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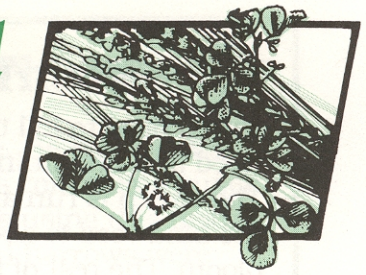

Non-Chemical Weed Control Methods Prove Themselves

— By David Granatstein, sustainable agriculture coordinator at Washington State University's Center for Sustaining Agriculture in Wenatchee —

Farmers and researchers both are shifting their weed control emphasis from heavy, often exclusive, reliance on herbicides to other strategies that can complement or even replace chemical control. A few ideas that have been gleaned from recent publications are presented below.

Fred Kirschenmann, a grower in North Dakota, describes the success he has had in controlling field bindweed in the January 1992 issue of the *Northern Plains Sustainable Agriculture Society* newsletter. He based his approach on suggestions in a 1977 USDA bulletin on controlling Canada thistle that recommends tillage timed when most of the plant's energy is stored in the plant rather than in the root. Farmers have had success with this by tilling at the bud stage and then tilling again every 20 days throughout the growing season. But this intensive tillage has only achieved about 90 percent control of field bindweed, which is not satisfactory.

Kirschenmann has devised a rotation and tillage combination that provides effective bindweed control while maintaining a "modest but adequate" income during the weed eradication period. In year one, he interseeds sweet clover into a crop such as oats, which are harvested for grain. After harvest, the clover grows on through the season. In year two, the sweet clover is tilled into the top three or four inches of soil at first bloom, with a disc. This kills a first round of bindweed and Canada thistle. About three weeks later, he tills again with a

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Canadians Experiment With Post-Emergence Harrowing: Page 3.

A Promising New Method of Retaining Soil Moisture: Page 7.

Natural Enemies Attack Russian Wheat Aphids: Page 7.

Top-Quality Grain, Good Yields Follow Green Manure Crops

— By Mal Westcott, superintendent at the Western Agricultural Research Center in Corvallis, Mont., in cooperation with Leon Welty of the Northwestern Agricultural Research Center at Creston, Mont. —

A 1990 Northwest Area Foundation sustainable agriculture research grant is yielding excellent results in western Montana, where third- and fourth-year field trials have confirmed that green manure crops effectively fix nitrogen adequate for subsequent small-grain crops.

Yields following legumes were sometimes greater than those achieved with the optimum level of nitrogen fertilization, and grain quality was higher.

The objective of the NWAF Sustainable Agriculture Initiative is to determine nutrient balances and cycling in production systems deemed to represent gradations in sustainability.

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