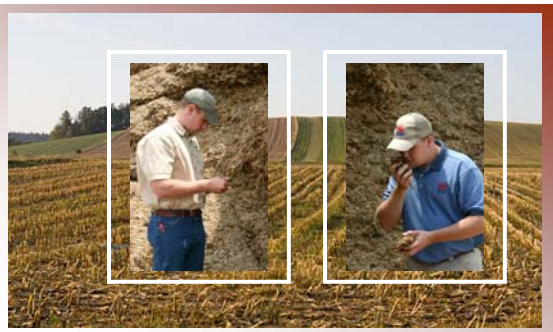


FORAGER



Agronomics with livestock in mind!



Weeds and Resistance ~

Weed resistance to herbicides is not a new phenomenon. However, for many of us, weed resistance is not taken seriously until a popular and successful herbicide everyone uses starts to fail. Then we take for granted that a new and even better replacement will be introduced and the problem will be taken care of. Tomorrow, that replacement may not be available!

Weed specialist Joe DiTomaso defines weed resistance to herbicides as, "The inherited ability of a plant to survive and reproduce following exposure to a dose of herbicide normally lethal to the wild type." In a plant, resistance may be naturally occurring or it may occur by mutation. To date, no evidence has been presented to demonstrate herbicide-induced mutation. Resistance is most likely caused by selection with the herbicide providing the selection pressure. Using this approach, we can conclude that susceptible plants are killed while herbicide-resistant plants survive to reproduce without competition from the susceptible plants. In this scenario, the appearance of herbicide resistance in a field is most likely an example of weed evolution, influenced by the amount of genetic variation in the weed.

The many genetic variations that naturally occur have given most weed species help in surviving under a variety of environmental and induced conditions. When those species are placed under pressure (herbicide pressure in this case), those that survive are weeds that develop resistance. In this example, it could be resistance to a popular herbicide(s) that everyone is using today.

Since we know that weeds can have many genetic variations, it is possible that weed resistance could be absolute, if a weed species is put under high herbicide pressure. That's why planned and proper management of herbicides is essential. Here are three very important strategies to help prevent herbicide resistance:

- ❑ Rotate herbicides yearly, not by brand, but by type and mode of action
- ❑ Use the proper herbicide rate and application, regardless of which herbicide is chosen
- ❑ Vary the time when herbicide(s) is applied

Remember, cutting back on the herbicide rate is asking for trouble! This vastly increases the chance for weed escapes, poorer herbicide coverage or survival by weeds that need a higher herbicide rate to be killed. Time of application is also important in relation to plant size, humidity, soil and air temperature and crop canopy.

Herbicide rotation is the most important contributing factor to preventing or delaying resistance in weeds. Cost and ease of use often are the main reasons the same herbicide is used year after year, but poor rotation practices will most likely limit or end the effective use of a good herbicide. A good (and recent example is the once popular ALS herbicides, which aided the production of weed resistance to herbicides. When ALS herbicides were used extensively without rotating applications with other herbicides having different modes of action, ALS weed resistance quickly developed.

Could this happen again to the popular glyphosate herbicide programs we currently use? In the article "*Weeds to Watch for in Roundup-Ready Soybeans*," Dr. S. Knezevic (University of Nebraska), lists weed species in Nebraska that he feels are shifting toward resistance. He bases this list on calls made to/from extension offices and on questions from producers, crop consultants and agronomists. The shifting species he lists that appear to be developing resistant strains include: marehail, morning glory (common and ivy leaf), wild buckwheat, Pennsylvania smartweed, Venice mallow, yellow sweetclover, field bindweed, waterhemp, kochia, Russian thistle, primrose species and volunteer Roundup-Ready corn. Dr. Knezevic writes that if these species are not controlled, their seeds could be a major problem in the future, driving both costs and frustrations of good weed control much higher.

Remember, a management practice as simple as yearly herbicide rotation could help prolong the effectiveness, life cycle and cost benefits of today's popular and widely used herbicides. Check out what is available and carefully compare the type and mode of action for each. Then plan a management strategy that maps out good rotation practices for herbicide application, and time of year variables. Fall is often an ideal time to apply many herbicides for more effective results. Get the answers and then work toward improved weed control that will help to yield improved crop productivity in the future.

(edited from an article by Don Moeller, agronomist)

Quality Nutrition Depends On Good Agronomic Decisions!

**INVEST IN QUALITY FORAGES & FEEDS for 2007
INVEST IN RESULTS! HYBRIDS THAT MATTER**

~ RENAISSANCE NUTRITION ~

For Agronomy Support Call

1.800.346.3649