



AgVantage Green Notes



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Late Start Corn Planting Adjustments

The following are some suggestions from Peter Thomison—Ohio State University and Lloyd Murdock and Greg Schwab—University of Kentucky on some management adjustments you can make to ensure as timely planting as possible as well as getting the necessary nutrients applied.

Now is the time to plant corn and soybeans, but planting will not be possible for a few days in several areas. When we do get the opportunity to plant (we always do) priority will be on getting corn planted as quick as possible so as not to further lose more yield.

What about preplant nitrogen? You can apply preplant nitrogen if applying it will not delay planting. Preplant anhydrous ammonia is the most concerning practice because as high concentrations of ammonia in the seed zone can kill the corn seedling. If you can, side dress anhydrous ammonia.

Both urea and 28% can be applied at the time of planting with P and K fertilizer or crop protection products respectively. What if I can plant my field before the urea or 28% can be applied? It depends on how long the wait is. But you could go ahead and plant the field. Agrotain and Agrotain Plus can be added to help protect the urea and urea solutions from volatilizing for 10-14 days depending on rate to buy some time for a rain to incorporate the nitrogen. It doesn't take much rain around 0.2" to incorporate the urea and urea solutions in the soil. You can apply both urea and 28% to an emerged crop. Urea can be broadcast with Agrotain and 28% can be dribbled with Agrotain or Agrotain Plus (Agrotain Plus is a urease inhibitor and nitrification inhibitor all in one product).

So how long after planting can I wait to apply N?

Not that any of us will wait very long, but U of Ky research has indicated that N applications can be

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Burndown Applications Get More Difficult, But Still Critical to Season Long Weed Control

Boy, this season is not getting any easier and neither are getting burndown products applied or deciding what to apply. The toughest to control weeds are perennials and annual weeds such as marestail, giant ragweed (horseweeds) and common lambsquarter. In looking at fields in the southern part of the territory, marestail, giant ragweed and lambsquarter are common place and getting some size.

So, what products can I use and how do I go about choosing which products to use? First of all talk to you local Ceres Solutions Professional. He or she has probably have some opinions on what products work best for several scenarios.

There are two common burndown programs, a contact burndown program consisting of Gramoxone Inteon as the operative burndown product and a translocated burndown program consisting of glyphosate as the operative burndown product. Both programs have their advantages and disadvantages. Gramoxone Inteon burndowns usually provide a quicker result, but the product will only kill the tissue that it touches. So high carrier volume and good coverage are key to making this burndown choice work. Also adding a photosynthetic inhibitor product such as Dimetric for soybeans and atrazine for corn will slow the burn and improve overall control. Glyphosate burndowns are slower, however since the product is translocated through the weed, the weed is killed roots and all. Glyphosate burndowns are better for weed scenarios where lots of perennials are present or for our tougher to control summer annuals.

How do you choose which one to use? The first question you will be asked is what weeds are you trying to burndown? Are you looking to control winter annuals or some of the more troublesome weeds like perennials or the tougher to control summer annuals like marestail, giant ragweed and lambsquarter? Other questions will include when do you plan to plant? Do you need some flexibility for corn or soybeans?

For winter annual weeds such as cress leaf groundsel and already flowering mustard species such as pepperweed, shepherds purse, etc or even heading out wheat cover crop or cereal rye, Gramoxone Inteon could be just the ticket for a complete, fairly quick burndown. Adding a triazine as we mentioned earlier will allow you to reduce the Gramoxone Inteon rate and improve control. 2,4-D is still recommended if you can wait the 7 days to plant corn or beans (the later we are the harder it will be to keep 2,4-D in the mix.) Gramoxone Inteon should be applied with at least 15-20 gal of carrier. Always, always add a surfactant such as a crop oil concentrate such as Superb HC or a surfactant such as Preference. The following are the rate and size recommendations:

- 3-6" weeds use 2.5 pt/A of Gramoxone Inteon with a triazine or 3.0 pt/A of Gramoxone Inteon alone
- >6" weeds use 3 pt/A Gramoxone Inteon with a triazine or 3.5 pt/A Gramoxone Inteon alone.

Insect and Pest Update

Increased Potential for Black Cutworm Problems in Corn—

George Waters, Agronomist Winfield Solutions -The various storm fronts which keep our soils too wet to plant, can also carry a steady flow of black cutworms. Although intense captures have only been recorded in Clinton, Putnam, Sullivan and Tipton counties as of last week, cutworms have been being caught steadily for the past few weeks. Cutworms in these storm fronts have not had problems finding weedy fields this spring due to our wet spring and lack of winter annual weed control. This year we may be planting into fields with some level of cutworms already present. There are a couple of ways you can control cutworms. If black cutworm numbers are known to be high in your area you can apply an insecticide with herbicides or liquid fertilizer at planting to control larva and kill eggs already present. Or you can scout planted fields in about 4-5 weeks for damage from black cutworm feeding. If the economic threshold is reached a post-mergence insecticide can be applied. Products such as Arctic, Delta Gold and Grizzly Z can be used. Remember seed insecticide treatments and YieldGard Bt corn do not provide adequate cutworm protection. Herculex technology does provide reasonable protection.

Armyworm moth flights—Christian Krupke and John Oberymeyer—Purdue University—Our black light trapping at the Purude Ag Research Centers have been catching a fair number of armyworm moths as of May 1. Trap numbers the week ending May 4 were lower. Grass crops such as grass hay and wheat should be monitored in the next 2–3 weeks for leaf defoliation and small armyworm larvae hiding under the soil surface residues during the day.

Soybean Aphid Update—Near the end of April Christina DiFonzo, MSU reported that although leaves are emerging on buckthorn in

Michigan (the overwintering host for soybean aphids), she was not finding aphids or aphid colonies so far. Aphids should be monitored this year due to the record fall flight in 2008. More updates to come.

What about slugs this year? In the past we have had some issues with slugs in no-till during wet springs. Here are some comments from Del Voight, Interim Grain Crop Specialist, Penn State.

Slugs can severely impact the development of corn especially if prolonged wet weather is occurring. Dry windy weather will allow the slug issue will go away as quickly as it emerged with the exception of side wall compaction when they feed under the soil line and are not subject to weather. Leaf feeding is not a huge issue provided dry weather returns, however, if slugs attack the seed they can kill plants and set seedlings back weeks before recovery (Our experience in southwest IN also supports this.) To avoid the pest the following are some methods:

- Avoid sidewall compaction
- Step up field visits when wet prolonged weather exists
- Treatments— There are numerous methods to deal with slugs and results will vary in control.
- Trash cleaners and zone tillage
- Deadline MP or other baits in row under severe infestation—10 lb/A if banded; 40 lb/A if broadcast—cost \$22-84 per acre
- Mix of Liquid UAN and water sprayed at night—cost about \$20 per acre
- Tillage—if field is perennially no-tilled this is not a viable option

Just Stuff

Mixing your own Pesticides? The following is some info on pesticide mixing order to ensure the products mix without becoming cottage cheese, the mix controls intended pests as expected and crops are not damaged.

Differences in pesticide formulations, adjuvants and the carriers require that a specific mixing order be followed to avoid possible compatibility issues. To remember the proper mixing order for many pesticides, remember **W-A-L-E-S** or **D-A-L-E-S**

W and **D** refers to **wettable powders (WP)** and **dry flowable (DF)** pesticides which need to be thoroughly dispersed in the water or liquid fertilizer first.

A means agitate until the dry products are thoroughly dispersed

L refers to liquid pesticides and liquid flowables which should be added next

E stands for emulsifiable concentrates which should go in after the dry, liquids and liquid flowables are thoroughly dispersed

S refers to surfactants and oils which should generally be added to the spray mixture last.

Soybean Rust Update—By Don Hersman, University of Kentucky—This is the first year that soybean rust (SBR) has successfully overwintered in Alabama, Georgia and Louisiana, without a break in detection. Weather conditions have been favorable to highly favorable for SBR development in those states, plus Arkansas, Florida, and Mississippi for much of this spring. There has been some new SBR

activity in Florida and disease incidence is increasing on Kudzu in positive sites in Louisiana, but there has been no spread to new Kudzu patches or to soybean to date. Specialists in many southern states are expecting SBR to begin spreading into new areas soon, provided conditions remain favorable for disease development.

Delayed planting of soybean in many states, due to wet conditions, may push crop maturity back a few weeks. This, plus the potential for earlier disease development due to successful overwintering in the mid-Gulf region, could increase the potential for SBR to cause more crop damage than we have seen to date. Of course, if conditions turn drier, this increased disease potential may translate into nothing. We all hope this is the case. In any event, it would be prudent to keep tabs on this developing situation.

More biomass to ammonia plants in Midwest—Syngest Incorporated has selected Menlo, IA—45 miles west of Des Moines—as the location for the world's first biomass-to-ammonia plant.

Syngest will use a proprietary process to produce anhydrous ammonia, fuel and fertilizer from corn cobs. Plans call for production to begin in 2012– and Syngest CEO Jack Oswald says it could be the first of many plants in the Midwest.

“We have intentions of building several of these within the state of Iowa and also expanding,” Oswald says. “We’ve spend a lot of time researching locations in the state of NE. We’ve had discussions with some folks in the state of IN, and we’ve also had people talk to folks in other states, on our behalf.

Oswald says a major Midwestern agribusiness will work with Syngest to supply the stover and distribute the ammonia from IA.

Effects of cutting back on Potassium Fertilizer

By Daryl Warnke, Michigan State University—With the continued high price of potash many farmers are considering cutting back on the amount that is applied. In making decisions about how much potassium to apply or how much one can cut back, it is very helpful to have soil test information indicating the available potassium (K) status of the various fields being farmed.

When the K soil test value is less than the critical value, applying no potassium will definitely result in yield loss. The critical varies with the CEC (cation exchange capacity) of the soil. For soils with CEC values of 6, 12 or 18 the critical value will be 90 ppm (180 lb/A), 105 ppm (210 lb/A) or 120 ppm (240 lb/A) K, respectively. The further the soil test value is below the critical value the greater the yield loss will be. This applies for all crops.

For farmers looking to cut back on potash, it is best to look on fields where the soil test is above the critical value where the normal recommendation is to apply an amount equal to crop removal. A 180 bu/a corn crop will remove about 50 lb K₂O/acre and a 60 bu/a soybean

crop will remove near 85 lbs K₂O/acre. The risk of significant yield loss from applying no K or a reduced rate on these fields is generally low for the current growing season. **However, it needs to be recognized that as K is removed from the “soil bank” a reduction in the available soil K level will occur.** The decrease occurs more rapidly in sandy soils than in clayey soils. At some point in time this will need to be replaced.

In soils with CEC values of 6, 12 and 18, the available soil K test value may decrease approximately 1 ppm for about each 5-6, 9-10 and 13-14 lbs K₂O/acre removed from the soil. Therefore, if 50 lbs K₂O/a is removed and none is applied, the available soil K may decrease in the neighborhood of 9.1 ppm (18 lb/A in a CEC of 6), 5.2 ppm (10.4 lb/A in a CEC of 12) and 3.7 ppm (7.4 lb/A in CEC of 18) per year. Applying 25 lbs K₂O/a in the starter fertilizer (2X2) will reduce this rate decrease. Prioritize potash use for those fields with soil test values below the critical K soil test value and look to cut back on fields that have soil K values above the critical value where yield is less likely to be impacted.

Increased Risk of Foliar Diseases in Late Planted Corn

By Paul Vincelli—University of Kentucky—Rainfall patterns have delayed corn planting throughout much of the state. Late planting increases the risk of damaging levels of certain foliar diseases, particularly gray leaf spot, southern leaf blight, and northern leaf blight.

Several factors can contribute to this increased risk:

1. When there is a mix of fields planted early near fields planted late, the early fields can be a source of spores for late-planted field. The early fields act a bit like “Typhoid Mary”.

Compared to early fields, late-planted corn is often at an earlier stage of crop development during periods of spore release and leaf blighting. Since leaf blighting early in plant development is more harmful to yields than late-season blighting, the late-planted fields have the potential to be hit harder than earlier fields.

Fields not planted until the last week of May or into June have the highest risk of foliar disease. Producers planting corn late this spring should use hybrids with adequate levels of resistance to gray leaf spot. Selecting hybrids with good resistance to gray leaf spot is especially important if the field is under conservation tillage (30% or more residue cover) and has had corn anytime in the last two years. Also, if a field has a recent history of southern leaf blight or northern leaf blight, consider those diseases in hybrid selection.

Of course, many producers have already purchased seed for this spring. If a field is sown late and the hybrid doesn't have substantial resistance to the diseases mentioned above, a fungicide application is more likely to be cost-effective. Figure 1 lists the factors that increase

the likelihood of getting a positive economic return from a fungicide application in corn. The more of those that are in place, the more likely a corn field is to benefit economically from a fungicide application.

If you do choose to use fungicides, it is always a good idea to leave at least one untreated strip in the field in order to see if the fungicide provided any benefit. Sometimes it will but often it won't, and getting on-farm evidence helps in making future farming decisions.

Factors that Increase the Chances for a Positive Response to Foliar Applied Fungicides in Corn:

- Susceptible Hybrid
- Continuous Corn
- No-till
- Late Planting
- High plant population and/ or yield potential
- Irrigation
- Disease-favorable weather forecasted
- Disease activity at tasseling
- Field History of disease and lodging

Soybean Seed Treatment Still a Good Idea?

Given the late planting date is treating soybeans still a good idea? The following are comments by Laura Sweet, University of Missouri.

Soybean seed treatment fungicides can be effective in preventing or reducing damage from pathogens that may be carried on the seed (phomopsis seed decay) or pathogens present in the soil that cause seed decay, seedling blights, and root rots of soybeans (ex Phytophthora, Pythium, Rhizoctonia).

Scenarios under which treating soybeans with a seed applied fungicide would still be a wise consideration:

- If there is a legitimate concern that is infested or infected with a

seed-borne disease

- If the field has a history of a specific early season disease
- If field conditions are not favorable for rapid germination and emergence
- If the variety being planted is a high yielding variety with little or no resistance and/ or field tolerance to Phytophthora

We are still treating soybeans so see your local Ceres Solutions Professional for more information.

Grain Update

USDA Summary—Dec 11, 2008

Estimates in Million Bushels

Corn	May USDA—08/09	Apr USDA-08/09
Carry-in	1624	1624
Production	12,101	12,020
Total Supply	13,740	13,740
Feed and Residual	5350	5,350
Ethanol	3750	3700
Exports	1,700	1,750
Total Use	12,040	12,140
Carry-out	1,600	1,700
Soybeans		
Carry-in	130	205
Production	2,959	2,959
Total Supply	3176	3,176
Crush	1,675	1,635
Exports	1,260	1,210
Seed	94	94
Residual	73	73
Total Use	3046	3011
Carry-out	230	
Wheat		
Carry-in	306	306
Production	2,500	2,500
Total Supply	2,930	2,930
Food	922	925
Seed	79	79
Feed & Resid	250	250
Exports	1010	980
Total Use	2,261	2,234
Carry-out	669	696

Burdowns cont.

For perennials and tough to control winter annuals, a glyphosate product may provide the better overall control albeit it takes a little longer. Do not mistake that just because a glyphosate product may be a better choice that it is not tough for a glyphosate burdown to do the job. In fact we need to increase the rate of glyphosate to better control these weeds, especially if 2,4-D is not going to be in the spray mix. For a glyphosate burdown carrier volume is also critical but not as much carrier is recommended. Carrier volumes in the 10-12 gal per acre range are what we want. With a glyphosate burdown it is critical a high concentration of glyphosate is in the spray droplet to improve control. Always add AMS unless applying in 28% nitrogen. You can also increase the surfactant load by adding more surfactant to help improve control.

Use rates for several glyphosate products for mareetail, giant ragweed and lambsquarters are:

- 6-12" tall—32 oz/A Roundup WeatherMax/ PowerMax; 35oz/A of Touchdown Total; 48 oz/A of Cornerstone Plus
- >12" tall—44 oz/A Roundup WeatherMax/ PowerMax; 48 oz/A of Touchdown Total. 64 oz/A of Cornerstone Plus

You mentioned applying glyphosate with 28% N as a carrier, any guidelines for ensuring weed control? Yes, for weeds up to 6" increase use rates of WeatherMax by 6 oz/A because of antagonism with the 28% and glyphosate. For weeds 6-12 inches increase the WeatherMax rate by 11 oz/A. For perennial weeds do not use 28% as a carrier. Although not specifically stated by Monsanto, I would not use 28% as a carrier for our tough to control weeds such as mareetail, giant ragweed and lambsquarter. Again see your local Ceres Solutions Professional for help deciding your burdown program.

Corn Planting Adjustments cont.

delayed as long as the V6 growth stage (six collar corn about 18" tall) before yield loss can occur even when no N was applied at planting.

What about P and K? If P and K levels are at or near optimum, any added fertilizer this spring would maintain these soil tests. If soils are near optimum for P and K then we could skip the application this fall, but will need to remember to catch the field in the fall. Again to maintain high yields in fields with near optimum fertility levels we need to replace what the crop removes. If P and K soil levels are low yield will be hurt by not apply P and K. P and K can be applications can be delayed until after planting.

Keep time expended on tillage passes and other preparatory operations to a minimum (yes there are some big weeds out there). You could consider a burn-down before tillage to quicken weed death (others have done this in the past very successfully.) Monsanto recommends this practice to control downy brome, cheat, volunteer wheat, tansy mustard and foxtail. For this practice Monsanto recommends an application of 8 oz/A of Roundup WeatherMax in 3-10 gal per acre of water. Make applications before weeds are 6" tall. Follow with tillage no later than 15 days after treatment. Allow at least one day after application before tillage.

What about applying residual weed control? We can apply residual weed control preplant, preemergence and postemergence on corn. We do need to control existing weeds if the field is no-tilled as soon as possible. Burndown products available to use will become more limited once the corn emerges. Existing weeds can interfere with planting operations and directly compete with corn trying to emerge. If the field is tilled we can wait until weeds get about 4" high before we take a yield hit. If you are combining nitrogen applications (with 28% and weed control) we are limited to very few residual products that can be applied with 28% after the corn has emerged.

What about switching hybrids? In the southern part of Ceres Solutions territory it is not necessary to consider switching hybrids until early June. In the central part of the territory not until the end of May. In the northern part of the territory we should consider shorter hybrids before the end of May. The following table is a guide:

Approx. "safe" relative maturities for late planting dates in Indiana assuming crop will mature on week before expected fall frost

Crop District	Typical CRM	Expected Fall Frost	May 17	May 24	May 31
NW	109	Oct -6	109	108	106
WC	112	Oct 13	118+	118	116
SW	116	Oct 20	118+	118+	118+

As with any decision on the farm, it is yours to make. The purpose of this discussion is the make you aware of some of the changes you can make to nitrogen management, weed control, etc. so as not to delay corn planting further and suffer more yield loss. We can still get great corn yields planting now till near the end of May. Only time will tell whether the early planted corn will out yield later planted corn. What matters most is environmental conditions after planting if you have done the best you can to get it planted as "right" as you can.