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**SEED TREATMENTS & CUSTOM TREATING**

We will have most all types of seed treatments available again this year. Upon request we can deliver these along with your seed order to your farm. We are also able to custom treat your beans with insecticide, fungicide, or inoculants again this year. We will also have again this year "ILeVO" seed treatment to treat for sudden death in soybeans.

The cost for "The Works" (insecticide, fungicide & inoculant) is a little less than 1 bushel of soybeans. This is an excellent time to give those products a try. Call us for pricing.



**YELLOW STUNTED CORN... MORE THAN ONE CAUSE**

Areas of light green to yellow, often stunted, corn plants are visible in many corn fields throughout the state at this point in mid-June. There is no single cause for such crappy™ looking corn and multiple causes may occur in the same field, which makes for challenging diagnoses. A few observations about some of the common causes of ugly stands of corn this year.

Frequent and, often, excessive rainfall is one of the more common underlying themes this year. Localized rainfall amounts have been even greater in some areas. Such excessive rainfall results in ponding or flooding of fields and lengthy periods of saturated soils after the water recedes or drains away. Root damage occurs rapidly in oxygen-depleted soils, especially with warm temperatures, resulting in plant death or stunting.

The consequences of excessive rainfall are accentuated in soils that are naturally poorly drained, especially if the fields are not well drained by artificial drainage tile or surface drains. Field to field variability for the adequacy of the artificial drainage often results in "black and white" differences in adjacent fields of corn that receive the same amount of excessive rainfall over a period of days or weeks. Even in fields with generally adequate artificial drainage, there will be small areas that are not well-drained and root health of young corn plants will suffer due to lengthy periods of saturated soil conditions. Some of the signs of such poorly drained areas include algae growth on the soil surface and damp-loving nutsedge plants.

The existence of compacted soil layers accentuates the consequences of excessive rainfall on poorly drained fields. Beginning way back last fall during harvest, opportunities for creating soil compaction have been abundant throughout the state from all sorts of field activities... harvest machinery (combines, grain carts), tillage equipment (fall and spring), fertilizer spreaders (fall and spring), manure spreaders (fall and spring), planters (sidewall com-

paction). Soil compaction further decreases natural soil drainage and lengthens the time period in which soils remain saturated (anaerobic) and detrimental to root health.

Even in the absence of excessive rainfall, soil compaction has negative effects on the initial stand establishment of a corn crop. Planter sidewall compaction restricts the seedlings' root development to the furrow itself for long periods of time. Soil compaction caused by tillage tools further limit the natural downward development of the crop's root system. Together, the net result is a shallow-rooted crop that is especially vulnerable to the effects of inadequate rainfall, as has been the case in some areas of southern Indiana since planting.

Some areas within fields are lighter green than other areas simply due to differences in soil color. In years



when temperatures after planting are relatively cool, lighter colored soils (lower soil organic matter) warm slightly slower than darker colored soils. Slightly cooler soil temperatures translate into slightly fewer Growing Degree Days (GDDs). Slightly fewer GDDs per day over enough days easily translate to a leaf stage or two less development than in the darker, warmer soils

(Nielsen, 2014). In reality, the lighter green areas are simply areas where plant development is behind that of other areas. When you are walking a field near the time it is transitioning to the rapid growth phase (sometime after leaf stage V6), minor differences in leaf stage development throughout a field can be visually dramatic. The more developed areas of the field will be taller and darker green than areas of the field that are 1 or 2 leaf stages behind.

Yet, plant health may in fact be identical in both areas even though your eyes tell you something is "wrong" with the areas of lighter green plants.

Cool and wet stand establishment periods for corn can be conducive for the development of and damage by parasitic corn nematodes. This spring has

Continued on page 2

**ALL RETURNS FOR SEED, PALLETS, AND PROBOXES ARE DUE BY JULY 7TH**  
**NO SEED RETURNS WILL BE ACCEPTED AFTER JULY 10TH**

IF YOU ARE STILL PLANTING PLEASE CALL US AND WE WILL WORK WITH YOU

**YouTube** This month's topic is **SOIL COMPACTION: HOW TO MANAGE SURFACE CRUSTING** Go to YouTube and type this into the search bar and it will show up for you. For more topics search Pioneer Seeds.

Remember when you paid for your seed you locked in your infinity level discount for savings all year long. Any seed that you buy now or later on this planting season will be at the same Infinity level discount as the seed you purchased previously.

You may qualify for double crop discounts on any seed you purchase in-season for double crop acres. Call us today to book your seed.

**Contact Information**

**PIONEER & WHEAT SEED NEEDS**

**Korey Carmichael** 316-641-3160  
 korey.carmichael@plantpioneer.com

**Tye Engel** 316-217-6253  
 tye.engel@plantpioneer.com

**Mike McGinn** 316-772-7171  
 mikemcginn@plantpioneer.com

**Tanner Gatz** 316-284-1597  
 TGATZ4@gmail.com

**Insurance**  
**Steve McGinn** 316-284-1935  
 mcginnst@hotmail.com

**BILLING QUESTIONS**  
**Susannah McGinn** OFF. 316-772-5050  
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## YELLOW STUNTED CORN... MORE THAN ONE CAUSE ... CONTINUED

been characterized as cool and wet during stand establishment in many areas of the state. We tend to think about corn nematodes being primarily restricted to sandier soils, but that is not always the case.

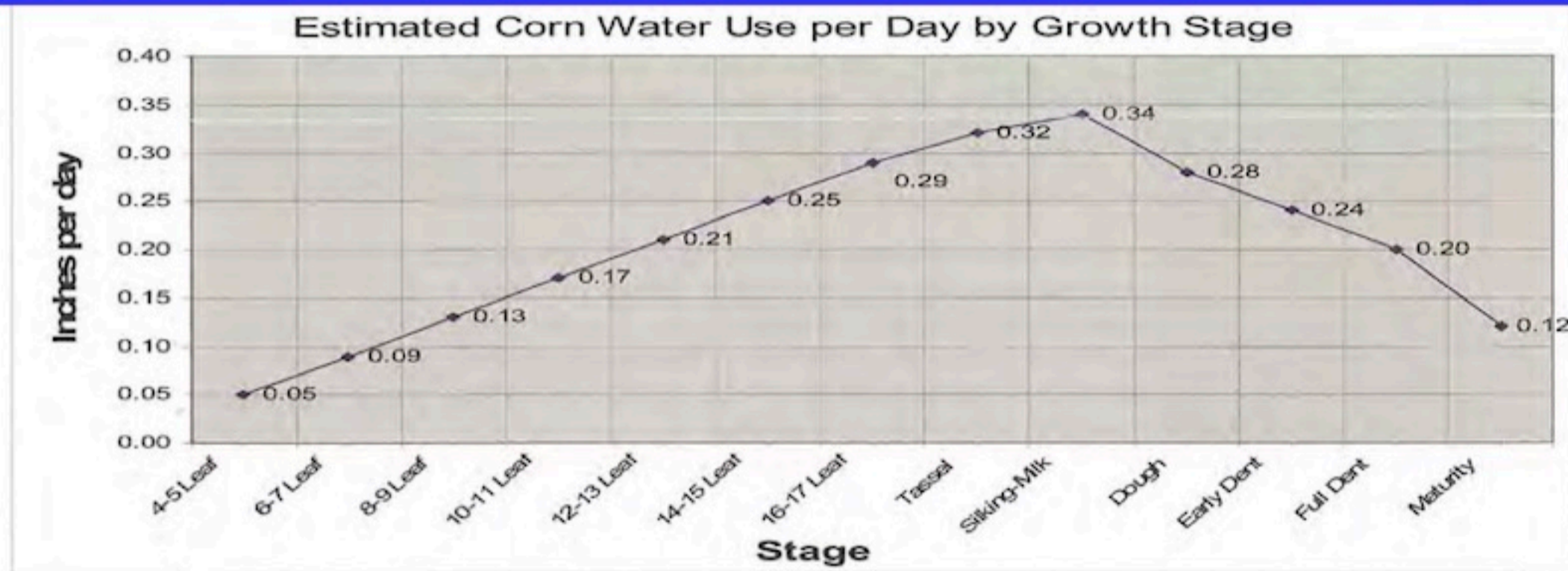
There is no question that some of the fields this year exhibiting yellow and stunted corn plants may be due to damage caused by parasitic corn nematodes. Cool and wet stand establishment periods for corn can also be conducive for the eventual development of seedling blights. Most of the disease-causing fungi are controlled effectively by the fungicidal seed treatments commonly used by the seed industry.

The problem is that the seed treatments do not last forever. Slowly developing corn seedlings, in response to a cool stand establishment period, may fail to transition successfully to reliance on their nodal root systems before the seed treatments deteriorate and disease de-

velops on the mesocotyl or seed. Symptoms often develop three or more weeks after planting when seedling development has been slow.

More and more growers apply the bulk of a corn crop's nitrogen fertilizer after emergence of the crop, which certainly minimizes the risk of losing soil fertilizer N before crop uptake occurs. However, some fail to combine the benefits of a sidedress N application program with a robust starter fertilizer program during planting. The combination of soil N loss and stunted corn root development that occur in an excessively wet early season almost always results in a crop prior to sidedressing that is yellow and stunted. The severity of the problem is even greater where a) sidedressing is delayed because of frequent rains and/or b) corn follows corn where there is additional immobilization of soil N by the decomposing corn residues from the previous year

## HELPFUL CORN IRRIGATION CHARTS



Below is a review detailing mid to late-season water requirements for various crops from a given stage of growth to physiological maturity. The information is taken from KSU publication MF-2174 - *Predicting the Final Irrigation for Corn, Grain Sorghum, and Soybean*.

	STAGE OF GROWTH	DAYS TO MATURITY	WATER USE TO MATURITY	KERNAL MOISTURE %
<b>Corn</b>	Pollination	60	14.5	
	Blister	45	10.5	85
	Dough	34	7.5	70
	Beginning dent	24	5.0	55
	Full dent	13	2.5	
	Physiological maturity	0	0	30-35

## WATER-CRITICAL GROWTH PERIODS OF CROPS

Each crop has a certain growth period during which water stress can have an especially significant effect on yields. Limited irrigation should be timed to avoid water stress at these growth stages. This will give the greatest yield benefit from a limited water resource.

The timing of limited irrigation to give maximum seed yield benefit is given in the table found below. Of the crops listed in the table, corn and soybeans are the two most affected by water-critical growth periods.

Corn yield is most negatively impacted by water stress from near-tasseling through silking, typically mid-through late-July. Soybean yield is most negatively impacted by water stress during bean fill, typically mid-August to mid-September.

### Timing of Limited Irrigation for Maximum Seed Yield Benefit

Crop	Initiate Limited Irrigation at:	To avoid or lessen water stress
Corn	Just prior to, or at, tasseling	Silking
Grain Sorghum	Head extension	Flowering
Soybean	Mid to late pod set	Early to mid-bean fill
Sunflower	Head development	Disk flowering
Wheat	Head extension	Flowering

Therefore, producers with limited irrigation, where the water supply cannot be depended upon to avoid (or lessen) water stress in the critical times for corn and soybeans, may want to grow other crops.

## DOUBLE CROP PLANTING TIPS & DATES

There are several factors to consider when double cropping after winter wheat. Some factors to consider for double crop after wheat are as follows:

### Crop Selection

There are many options for crops planted after winter wheat. Sorghum is most commonly used in this area. Soybeans, sunflowers, and corn can also be used. In selection your crop choice one must consider the economic and environmental factors that may effect that crop.

### Hybrid Selections

**Grain Sorghum:** 86P33, 86Y89, 86P20, & 87P06, are all excellent double crop sorghums and can be planted through the last week of June into early July.

**Soybeans:** P48A60X, P42A52X, P44A72BX, P43A68SX, P47TA81SX are several new Xtend's numbers also all have different applications, but should work well for double crop. (Note if Finesse, Gleen, Alley, Amber, and other similar herbicides were used on wheat, the use of STS beans for double crop is advised.)

**Sunflowers:** 63HE90 (High Oleic) or 64ME01 Mid-Oleic are good choices.

**Corn:** P0343AML and P0589AM are the best choices. Probably the least likely option for double crop, but with 100 day or less corns, there is good yield potential under irrigation. We would recommend BT corn due to late corn borer pressures.

### Plantability Rate

On grain sorghum heavier planting will suppress tillering and therefore should shorten up the maturity of the plants. 20-30% or more population is the rule of thumb. Soybeans, corn and sunflowers are all recommended in normal populations.

### Maturity of Hybrids and Cut-Off Planting Dates

Shorter maturity varieties are still a good safe practice. Milo, soybeans, sunflower, and corn selections stated above all fit the planting window that we have before us. The closer we get to the end of June, the shorter season varieties should be considered. Some basic guidelines for planting dates are as follows.



**Sorghum**  
86P33 & 86Y89 — July 6th  
87P06, 86P20—July 10th



**Soybeans**  
All varieties – July 5th (the earlier the better)



**Sunflowers**  
63HE90, 64ME01 – July 20th



**Corn**  
P0343AML P0589AM – June 25th

### Soybeans

With soybeans we normally do not switch maturities when double cropping. Why? Soybean maturity is regulated by the day and night length. As days shorten up after June 20th the beans are stimulated into blooming. Thus an early group III and group IV will both start blooming as soon as they begin to leaf out in a double crop situation because the night length is right to induce blooming. Therefore, when double cropping you effectively will not see a significant difference in harvest dates between a late group III vs. an early group IV.

However, you will see differences in canopy – late planted beans do not canopy as well as early planted beans. For this reason you should plant double crop beans in narrow rows at higher populations (- by 7-10% over normal planting rates). We recommend staying with your normal adapted maturities of beans for double crop.

### Sunflowers

Sunflowers can be planted until July 15th –20th. This would be our latest possible option on planting. Planting late should also escape head moth spraying and defoliate spraying. These tend to be the two most common expenses in sunflowers.

A recommendation as to what could yield the most success would be grain sorghum, soybeans, sunflowers and corn in that order. Please call us with any question regarding double crop seed and its availability for double crop for you.

## HAVE SOMETHING TO SELL?

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