INSIDE GRUNDY COUNTY
By Bill Arndorfer
Butler-Grundy County Extension Educator
March 30, 2011

Weed Control Timing Critical to Crop Yield Potential

Research has shown the importance of controlling weeds in the early growth stages of corn. Terry Basol, Iowa State University Extension Field Agronomist, provided the following summary of research that was conducted in north central Iowa. Controlling weeds in Iowa's corn and soybean crops is an important goal for growers because of the economic impact per acre it can have. Even though Roundup Ready corn and soybeans make chemical management decisions easier, the timing of weed control strategies is still critical to protecting a crop's maximum yield potential.

In 2008, Iowa State University conducted a field study at the Northern Iowa Research and Demonstration Farm in Kanawha. Researchers wanted to find out what the yield impact per acre of corn would be if weeds were allowed to grow and compete with the emerging corn before being sprayed with glyphosate, commonly known as Roundup, at the V2, V4, and V5 growth stages. The yields were compared to a weed free check in which the crop was sprayed with a pre-emerge herbicide (Harness), and then a post-emerge application of glyphosate. This is a common weed management strategy used on many of Iowa's acres. However, the site used had heavy weed pressure, which may not be representative of all acres across Iowa, but worked very well for the purpose of research and example.

According to the study, when compared against the check, weed competition in corn caused a loss of 0.5 bushel per day, from emergence to the V2 stage if weeds weren't controlled. If the weeds were allowed to continue to grow through the V2 to the V4 stage, yield loss more than doubled to 1.1 bushel per day of lost corn yield. The greatest yield loss was incurred when the weeds were allowed to continue to grow through the V4 to the V5 stage. This took seven days to complete and yield impact was 17.2 bushels per day. This severe reduction is due to the stage of physiologic development the corn plant was in. Around the V5 stage of growth, the corn plant is determining the girth of the ear, or the number of rows of kernels the ear is going to produce for the season.

The data generated from this study supports the reasons why it's so critical to get early season weed control and keep weeds from competing against the emerging corn crop. A rain event or other situations that prevent timely weed control can seriously cause a major economic impact. Use of a pre-emerge herbicide reduces that weed pressure, which in turn allows the corn crop to grow more efficiently to compete and use the moisture, nutrients, and sunshine that it needs to maximize the return on investment to the Iowa corn grower.

For more information on this study, visit: http://www.weeds.iastate.edu/mgmt/2009/toolong.pdf or contact the Grundy County office of Iowa State University Extension at 319-824-6979.