PREVENTATIVE SPRAYING FOR IPS & WESTERN PINE BEETLE

The western pine beetle WPB and ips species are insects capable of attacking and killing ponderosa pine and pinyon pine. Periodic epidemics are capable of causing heavy mortality in drought stressed and dense stands of pine. Many situations exist where high-value pines require protection from uncontrolled beetle pressures nearby. **Preventive spraying provides a proven method of keeping uninfested but susceptible pines alive, despite attempted attack.** As such, it is relatively safe and affordable “insurance” that protects key trees until the nearby beetle threat subsides.

**CANDIDATE TREES** – In the great majority of cases, trees selected are big, valuable ponderosa and pinyon pines. Of course, trees selected should be species normally attacked by either the western pine beetle or ips beetle. If these are the insects of concern, then spruce, fir, and juniper do not need to be treated. (Note, these species are attacked by other bark beetles and may warrant preventive spraying when their respective threats are present.) Preventive spraying involves the application of pesticides and is usually performed by commercial applicators. Because of the associated environmental considerations and expense, it is neither practical nor advisable to spray every tree on a tract of land. Rather, preventive spraying is intended for important, “must-save” high value trees. **Since WPB and ips rarely attack trees under 4 inches in diameter, smaller trees do not normally require spraying.** These beetles attack stressed trees more often than healthy ones. Stress factors include: mistletoe, root cutting, bark wounding, soil compaction, drainage changes, adverse weather (such as drought), and infestation by other insects. A tree’s value is subjective, but typically comes from its size, pleasing shape, shade and proximity to recreation sites and homes. **Home builders should remember that trees carefully saved during construction were probably stressed, and as such, are attractive to beetles. Other highly vulnerable trees are those with infested firewood stacked against them and those near infested trees from which the WPB and Ips will fly.**

**WHEN TO SPRAY** – Based on the tested residual of materials registered for preventive bark beetle spraying, treatment needs to be done before beetle flight in **March or April on an annual basis during years when the risk of beetles is high.** Infestations can last a number of years in a local area and are often dependent on host availability and weather conditions. High precipitation years will help the pine produce sap needed to defend off beetle attacks.

**CHEMICALS LABELED FOR PREVENTIVE SPRAYING** - Over the past 20 years, the standard for bark beetle preventive spraying has been **carbaryl (trade name Sevin)**. This carbamate has long been used for the control of leaf-chewing insects in both forest and garden situations. Carbaryl comes in many formulations. The liquid concentrates designed for use on large trees require dilution with water prior to application. **Never dilute with petroleum liquids such as diesel fuel.** Carbaryl is most effective when the pH of water used for dilution is 6 (slightly more acidic than neutral). When using water of pH 7 to 8, it may be advisable to add household vinegar to the spray mixture to achieve a pH of 6. (A pint of vinegar is enough to lower the pH of 25 gallons of spray about 1 point). **ALWAYS READ THE LABEL FOR COMPLETE MIXING INSTRUCTIONS AND SAFETY PRECAUTIONS.**

Since about 1995, a second material called **permethrin (trade names Astro, Dragnet and others)** has been used for bark beetle prevention. This synthetic pyrethrin performed very well as a preventive bark beetle spray in research tests in California, Montana, and the South.
APPLICATION GUIDELINES - Application of preventive sprays can be a do-it-yourself activity but is usually done by commercial contractors, who must meet rigorous training, experience, licensing, and insurance requirements. If contractors are used, it is proper to ask for credentials.

Preventive spray is applied to the trunk from the ground up to a height where the trunk narrows to 4 inches. Large branches need to be treated out to a 4” diameter also. Spraying should wet the bark, but only to the point of run-off. Material needs to get into bark crevices. The entire circumference must be treated. Pine foliage and branches under 4” in diameter do not need to be sprayed.

Spraying should be done with an eye on the weather. Avoid excessively windy or freezing days. At least two (2) hours of rain-free weather should follow the application to allow proper drying.

Use formulations that are labeled for bark beetle prevention and specifically designed for use on trees. Usually these contain additives called “stickers” which allow better adherence to bark.

It is a good idea to identify or “mark” trees which have been sprayed. Placing a spot of spray paint at the base of treated trees is one method.

FOLLOW ALL SAFETY GUIDELINES ON THE LABEL. While these materials are safe when used properly, practice common sense with regard to the presence of wildlife, livestock, pets, and children during the application and drying period.

Most preventive spraying failures are due to:
1) improper treatment height
2) entire circumference not treated
3) applied too early or too late
4) wrong material
5) right material mixed improperly