Pioneer Agronomy Update 4-30-2024

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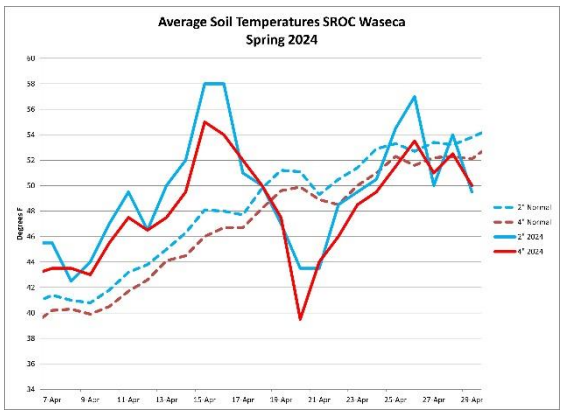
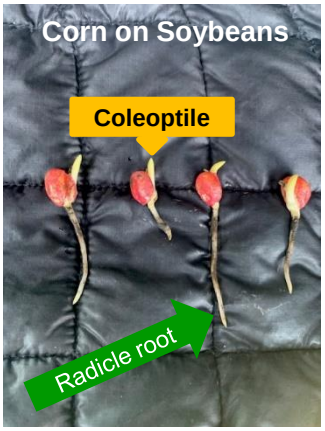
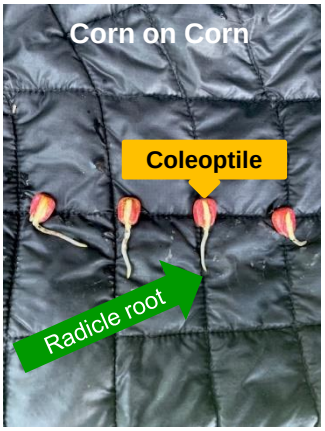
Area Update - *'Go Time!!!'…* It was 'Go Time' last week as many farmers resumed planting and began planting corn and soybeans taking advantage of a narrow planting window. For southern portions of my geography that began as early as Monday or Tuesday, and by Wednesday & Thursday I saw the most widespread planting of the spring. Seeds planted last week went into soils that were cooler than the previous planting window, yet still very adequate. Even after this past weekends' wet weather and dip in temperatures soil temperatures recorded at the 2" and 4" depths still averaged around 50 degrees on April 29 as illustrated in the graph below…

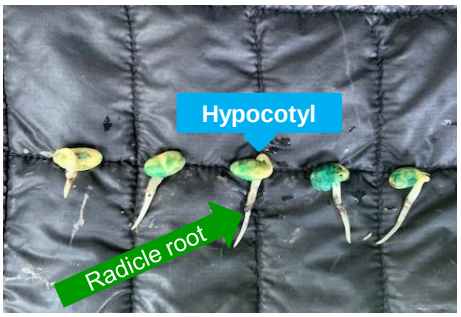


How is Early Planted Corn & Soybeans Looking? Last Thursday I has an opportunity to look at corn and soybeans than were planted in the first planting window April 13-15th. What I saw was very encouraging with normal growth of radicle roots in corn and soybeans, and normal development of the coleoptile (shoot) in corn. I saw NO INDICATIONS of chilling response in either crop. I expect to see emergence by late this week and early next week depending on soil types and drainage. We may even see emergence sooner in the *'rural heat island'* around building sites and windbreaks as is often the case. It was interesting to note that at one plot location planted corn on soybean vs corn on corn (with heavy residue) development was maybe ½ day due I believe to cooler soils temps as impacted by residue.

From the Field - Pictured below are corn seeds dug from a Pioneer Corn Product Knowledge Plot planted April 13th near Mankato (River Hills Ag).







Pictured left soybeans dug from a Pioneer Product Knowledge Plot planted April 15th near Mankato.

The Germination Process in Corn – For the germination process to begin the seed absorbs about 30 percent (soybeans it is 50%) **of its weight in water. Temperature does not affect** that process. But temperature DOES affect growth of both the radicle (first root) and coleoptile (shoot). When soil temperatures are below 50 F, seeds readily absorb water but do not initiate root or shoot growth.

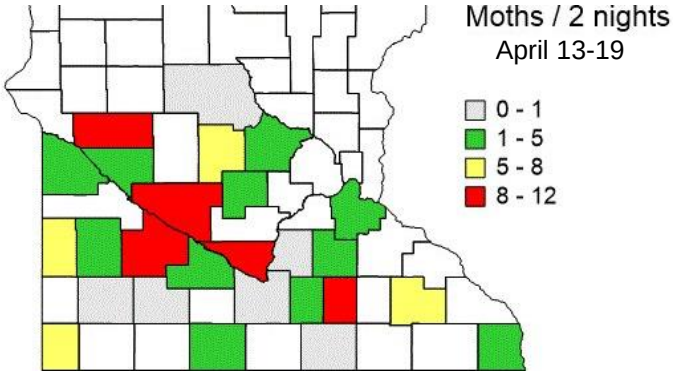
Visible Signs of Germination in Corn – As one walks fields to assess corn germination & emergence it is important to understand what 'Normal Growth' of a corn seedling is. As previously mentioned: in order for the germination process to begin a corn seed must imbibe 30% of its' weight in moisture.

Visible Signs of Germination and Emergence to look for

- **Once a corn seed has imbibed 30%** of its' weight in moisture the first thing is normal growth of the radicle root from the tip of the kernel (approximately 56 GDUs after planting)
- Next is **growth of the coleoptile** or 'shoot' (84 GDUs) coming from the germ side of the kernel pushing its way to the soil surface
- The **coleoptile a sheath of sorts** that protects that first rounded leaf or plumule until it reaches the soil surface.
- Lastly, appearing to grow from the **dent end of the kernel are the seminal roots**
- As a rule of thumb, **corn emergence occurs once 125 GDUs** have accumulated since planting.

(Thank you to 'retired' Pioneer Field Agronomist Marty Lovrien for sharing the graphic)

What to Watch For: Black Cutworms – Can you remember a windier spring than what we have experienced so far? I'm sure that I have but I can't remember one this windy in recent memory. One reason that observation may be significant is that strong southerly winds can bring a number of pests or diseases our way. For alfalfa producers potato leafhoppers, but for corn it is the black cutworm. Black cutworm moths are a migratory pest that blows up our way from the Gulf of Mexico and can easily arrive within 2 days depending on the winds. Bruce Potter of the Southwest Research & Outreach Center at Lamberton coordinates a 'Black Cutworm Trapping Network' to capture migrating black cutworm moths across Minnesota. Captures of 6-12 per 2 nights is considered 'High'.



What do these heavy flights mean to me? – Fields at greatest risk will be fields planted to Conventional or Sweet Corn fields that had not been tilled prior to the flights. Based on GDU projections cutting damage could occur sometime around May 20-24th. Look for more updates in the weeks ahead.

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Have an UNBELIEVABLE Week!!!