

Methods for Applying MCH to Protect Trees and Stands from Douglas-fir Beetle Infestation

Tools and supplies needed: MCH releasers
Staple guns or staple hammers
Hammer and aluminum nails (alternative to staples)
Hundel hammer (for special use areas)
Flagging
Protective eyewear
Protective rubber gloves
Bag for carrying MCH releasers
Compass
Appropriate footwear and other personal protective equipment
Soap and/or waterless hand cleaner

Application Procedure:

Pre-Application:

- * Determine the size of the area to be treated.
- * Determine the number of bubble capsules needed to treat the area. We recommend an application rate of 30 MCH bubble capsules per acre (a grid of about 38 by 38 feet).
- * Walk and flag the unit's perimeter. While not a mandatory step, it may be helpful in determining that bubble capsules are actually being applied within the treatment area.

Applying MCH Bubble Capsules:

- * MCH bubble capsules should be applied while wearing appropriate personal protective equipment. At a minimum rubber gloves should be worn, and eye protection should be available.
- * MCH bubble capsules can be applied to trees, snags, shrubs, fence posts, or any other object to achieve the appropriate spacing, keep the MCH off the ground, and prevent bubble capsule from being covered by foliage or other obstructions.
- * Ideally, MCH bubble capsules should be applied about 6 feet above the ground on the north side of a tree. In practice, bubble capsules are placed on trees, shrubs, or whatever is available as high off the ground as the person applying it can reach with a staple gun. If it is necessary to attach bubble capsules at a lower height to achieve the desired spacing, do so. For example, releasers might be attached to a down log, only one to several feet above the ground. If that becomes necessary, it would be advantageous to remove brush from around the capsule.
- * When attaching bubble capsules to objects, be careful not to puncture the "bubble" part of the releaser containing MCH. All bubble capsules have sufficient plastic around the bubble to attach the device. Place the nail or staple in that "border" area.
- * Bubble capsules may be slightly different, depending upon manufacturer. Follow label guidelines. For the Phero Tech and Synergy Semiochemicals, MCH releasers are "bubble caps." They are similar except that Phero Tech's are a brown plastic; Synergy's are white, with a green stripe (which is a year color coding—in '04 it was yellow, in '05 green). Both bubble capsules have a thicker membrane that faces outward from the tree. The bubble (thinner membrane) should be facing toward

the tree or shrub to which it is applied. The brown side (Phero Tech) or striped side (Synergy) should face outward.

*When possible releasers should be applied to the north side of objects, although this is not critical for the treatment to be effective. If it is necessary to attach the releasers to another aspect of the object to make them less conspicuous or for other reasons, that won't have a major impact on treatment efficacy.

Distributing MCH Bubble Capsules within the Treatment Area:

* First, determine the size of the area to be treated. For small areas (less than 0.5 acre) it is best to treat the perimeter of the area. Place about 16 bubble capsules at equal intervals around the perimeter of the unit. At a designated starting point staple up the first releaser. Next, pace off the appropriate distance (for a 0.5-acre unit, spacing is 32 feet between bubble capsules) and look for an appropriate place to staple the next releaser.

* Ideally, releasers are placed on the unit's perimeter, on the north side of a tree, about 6 feet above the ground. That may not always be possible. The important thing is spacing. As long as bubble caps are somewhat evenly distributed throughout the unit, even if some caps are 2 feet off the ground, the MCH should be effective.

* For larger areas, we recommend placing bubble capsules at a rate of 30 per acre. It might be preferable to place bubble capsules about 30 feet beyond the unit to be protected to avoid beetle-caused mortality on the "edge" of the unit. For that reason, it may be preferable to treat the perimeter first. Once the perimeter has been treated, remaining bubble caps should be evenly distributed through the interior of the area to be protected. Again, 30 bubble capsules per acre will be evenly distributed on about a 38 by 38-foot grid. Where treatment areas approximate squares or rectangles, this approach should lead to an even application of bubblecaps.

* In odd shaped units, after treating the perimeter count the number of remaining bubblecaps and devise your own transects to evenly distribute them throughout the unit.

* If, when walking a transect, you encounter an opening devoid of suitable MCH application sites, fasten two bubble caps to the object before the opening, estimate how many bubble caps should have been located in the opening, and staple additional bubble caps to objects after the opening to maintain appropriate dosage.

Protecting Individual Trees:

* For protecting individual trees, place two bubble capsules on each tree to be protected. Avoid putting bubble capsules on the south side of the tree, if possible. Best to put them on the northwest and northeast side of the bole where feasible. If trees are especially large (greater than 30 inches dbh), place 3 bubble capsules evenly around the tree's bole. For trees in campgrounds or other areas of high use, we recommend placing bubble capsules at about a height of 12 feet using a long-handled (Hundel) hammer.

Additional Information:

Ross, Darrell W.; Gibson, Kenneth E.; Daterman, Gary E. 2001. Using MCH to protect trees and stands from Douglas-fir beetle infestation. FHTET-2001-09. Morgantown, WV. USDA Forest Service, Forest Health Technology Enterprise Team. 11p.