

**11/6/06 University of Missouri Extension Agronomy Update**  
**Glyphosate-resistant marestail, fall nitrogen applications, & new fall herbicide option for corn**  
**Julie Abendroth, Regional Agronomist: 816/776-6961**

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Recently, researchers at the University of Nebraska confirmed the first case of glyphosate-resistant marestail in Nebraska – this represents the first confirmed case of glyphosate-resistance in Nebraska. Marestail is prevalent throughout Nebraska and Missouri production fields. Seeds of the 3 suspected marestail populations, located in eastern Nebraska, were collected in fall 2005 and greenhouse tests conducted throughout 2006 confirmed the suspicion. 3-6 times the normal glyphosate rate was required to achieve control of these populations.

With soybean harvest completed or nearing completion in most fields throughout central Missouri, many producers' attention is directed towards fall nitrogen applications of anhydrous ammonia. When applied to frozen or nearly frozen soils, the nitrogen remains in the ammonium form, which is not prone to leaching. Applying nitrogen to warm soils will allow for the nitrogen to convert to the nitrate form, which is highly mobile and prone to leaching. State fertility specialist, John Lory, notes that once nitrogen converts to the nitrate form, the nitrogen can be lost from the soil if we have saturated soils in winter or spring before corn has a chance to use the fertilizer.

For producers north of I-70, the potential for fall nitrogen loss can be minimized if anhydrous is applied after the average daily soil temperature at six inches is below 50 degrees. However, University of Missouri researchers are currently investigating whether anhydrous applications should be delayed until soil temperatures are actually below 40 degrees. There is concern that Missouri soils do not cool quickly enough to use the 50 degree rule of thumb and should rather, potentially use a 40 degree rule of thumb. Early November is too early for northern Missouri if there is concern about over-winter nitrogen losses, as the average soil temperature does not remain consistently below 50 degrees until mid-November and below 40 degrees until early December. The six inch soil temperature under soybean residue for November 2<sup>nd</sup> at Brunswick was 46 degrees, at St. Joseph was 44 degrees, and at Corning 42 degrees.

Lastly, corn producers should be aware of a new herbicide option for the 2007 crop. 'Autumn' is a new herbicide from Bayer that is promoted for fall application, prior to corn planting. A 30 day preplant interval is required for Autumn, which contains the active ingredient iodosulfuron. Research conducted by MU weed specialist Kevin Bradley demonstrated good control of henbit and common chickweed with fall applications of Autumn or Autumn + 2,4-D. Similar levels of henbit and chickweed control were also achieved with Basis + 2,4-D and Princep + 2,4-D. Other universities have noted good control of field pennycress, shepherd's purse, purple deadnettle, marestail, and dandelion with a fall application of Autumn + 2,4-D.