Reduced Herbicide Rates Control Weeds in Grain

The Situation
In an effort to help farmers reduce production cost and lower the impact of pesticides in the environment, research by University of Idaho weed scientists has shown that weeds in small-grain cereals can be controlled with below-label herbicide rates. Wild oat and broadleaf weed control studies have been conducted the past several years using reduced herbicide rates in irrigated barley and wheat.

The Result
Results of this research has shown that with accurate rates and proper timing of application, many weeds can be controlled with the most effective herbicides at rates as low as one-sixth to one-third of the normal use rate. In wild oat populations greater than about 40 plants per square foot, the full rate or nearly the full rate was more consistent than reduced rates, but in low to moderate infestation levels below 40 plants per square foot, the reduced herbicide rates performed very well. Also, the number of weed seed returning to the soil from surviving weeds was equal between the reduced rates and the full rate.

Grain yields in most of the reduced rate treatments were equal to the full rates. In addition, quality of malting barley was not affected by reduced herbicide rates.

These experiments were conducted in collaboration with UI extension educators in six counties across southern Idaho. The next step in this project is to conduct on-farm large plot tests so that farmers can see for themselves that weeds can be controlled with reduced herbicide rates. One important point for the grower to keep in mind before trying this concept is that when using a herbicide below the manufacturer’s labeled rate, they assume the liability for performance. Thus, it will be important for growers to apply reduced rates accurately and timely.

The Future
It is still too early to determine the full impact of this research. However, grower response at field days and extension meetings has been very favorable. Of course, some producers are a little skeptical of using reduced herbicide rates, but that is not all bad. It is best for a grower to try it on a portion of their crop than to adopt this concept for the entire farm the first year. Adoption of reduced herbicide rates for weed control in grain could lead to a savings of $7 to $13 per acre in chemical costs with grain yields equal to using full herbicide rates.

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