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Weed Science

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Program Summary: My weed science program provides management solutions for problem weeds in western Washington. Work has centered on managing a changing weed spectrum through an integrated weed management strategy, including chemical, cultural, mechanical, and biological methods.

Program and Economic Impacts: Research has been conducted in a variety of crops and western Washington noxious weeds, a total of 397 trials including 9,336 individual treatments since 1997. Results from these trials has contributed toward new and continuing herbicide labels (total of 39 registrations for 31 different products in 23 different crops), as well as developing organic weed control recommendations for use in vegetables and fruit, as well as in landscapes and natural areas.

Critical Issues Addressed relative to Needs of the Community and Clientele: Probably the most tenacious problem relating to weed management faced by western Washington growers is the limited number of herbicides available for use. Herbicide manufacturers are often unable to justify the cost of labeling a herbicide for minor crop use based on expected sales revenue, and, because of the high dollar value of many of these crops, they often view the risk of crop injury claims as being unacceptably high. An on-going program is therefore essential if regional minor crops are to remain economically viable.

Funding Source(s): Annual funding is normally received from the Washington State Commissions for Blueberries, Ornamental Bulbs, Red Raspberries, Strawberries, and Pesticide Registration, as well as from the Northwestern Ag Research Foundation. Funding has also been received from the National Park Service, Western Region IR-4, the WA State Legislature, the WA State Departments of Ecology and Agriculture, USDA CSREES, and WSU (teams funded through the Emerging Research Issues and Extension Issue Focused programs). Gift grants have also been received from several herbicide manufacturers.

Research Focus Areas: From 1997 to 2001, my research focus was weed control in green pea. I conducted studies to document the effects of weed interference and timing of weed removal for green peas in western Washington, and to determine the effects of new herbicides and herbicide combinations on weed control and crop safety as well as noting their impact on rotational crops. Since 2001, my research focus has been managing weeds in riparian areas. I have tested the effects of management of reed canarygrass on re-establishment of native riparian vegetation, as well as control studies for Bohemian and Giant knotweed, butterfly bush, indigobush, yellow flag iris, wild chervil, meadow knapweed, poison hemlock, herb robert, and flowering rush—all of which are invasive noxious weeds of riparian areas in many parts of Washington and the Pacific Northwest.

Outreach/Extension Activities: I have given 292 presentations to an estimated 20,319 people on a variety of weed, agricultural, and horticultural topics since 1997. I am also a co-author on the annually published PNW Weed Management Handbook and EB 1491 (Pest Management Guide for Commercial Small Fruits).

Educational Contributions: Guest lecturer, Crop Sci 305 (1999-2005) and Crop Sci 101 (2001-03).

Future Goals/Program Direction: Continue to provide quality and relevant program work involving weed control in minor crops and riparian areas, to be actively involved in the WSU pesticide recertification trainings, and give presentations at regional grower meetings and local WSU Extension programs (including master gardeners)