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QUALITY ANALYSES FOR INFORMED DECISIONS



Atrazine Carryover: Switching from Corn to Soybeans

Heavy rainfall in the Midwest has caused some growers with flooded fields planted to corn to replant to soybeans. If atrazine was used for weed control in the corn, there is substantial risk of soybean injury. Following are guidelines to use when collecting soil samples for herbicide testing and information for use in interpreting laboratory results.

Unless the herbicide was deeply incorporated into the soil, atrazine does not leach any deeper than 3-4 inches into the soil profile for medium and heavy textured soils. Sandy soils can have penetration of the chemical down to 6 inches. Atrazine is tightly held to soil particles and will concentrate in areas where soil collects through erosion. With this in mind, it is suggested to collect soil samples which would represent the worse case scenario, sampling to a depth where the seedling roots would absorb the highest concentration of the herbicide. Normally this would be to a depth of 3-4 inches.

When interpreting laboratory results several factors should be considered. If the soil texture is medium to heavy, the level of atrazine will be highest in that 3-4 inch depth and then decrease drastically below that. This means that if the concentration is below 0.10 ppm in the soil at that depth, there is a medium risk that seedling injury will occur. If growing conditions are optimal, encouraging the roots to grow quickly to the lower depth, the chance of continued injury is low. In a lighter textured soil, atrazine can leach deeper so a reading of 0.10 ppm in the 3-4 inch depth has a higher risk of continued injury even as the roots grow deeper into the profile.

Another factor to consider is the soil pH. There is a higher risk of injury in high pH soils (>7.0) as the herbicide is more active in those soils. Atrazine tends to carry over longer in high pH soils.

There are varieties of soybeans that have some atrazine tolerance bred into their genetics. These varieties can tolerate up to 0.25 ppm of the herbicide in the soil. Consult with your seed dealer on this matter.

Finally, some fields that have been flooded probably have topsoil erosion into low areas. This will concentrate any atrazine that is still in the soil to those low areas.

Soil samples should be collected from at least 12 areas and composited into one well mixed sample. The laboratory will need one cup of soil for testing. Samples do not have to be refrigerated during shipment but should arrive at the lab within two days of collection. Normal turnaround time for the analysis is five business days. Please contact the lab if you have further questions.