

Newton County Ag Scene

July/August, 2015

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Upcoming Calendar Dates

July 21-Crops Field Day near Wanatah
by Agri-Management Solutions

August 19-Pesticide Clean Sweep at
Elkhart County Fairgrounds

September 2-ACRE Field Day-
Beck Center



August 19-Pinney Purdue Field Day,
Pinney Purdue Ag Center, Wanatah

August 27- Newton County Pond
Management Workshop

Save the Date: Farm Succession
Planning-March 1 & 2, 2017, Jasper
County Fairgrounds

Effects of Ponding on Young Corn Plants

Modified by Andrew Martin from Bob Nielsen, Purdue University

Factors that increase or decrease the risks of severe damage or death to flooded soils.

- Plants that are completely submerged are at higher risk than those that are partially submerged.
 - Plants that are only partially submerged may continue to photosynthesize, albeit at limited rates.
- The longer an area remains ponded, the higher the risk of plant death.
 - Most agronomists believe that young corn can survive up to about 4 days of outright ponding if temperatures are relatively cool (mid-60's°F or cooler); fewer days if temperatures are warm (mid-70's°F or warmer).
 - Soil oxygen is depleted within about 48 hours of soil saturation. Without oxygen, the plants cannot perform critical life sustaining functions; e.g. nutrient and water uptake is impaired and root growth is inhibited (Wiebold, 2013).
- Even if surface water subsides quickly, the likelihood of dense surface crusts forming as the soil dries increases the risk of emergence failure for recently planted crops.
 - Be prepared with a rotary hoe to break up the crust and aid emergence.
- The greater the deposition of mud or old crop residues on plants as the water subsides, the greater the stress on the plants due to reduced photosynthesis.
- Mud and crud that cakes the leaves and stalks encourage subsequent development of fungal and bacterial diseases in damaged plant tissue. In particular, bacterial ear rot can develop when flood waters rise up to or above the developing ears of corn plants (Nielsen, 2003).
- Corn younger than about V6 (six fully exposed leaf collars) is more susceptible to ponding damage than is corn older than V6.
 - Partly because young plants are more easily submerged than older taller plants and partly because the corn plant's growing point remains below ground until about V6.



- Extended periods of saturated soils AFTER the surface water subsides will take their toll on the overall vigor of the crop.
 - Some root death will occur and new root growth will be stunted until the soil dries to acceptable moisture contents. As a result, plants may be subject to greater injury during a subsequently dry summer due to their restricted root systems.
 - Nutrients like nitrogen are rapidly remobilized from lower leaves to upper, newer leaves; resulting in a rapid development of orange or yellow lower leaves.
 - Because root function in saturated soils deteriorates, less photosynthate is utilized by the root system and more accumulates in the upper plant parts. The higher concentration of photosynthate in the stems and leaves often results in dramatic purpling of those above-ground plant parts (Nielsen, 2012).
 - Damage to the root system today will predispose the crop to the development of root and stalk rots later by virtue of the photosynthetic stress imposed by the limited root system during the important grain filling period following pollination. Monitor affected fields later in August and early September for the possible development of stalk rots and modify harvest-timing strategies accordingly.
 - Direct stress of saturated soils on a corn crop, flooding and ponding can cause significant losses of soil nitrogen due to denitrification and leaching of nitrate N.
 - Significant loss of soil N will cause nitrogen deficiencies and possible additional yield loss.
 - Lengthy periods of wet soil conditions favor the development of seedling blight diseases in young corn seedlings, especially those caused by Pythium fungi (Sweets, 2014).
 - Certain diseases, such as common smut and crazy top, may also become greater risks due to flooding and cool temperatures (Pataky and Snetselaar, 2006; Jackson-Ziems, 2014, APS, 2015).
 - The fungus that causes crazy top depends on saturated soil conditions to infect corn seedlings.
 - The common smut fungal organism is ubiquitous in soils and can infect young corn plants through tissue damaged by floodwaters. There is limited hybrid resistance to either of these two diseases and predicting damage is difficult until later in the growing season.
 - The yield effect of “green snap” damage depends on the percentage of field affected and whether the stalk breakage occurs above or below the ear, but is usually serious regardless.
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Purdue Top Farmer Conference

July 9-10, 2015 | Beck Agricultural Center, West Lafayette, Indiana



Take part in one of the most successful and longest-running management programs geared specifically for farmers — the Purdue Top Farmer Conference, now in its 48th

year. This year's program features faculty from Purdue's Center for Commercial Agriculture, the University of Illinois' farmdoc team and leading Ag Industry experts. Surrounded by farm management, farm policy, agricultural finance and marketing experts, and a group of your peers, the conference will stimulate your thinking about agriculture's future and how you can position your farm to be successful in the years ahead.

The 2015 Purdue Top Farmer Conference will feature two full days of educational sessions, plus opportunities for you to network with peers and conference speakers. Registration begins at 7:30 a.m. on Thursday, July 9, and the program adjourns by 4:00 p.m. on Friday, July 10. The program will be held at Purdue's Beck Agricultural Center, located in West Lafayette, Indiana.

News from the Farm Service Agency

- ❖ The Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs for 2014 and 2015 enrollment starts. The enrollment period begins June 17, 2015, and will end September 30, 2015.
- ❖ Information on FSA'S Rural Youth Loans can be found at <http://www.fsa.usda.gov>