

Results of Basal Bark Application of Garlon4 on *Ailanthus altissima* (Tree of Heaven)

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Ailanthus altissima (Tree of Heaven) is a highly invasive tree in riparian areas of California.

Through abundant root sprouts and allelopathy it produces thickets that outcompete and displace native vegetation (Hunter 2000). The tree is listed as an A-2 by the Calif. Exotic Pest Plant Council (Most Invasive Willard Pest Plants; Regional. 1999. CalEPPC in Exotic Pest Plants of Greatest Ecological Concern in California). Land managers have found it difficult to control this species with traditional methods such as the cut stump method where the tree is cut down with a chain saw and the stump painted with an herbicide such as RoundUp or Gallon4 (Kit 1997).

Resprouting and numerous retreatment are commonly required (Hunter 2000).

In April and June 2001 Kelly & Associates tested a basal bark application of Gallon4 herbicide in an oil base (paraffin hydrocarbons) at a rate of 1:3 (25% Gallon4 to 75% basal oil) on *Ailanthus altissima* (Tree of Heaven). On each of the two occasions, approximately 400 stems of this invasive tree were treated. An attempt was made to treat every stem, small or large, within the colonial structure typical of the plant. The herbicide mix, inspired by similar successful treatments on saltcellar (Bill Neil pers. comm.), was applied to the entire circumference of each stem as low to the ground (close to the roots) as possible. The spray pattern around the stem varied from about 15 cm (6 inches) on smaller diameter stems to 30 cm (12 inches) on large trunks in height. Since Gallon4 is known to volatilize above 86¼ F it's important to make the application during cooler weather or a cooler part of the day, to give the herbicide time to be absorbed into the tree. The tests were conducted on the Rancho Jamul Ecological Reserve, a new reserve bought by the California Dept. of Fish & Game. Within two weeks of the respective applications, the trees were showing obvious signs of distress including browning leaves and curling growth tips. A survey in mid-september 2001 found greater than a 98% kill on the sprayed stems. No new stems were observed which might indicate root resprouting. Additional untreated trees will be treated before the tree goes dormant for the year. A revisit will be made to the treatment area in Spring 2002 to inspect for new seedlings from the seed bank or resprouting stems. An important consideration is whether site conditions permit leaving the standing dead trees which they did in this case. Basal bark treatment thus appears to be a more effective treatment of killing Tree of Heaven than other techniques such as a cut stump or girdling method.

Hunter, J. 2000. *Ailanthus altissima* (Miller) Swindle. In: Board, C. et al. Invasive Plants of California's Wildlands. U.C. Press.

Kitz, J. 1997. A Working Paper on *Ailanthus*. CalEPPC News Summer 1997, Vol. 5 No. 3.