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## MULCH CORNER

### INSECTS, PESTS AND DISEASE ASSOCIATED WITH MULCH

By John Ferguson

I overheard a customer asking about termites and mulch the other day, so let's talk about this issue.

#### INSECTS, PESTS AND DISEASE ASSOCIATED WITH MULCH:

All organic mulches attract insects. The good news is that in organic or living mulches the beneficial insects outnumber the bad ones by 100 to 1 or more. In inorganic mulches (plastic, etc.) the ratio is much less or even favors the pest species. Organic mulches give beneficial insects a place to hide during the day. At night beneficial insects, like hunter spiders (not web weavers), prowl your garden looking for pests to devour. Many species of moths that pollinate night blooming plants also use the mulch as a home during the day. The benefits of a good organic mulch far out way any problems that might occur.

The most common insect pest that people worry about is termites. Termites rarely attack wood mulches near the foundation of buildings since they are heat and light sensitive. Termites eat wood as their food source hence they want fresh wood that is not very decomposed. We find these conditions in mulches that are colored and in ashen treated mulches that use fresh wood (another reason to avoid these types of mulches). In nature termites like a very thick woody layer to live in such as a large log that is just begging to rot and is many inches thick. If we keep our mulch layer less than 4 inches thick it does not make a good home for termites, hence they are not attracted to it. When we use compost or composted

native mulches, the high levels of beneficial microbes tend to parasitize termite larva, and as a result they tend to avoid these mulches.

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Often in the spring when termite colonies (also many ant species) migrate to new locations, they will spend the night in your mulch and be gone in a day or so. Many compost and mulch companies often find their mulch storage piles temporarily inhabited in the spring as the warm moist piles makes a good hotel for the migrating insects to spend the night. When the daytime temperatures warm up enough the insects continue their search for a new home.

Studies have found that damage from Colorado potato beetles was 2.5 time higher in un-mulched potato gardens than gardens mulched with wheat straw. The mulched plots also had 33% higher yields.

Slugs and snails are the most common pests and love to hide in mulch, particularly in wet weather. These pests can be controlled by using predator snails (decollate snails) which will naturally keep these pests under control by eating them. Toad frogs that hide in a good mulch will also love to make a meal of a juicy slug. Diatomaceous Earth (or mixed with pyrethrum dust, a natural insecticide) is also a product that helps control these pests. Also ducks and geese love to eat slugs and snails and leave a nutrient rich manure behind.

Researchers at the University of Vermont have shown that it is possible for disease transmission to occur via wood chips taken from infected trees and used around healthy landscape plants. They found that the nematode that causes pine wilt (*Bursaphelenchus xylophilus*) could move from infected chips to young Scots Pines if the infected chips were tilled into the soil during transplanting or applied against a trunk that had been wounded. While it is theoretically possible, it is very unlikely this type of disease transmission would occur in practice as raw wood chips are not incorporated into the soil. Also, the mulch should NEVER be piled against a tree trunk (nematodes cannot move more than a couple of centimeters on their own). Additionally, the pine sawyer beetles that transport

this nematode are not attracted to wood chips. This small risk can be eliminated by composting the wood chips for a few weeks before applying them, as the heat kills the nematodes and pathogens. Also the same risks apply to bark mulches, since infected trees are often the first ones harvested for lumber and pulp.

Verticillium wilt is a common disease caused by a soil-borne fungus resulting in the decline or death of many shrubs and trees. It is caused by the fungus *Verticillium dahliae* and endures in the soil in infected plants or as flecks of sclerotia, a type of fungal tissue designed for long term survival of the fungus. If diseased trees are ground up and used for mulch, it is possible that this disease can spread to mulched plants. It has been found that excess synthetic nitrogen

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fertilizer favors development of this disease. However, this disease is rapidly destroyed if the mulch has been composted for at least 3 days at a minimum of 130 degrees Fahrenheit.

*Rhizoctonia solani* is another plant pathogen that causes damping-off of many types of seedlings. This pathogen is actually stimulated by fresh wood mulches (colored or ashen) as it feeds off the cellulose in the wood. Again, composting the mulch for a period of time before using eliminates this potential problem.