, depending on the weather) and curative products should be applied in August - September while the grubs are still small. Often a treatment with a preventative product will need to be followed up with a curative product for better control.

PREVENTATIVE PRODUCTS	CURATIVE PRODUCTS
Chlorantraniliprole	Carbaryl
Clothianidin	Clothianidin
Dinotefuran	Trichlorfon
Imidacloprid	
Thiamethoxam	

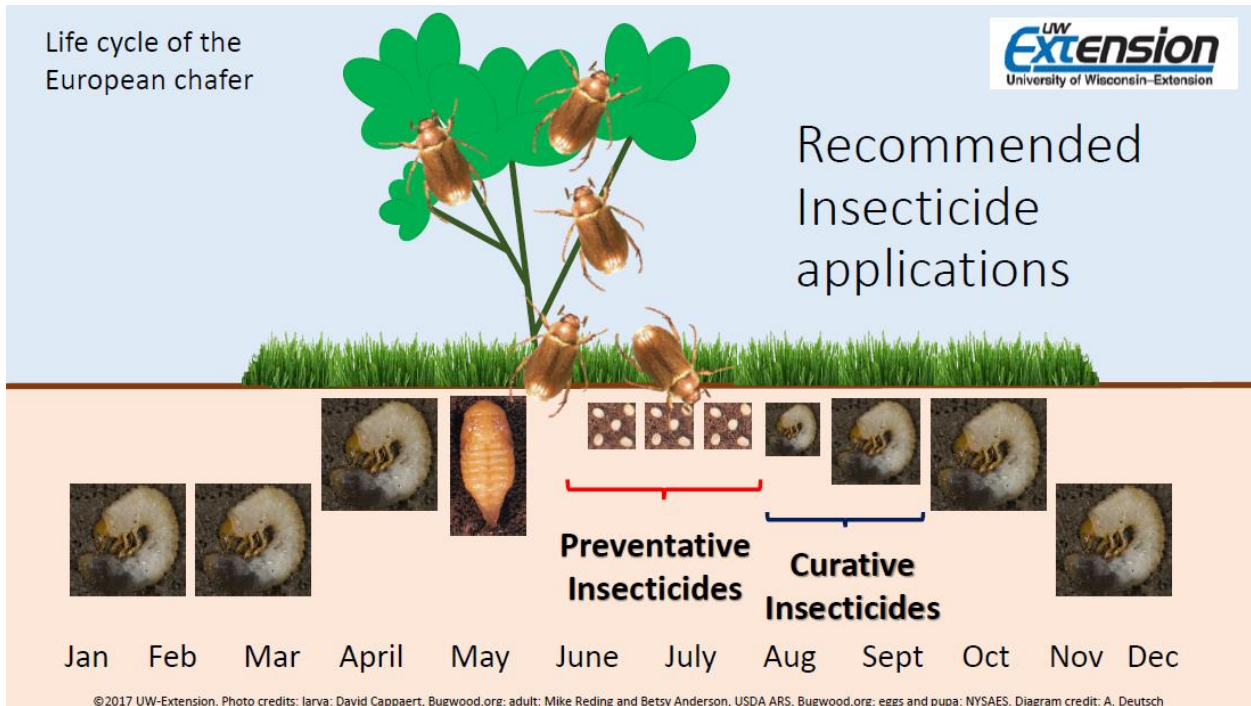
Insecticides containing only the active ingredient gamma-cyhalothrin will not be effective. Additionally, alternative-type products including nematodes have not been shown to be reliable. Milky spore only attacks Japanese beetle grubs, so it will not work against European chafer. Over applying insecticides or using home-made concoctions may have detrimental effects to the grass or other organisms in/around your yard, so be careful and make sure to follow all label instructions whenever using any insecticide or related product. Any insecticide application must be watered in with at least 1/5" water to move the product through the grass root zone to where the grubs are feeding. Insecticide applications targeting the pupae, adult beetles, eggs, or overwintering grubs will not be effective.

Good lawn care throughout the summer can help the grass grow well and tolerate more damage. Watering the grass, applying fertilizer, and cutting it at a longer height can all help. Beware that too much fertilizer may cause the grass to grow more leaves but less roots, meaning that grub feeding will kill the grass more quickly. Therefore, make sure to follow all label recommendations for fertilizer use and remember that more is not necessarily better.

Even with the correct insecticide and excellent lawn care, the European chafer is very hard to control. Invasive insect populations often are extremely high the first few years they are found in an area and then may start to level out. Since this is only the second year that European chafer has been present in Wisconsin, it is unknown whether this will be true and what are the long-term effects of this insect here.



Mature European chafer grubs dug up April 6, 2017, from a yard near Sturgeon Bay (photo: A Deutsch)



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