# Stopping pine bark beetles

## with

# "Pork'n'Beans"

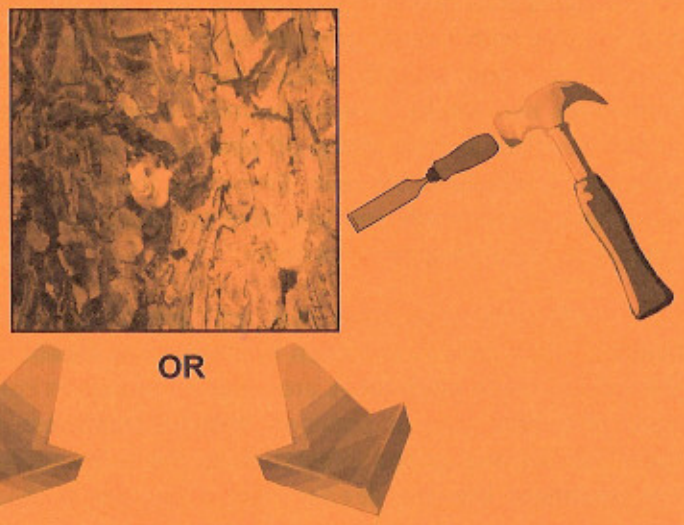
When you squash a cockroach, a wave of satisfaction sweeps over you immediately. If you spray a tree to get rid of caterpillars, you'll have to wait a little longer for satisfaction, maybe four hours, when the little buggers start falling to the ground. Actually, some of the caterpillars grab the tree with a death-grip and never let go. Spraying orange trees to control scale and whitefly takes even more patience to see results - sometimes two weeks, or even months to rid the leaves of black sooty mold. Satisfaction from killing off pine bark beetles takes a maximum of patience. It takes a whole year. Even then, the pitch tubes will remain on the trunks permanently and you have to restrain yourself from cutting a pocked, but healthy green tree down.

We only spray trees that are "green hits", that is: trees with healthy, green crowns and pitch tubes marking recent beetle attacks on the trunks. These pitch tubes are beige to orange in color and resemble wads of bubble gum or popcorn. Without treatment, trees with pitch tubes will die and spread infestation to the surrounding pines. Though our treatment kills the beetles right away, will it stop the blue stain fungus they brought in with them? The blue stain may kill trees anyway. But, it will take a FULL YEAR to see if we saved them.

### HOW CAN YOU KNOW THAT YOUR TREE WILL BE O.K.?

You would have to take a hammer and a big wood chisel and chip out a 2 inch x 2 inch square of bark surrounding a pitch tube. Then, carefully peel the bark back and look at what's inside. If everything is working right, all the beetles and beetle grubs will be dead within two weeks of spraying. All the activity going on under the bark would stop. If you are checking the tree later in the summer, just after the tree was treated, you should see only the vertical nuptial chamber, running with the cambium, possibly a dead adult beetle, and pristine, yellowish cambium and sapwood. You can wait and postpone chiseling and

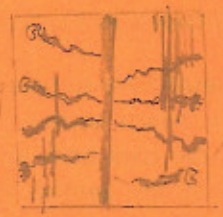
observing the tree all the way until June of the *following* year. But, by that time, a quick decision would have to be made, whether to keep the trees - or remove them right away. Get out the hammer and chisel again and take another sample of the bark surrounding a pitch tube. Ideally, the cambium and inner bark should still be pristine, with only the original, brown nuptial chamber visible. If the spray has failed for some reason, you will see "C" shaped grubs about the size of rice grains, winding galleries in the sapwood, blue staining of the sapwood and possibly young adult beetles in groups, ready to fly out to hit other trees. By this time, it is too late to kill the adult beetles by simply debarking. The entire tree trunk would have to be cut up and burned or removed from the area.



OR

**Pristine cambium**

nuptial chamber only



**Infested cambium**

nuptial chamber, larval galleries,

larvae, adults and blue staining

## OTHER THINGS

The best way to keep your pine stand healthy and beetle free is to keep it thinned to remove crowded stems and allow space for them to grow. Remove Intermediate and Suppressed stems to favor well-spaced Dominant and Co-dominant trees of good form. Even aged pines grow and race for the sunlight over the years. Remove the losers. The rest of the trees will fill the openings. Since the root systems of all the trees are interlocked, the stronger trees will take over the root systems of the cut trees. Annosus root rot will also creep into the roots of the standing pine trees from the stump surfaces of the cut trees. It is very important to make these stumps less hospitable to this rot by spraying them with a 10% solution of Borax, boric acid or Di sodium octaborate. You can also use a saturated solution of Urea formaldehyde fertilizer for the same effect. Thinned trees infected with annosus will blow down in wind storms.

Turf management in the Rocky Mountain west usually includes the use of herbicides, mixed with fertilizers to help the grass grow better. Picloram is a common additive that is VERY destructive to Ponderosa pine, causing yellowing. decline and eventual death. This also aggravates beetle problems and causes more trees to die.

## .....and, WHAT IS "PORK'N'BEANS??

"Pork'n'beans" is a name we gave to a mixture of an insect-killing microscopic roundworm and an insect-killing fungus. The roundworms are shipped in bulk from a supplier in California, the fungus is in fresh cultures custom grown for our clients. This mixture has been in use in New Orleans since 1997 against the imported Formosan subterranean termite, with thousands of successful treatments of infested trees and buildings. In 2002 it was brought to the Black Hills of South Dakota and tested on beetle grubs in infested pine logs. In 2009 -10, a large study involving more than a thousand pine trees was conducted in three Rocky mountain states with excellent results. These natural pathogens can penetrate inch thick pine bark, find the beetle grubs and kill them quickly. They have been observed moving from treated to untreated trees, suppressing beetle populations in an entire multi-year dead patch. Since the mixture is not a chemical pesticide, it is suitable for organic agriculture. It is safe to humans, higher animals and honeybees. Application is quick and relatively inexpensive. The results last for years.

**WHO DO YOU CALL?**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