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Nitrogen Loss Potential in Water-Saturated Soils & Armyworm ID and Management
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Many corn producers throughout west central and central Missouri have experienced water-saturated or flooded soils and question the potential amount of nitrogen that may be lost. The potential for nitrogen loss is primarily related to soil temperature and the length of time the field was waterlogged. Soil temperatures below 60 °F have a significantly lower risk of nitrogen-loss potential. As of May 16th, daily soil temperatures under soybean residue at the 2" depth ranged from a low of 58 °F to a high of 70 °F, at St. Joseph.

Loss of nitrate-nitrogen is minimal with soil temperatures of 55-60 °F, but severe at soil temperatures of 75-80 °F. For example, data from the University of Nebraska has shown that for soils saturated for 5 days at soil temperatures of 55-60 °F, 10% of the nitrate-nitrogen is lost. However, for soils saturated for 5 days at soil temperatures of 75-80 °F, 75% of the nitrate-nitrogen is lost via denitrification. Since the daily soil temperature is currently averaging approximately 65 °F, the threat of severe nitrate-nitrogen loss is moderately high, namely for fields which are still waterlogged.

A yield response to additional nitrogen now is highly likely for fields in which the corn survived, but was underwater, notes Peter Scharf, MU Extension Fertility Specialist. A general target rate for additional N might be 40-60 lbs N per acre. Fields likely to require more than an additional 40-60 lbs of N/acre include fields with sandy soils, well-drained soils, fall applied nitrogen, fields which were submerged for longer periods, or fields in which the nitrogen source was not ammonia.

With regards to pest management, producers with grass pastures, wheat, or corn are encouraged to evaluate stands for armyworm damage. Armyworm pressure is extremely high in many fields across west central Missouri – including fescue seed production fields, grass pastures, wheat fields, and seedling field corn. True armyworm larvae are nocturnal feeders, meaning they feed during the nighttime hours, and will only begin feeding during the daylight hours as they grow in size. Producers are therefore encouraged to scout fields for armyworm before or at sunrise. Armyworm will feed from the soil surface, upward.

When identifying armyworm larvae, look for three dark lines running the length of the insect. Some larvae will have a lighter tan-orange line present on each side of the body as well, notes Wayne Bailey, MU Extension Entomologist. Treatment for true armyworm is recommended once an average of 4 or more larvae are present per square foot. With regards to wheat, once 2-3% of the wheat heads are cut from the seed stems, treatment is recommended. Corn producers should remain alert, as damage to corn seedlings can be severe because corn is often attacked by later instars of this pest. Therefore, the damage potential from armyworm to corn can be high. Once 25% of corn seedlings exhibit leaf damage and armyworm larvae are present, an insecticide application should be made. Numerous insecticides are labeled for foliar broadcast application to corn, however few options are available for grass pastures or fescue seed production. Mustang Max is labeled for grass pastures and should be applied at a minimum rate of 3 oz/ac. Insecticides such as Warrior, Baythroid, Capture, Pounce, and Sevin XLR are labeled for true armyworm control in corn.