



Milne-Dinsdale Seed, LLC

“There are no practice fields in farming”.



 **GoldenHarvest[®]**
Corn
 **Soybeans**



WEATHER IMPACTS ON CROP PRODUCTION.

An unusually cool, and in some places, wet spring has us thinking “what’s next for crop management”? We’ll try to highlight those areas and give potential strategies to consider for the coming months.

CROP STRESS- Cool, wet soils can cause unwanted stress on plants that slow growth and metabolism of plants. The stress can manifest itself in several ways;

- **REDUCED ROOT AND SHOOT GROWTH-** Symptoms can have serious impact on overall crop productivity and yield potential. Long periods of stress can reduce top-end yield potential with reduction of growth.
- **ROOT AND CROWN DISEASES-** Soil borne diseases from fungi and bacterial tend to be more prevalent under these conditions. Seeds may rot



before germination, or may germinate and seedlings become infected & blighted. Other factors that delay germination and emergence

(compaction, crusting or planting too deep) can result in more damping off.

- **REDUCED HERBICIDE ACTIVITY OR HERBICIDE CROP INJURY-** Herbicides are most effective when temperatures are between 70 and 85°F, when the crop and weeds are actively growing. When temperatures are cool (below

<i>Cool, wet soil conditions make plants susceptible to root and seedling diseases as well as insect injury.</i>	60°F daytime) plant metabolism slows down
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and so does herbicide degradation by the crop. In some cases the result can be crop injury, poor weed control or both.

- **PEST SUSCEPTIBILITY-** Slowed growth makes the crop more susceptible to insect pests such as white grubs, wireworms, cutworms and armyworms. No-till fields and fields that had heavy infestations of mustards and other biennial or winter annual weeds are more susceptible to pest pressure from insects such as black cutworm.

<i>Insects like wireworm, pictured here, can cause significant stand loss when active in cool, wet soils.</i>	
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PEST POTENTIAL



WEED CONTROL- We know that there is a critical weed-free period for both corn and soybeans to maximize yield potential. We know that weeds compete for light, nutrients, space and water (seemingly not an issue this year), but what is really at stake? Purdue University did weed management studies in 1999 and 2000 that evaluated nitrogen applications on corn and weed (annual grasses) growth and N content and corn yield. The studies found the following;

- By the time grass weeds were 12 inches tall, they had 50 to 63 lbs of Nitrogen/Ac and 16 to 32 lbs N/Ac in 1999 and 2000, respectively.
- Yields were lower where grass interference reached at least 9 inches or greater in height.
- Side-dress N had a positive effect on yield recovery in 2000 where adequate late season rains occurred.
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- In summary, the research concluded that grasses emerging at the same time as corn should be controlled before reaching 6 inches in height to avoid crop losses and N accumulation.

In summary, the best weed in your crop is a dead weed. The longer the weed is allowed to compete for light, water, space and nutrients, the more impact it can have on yields.

WEEDS AS INSECT OR DISEASE HOSTS: Some weeds are hosts for insects and diseases creating a more complex interaction. As examples, henbit is a well-known host of Soybean Cyst Nematode and Cutworms, for example, have a wide host range that include many common weeds (mustards, red root pigweed, lambsquarters, others). A vigilant eye in the field for insect pests is a great investment for this year's corn crop.

NITROGEN LOSS: Saturated soils tend to have greater Nitrogen loss, however, cool temperatures have likely slowed the conversion of ammonium fertilizers to nitrate, therefore could be slowing the N loss ratio. As temperatures increase, the rate of loss increases and will likely create a management opportunity. Predicting the exact amount of N loss is all but impossible, but can be a guidance tool for supplemental N applications. Research from the University of Nebraska estimated denitrification loss of nitrate when soil temps are 55 to 60 degrees F at 10% when soil is saturated for five days and 25% when saturated for 10 days (2 to 2.5% per day). Loss increases with warmer soils. University of Illinois research conducted in late May and June with soil temperatures greater than 65 degrees on silt loam and clay loam soils indicated losses around 4-5% per day with saturated soils. An example could be: **If 95% of a 120 lb N application is converted to nitrate, and soils were saturated for 10 days when warm, the N loss estimate would be (120 lbs N/Ac x 95% nitrate/100) x (4% per day/100) x (10 days) = 45 lbs N per acre.**



Want to track potential Nitrogen loss in your area? Visit MU Nitrogen Watch 2015! http://plantsci.missouri.edu/nutrientmanagement/nitrogen/Nitrogen_watch_2015/nitrogen_watch_2015.htm



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THIS SPRING, SEED TREATMENT WILL PLAY A VALUABLE ROLE. NK® brand soybeans treated with CruiserMaxx® Advanced insecticide/fungicide, Vibrance® or Clariva Complete and a rhizobia-based inoculant, such as TagTeam® LCO, provides pest-control, yield performance and profit potential. This combination:

- Provides protection against major fungal diseases & insects
- Promotes better emergence, faster speed-to-canopy, increased nutrient uptake, improved vigor, increased nodulation, and higher yield potential.
- Produces healthier roots that can stand up to environmental stresses and ensures fast plant growth



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