

Thoughts on Verbenone use for Mountain Pine Beetle
Prepared by Ingrid Aguayo, Forest Entomologist
Colorado State University – Colorado State Forest Service



The product verbenone for mountain pine beetle is commercially available and being produced by three companies: Contech (aka Pherotech), Synergy Semiochemicals Coop (aka Chemtica), and Hercon Environmental. These companies produce synthetic behavior-modifying compounds such as pheromones and kairomones for a variety of insects and other animals. Some of these compounds can help mitigate the impact of insect pests, and they are species specific, which means they affect mainly the target species.

Verbenone is the main compound of the anti-aggregant pheromone for mountain pine beetle and other bark beetles. The anti-aggregant pheromone indicates a 'no-vacancy' signal to bark beetles (aka 'push-away' tactic). This product is meant to be used as part of an integrated pest management strategy against mountain pine beetle, and not as the sole solution. An integrated pest management strategy includes destroying brood trees, maintaining healthy forest conditions (e.g. thinning), and in some cases spraying trees. Verbenone is also suggested for use in areas near waterways and campgrounds, where preventative spraying is not an option.

As noted above, verbenone does not kill the insect; it is used as a push-away tactic. In endemic (low population levels) situations, this product has proven to work very well. The synthetic compound is released into the air and the surrounding beetles are 'fooled' by the synthetic compound to go somewhere else to find a susceptible tree. However, at epidemic (high population levels) situations, the synthetic material is not able to 'fool' the communication system of the beetle. Research has shown mixed results on the use of this anti-aggregant pheromone in a natural forest setting. Many times results depend on the environmental conditions, tree species to protect, population levels, release rate of the pheromone, etc.

Verbenone is commercially available and registered in Colorado. Verbenone will not eliminate the mountain pine beetle problem, but it may minimize some of the impacts in an area when dealing with low populations of the beetle. In many cases landowners may gain some time to continue to carry out silvicultural treatments. This method is not meant to be used at a large scale. Follow directions and read all precautions on the label before using. If a landowner is interested in using verbenone they should contact their local forester to have their property assessed before deciding to use the product. The Colorado State Forest Service can provide technical assistance.

For more information contact:

Colorado State Forest Service, Forest Entomologist 970-491-6303