

Residues of Forestry Herbicides in Plants of Interest to California Tribes

Environmental Monitoring and Pest Management Branch
Department of Pesticide Regulation
830 K Street
Sacramento, CA 95814

In recent years, California tribal people have voiced concerns about exposure to forestry herbicides used in National Forests. They are concerned because they gather food, medicinal, ceremonial and basketry plant materials in or near these forests. As a result, the U.S. Forest Service asked the Department of Pesticide Regulation (DPR) to assess the potential exposure of plant gatherers and users to forestry herbicides. We (DPR), in consultation with the local California Indians at Stanislaus, Sierra, and Eldorado National Forests, and the U.S. Forest Service developed monitoring objectives and plan. The plan consists of two-phases. Phase one developed sampling and analytical methods. Phase two, currently in progress, is designed to: 1) find the length of time pesticides last in selected plants, and 2) determine how far, if at all, herbicides move away from the treatment areas.

Four herbicide and application method combinations have been selected for monitoring: Pronone® 10G (hexazinone) by air, Velpar® L (hexazinone) by ground, Accord® (glyphosate) by ground, and Garlon® 4 (triclopyr) by ground. Four plants were selected to determine how long the herbicides last after they are sprayed: bracken fern roots, buckbrush shoots, golden fleece foliage, and manzanita berries. We collect samples every four to eight weeks for 36 weeks, or until herbicide residue is no longer detected. To test how far herbicides move, we collect samples at four distances ranging from 5 to 100 feet from the edge of the treated area. First samples were collected within one to three days

after the treatment. Sampling will likely continue until March of 1999, with the possibility of further sampling if residues are detected in samples collected on the last scheduled date.



Manzanita berries.

Currently, DPR is targeting 64 treatment sites for monitoring to determine how long residues last in plants in three National Forests: Eldorado, Stanislaus, and Sierra. We have begun monitoring in 41 of these sites. Results from 209 samples taken so far in 1997-1998 show a general trend of declining residue levels through time (see figures).

To test how far herbicides move off-site, we have begun monitoring at 16 of the 24 sites. We have selected three plant species for testing based on availability near treatment areas: bracken fern, buckbrush, and deer brush. Results from 147 samples collected in so far 1997-1998 show herbicides in six samples at four locations: two at 5-15 feet, and one each at 20-40 feet, 50-70 feet, and 80-100 feet. The

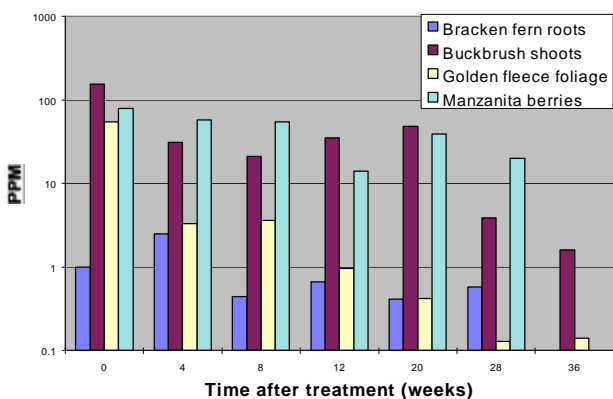
causes for the detections for the further sites may include herbicide left on plants from previous years, sample contamination, or off-site movement. We have modified our sampling procedures to reduce the chance of sample contamination.

We also took redbud shoot and acorn samples in hexazinone treated areas. These plant materials were not available in other treatment areas. No herbicide residues were found.

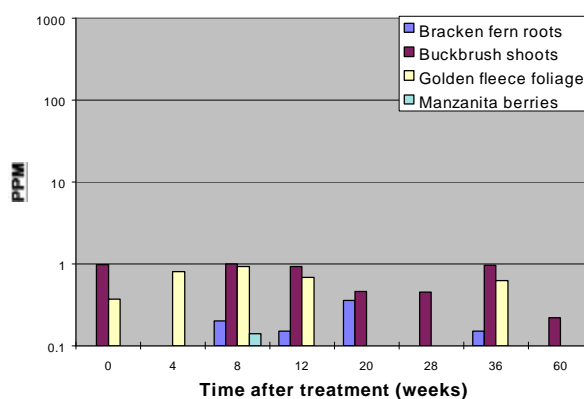


Collecting deerbrush sam ple.

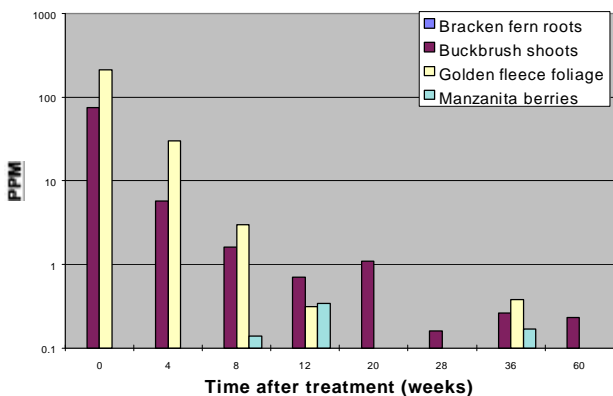
Glyphosate (Accord®) Dissipation Results



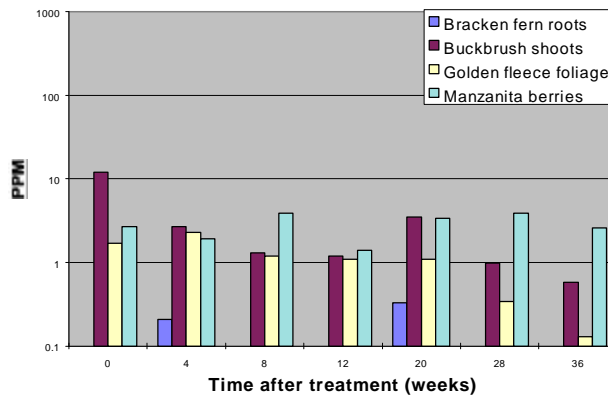
Hexazinone (Pronone®) Dissipation Results



Hexazinone (Velpar®) Dissipation Results



Triclopyr (Garlon®) Dissipation Results



This newsletter is prepared by Johanna Walters and Kean S. Goh. Project Directors are Randy Segawa and Clarice Ando. For detailed report or further information please call Madeline Brattesani at (916) 324-4082 or email mbrattesani@cdpr.ca.gov. This project is funded by USDA Forest Service Pacific Southwest Region Grant No. G-5-98-20-025. The Department of Pesticide Regulation is an equal opportunity service provider. Mention of commercial products does not imply endorsement by the Department of Pesticide Regulation.