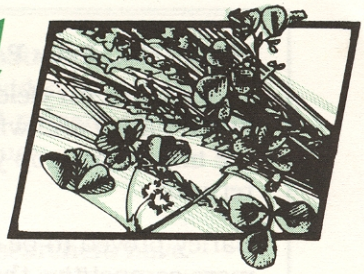
SUSTAINABLE FARMING Quarterly



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IT'S TIME TO STOP GROWING YOUR WILD OATS !

BY DAVID GRANATSTEIN, COORDINATOR OF THE SIX-STATE DRYLANDCEREAL/LEGUME PROJECT.

Wild oat (*Avena fatua*) is a problem weed for small grain farmers throughout the Northwest dryland region. Wild oat can cause barley yield reductions from 10-40 percent. In Idaho alone, cereal producers spend $20 million to $30 million annually to control wild oat on more than 1.5 million acres of cropland.

Reduced herbicide use is being encouraged by regulations, weed resistance, and increased cost. Thus, growers need a wider array of weed control tools for the future. University of Idaho weed scientist Donn Thill and his associates have been examining several aspects of wild oat control in spring barley in order to develop a bio-economic model that can help growers maximize weed control with minimal cost and environmental impact.

A bio-economic model is used on a computer to determine the outcome (yield, crop quality, net income) from various management scenarios. Crop and weed data from a specific field are entered, along with assumptions about crop prices and weed control costs. The model helps determine which actions will lead to the most desirable outcome. But such a model must be preceded by a substantial research effort to determine the biological relationships occurring between the crop and the weed.

Thill's group has examined several management strategies that can be used in integrated control of wild oat. These include barley row spacing and seeding rate, fertilizer placement, and herbicide choice and rate. The researchers measured the growth and development of both barley and wild oat under these different management treatments. They then determined the amount of competition within a species (e.g., the effect of barley

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FARM SOILS INSTEAD OF FIELDS

BY DAVID GRANATSTEIN, AND BAIRD MILLER, WASHINGTON STATE UNIVERSITY EXTENSION DRYLAND AGRONOMIST.

Looking out over a vast field of wheat in the Northwest, one can easily marvel at the uniform appearance that we credit to contemporary farming techniques. But in reality, most dryland grain fields contain a large amount of variability within their boundaries.

Growers typically manage for the average condition in the field, perhaps over-fertilizing some parts and under-fertilizing others. In either case, more precise matching of farm management to the variable conditions in a field could improve profits and reduce potential environmental problems. With the advent of powerful, compact, and inexpensive computers, many new tools are being developed to allow farmers to more precisely manage variable cropland.

Historically, land managers have recognized the specific management needs of different parts of the landscape. Steep hillsides were once left primarily for hay and pasture when most farms had livestock. The Soil Conservation Service developed the land capability classification system to encourage appropriate use of variable lands. Verle Kaiser, an eminent conservationist in eastern Washington during the 1950s and 1960s, promoted the use of an alfalfa-barley-pea rotation on the erosive upper slopes in the Palouse, and a

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