



Agronomy Notes

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Growth Stages of Corn

Corn growth stages are shown below. Management decisions can be made during different growth stages that impact yield. Consumers know corn best from the R3 stage which is commonly referred to as the roasting ear stage which is about 18-22 days after silking. The growth stages are signified by vegetative stages which occur prior to silking and the reproductive stages which have to do with ear development. Each leaf stage is defined according to the uppermost leaf whose leaf collar is visible. The first part of the collar that is visible is the back which appears as a discolored line between the leaf blade and leaf sheath. The oval-shaped first leaf is a reference point for counting upward to the top visible leaf collar. However, at V6 the V1 leaves may fall off due to expansion of the stalk and the first leaves can only be identified by splitting the stalk and identifying the internode expansion at the base of the plant.

Vegetative Stages

VE emergence
V1 first leaf
V2 second leaf
V3 - third leaf
V6 - sixth leaf
V9 ninth leaf
V12 - twelfth leaf
V15 - fifteenth leaf
V18 - eighteenth leaf

Reproductive Stages

R1 - silking
R2 – blister
R3 – milk
R4 – dough
R5 – dent
R6 - physiological maturity

Fungicide Use in Corn

There has been a lot of discussion about the use of fungicides on corn the past several years. Diseases can be devastating on any crop if proper rotation and planting date are not followed. Corn is susceptible to rust, both common and southern, and leaf blight. Corn that is planted later than normal is more susceptible than early planted corn and corn planted after corn in the same season is highly susceptible to large yield losses from diseases. On a survey done for grain yield loss in Iowa, mean yield response to fungicides was greatest when disease severity in a field at R5 (dent at 35-42 days after silking) was high. If disease severity on the ear leaf at R5 was <5 percent, mean yield response to fungicides was 4.83 bu/A, however, when disease severity on the ear leaf at R5 was >5 percent, the mean yield response was 9.46 bu/A. Based on the price of corn of \$3.72 and \$24 product + application, the breakeven yield response is 6.45 bu/A". In Florida we have seen disease on corn to be at higher levels than these. Therefore, growers should consider monitoring disease levels in their corn crop and if fungicides are applied leave some areas in the field untreated to determine the economics of treatment for future years. The southeast may have higher diseases on corn due to a longer growing season and more favorable environmental conditions (rain).

Volunteer Canola

Twice this season I have received calls about “some strange mustard looking plant” that was growing in a production field. Both instances of this weed was following a rye cover crop. The greatest concern was that this weed was seemingly not affected by multiple applications of glyphosate. So what is this weed?

We are not exactly sure about this weed because getting a positive ID on anything in the mustard family is very difficult, but I suspect that this is canola. In some areas where rye seed is produced, they have also historically grown canola. In recent years, much of the canola grown is Roundup Ready. Since this plant seems to be surviving the glyphosate applications with no apparent injury, I have surmised that Roundup Ready Canola seed was transported here in rye seed. It is important to keep a watch for this weed. It is relatively easy to see since it can look almost blue in color. If you see this weed, you should act quickly to get it removed before going to seed. Volunteer canola can be somewhat difficult to control, but next is a list of commonly used herbicides and their relative efficacy against this weed.



Canola Plant. Photo: Dan Mullins, Santa Rosa County

Peanuts	Relative efficacy
Valor (PRE)	Good
Cobra	Fair
Basagran	Fair
Cadre	Excellent
Soybeans	
Sencor (PRE)	Good/excellent
Cobra	Fair
Basagran	Fair
Pursuit or Extreme	Excellent
Raptor	Excellent
Corn	
Callisto	Excellent
Accent	Excellent
Atrazine	Fair/good
2,4-D	Fair
Dicamba	Good
Steadfast	Excellent
Small Grains	
Express	Excellent
MCPA	Poor
Harmony GT	Poor
Harmony Extra	Excellent
2,4-D	Fair
Dicamba	Good
Cotton	
Ignite	Fair
Diuron	Good/excellent
Envoke	Excellent??

Cutting Losses in Hay Storage

This year has been an excellent one for hay production in most of the state. Several factors have contributed to make this possible—the cool-spring temperatures, good distribution of rain and a few bouts of the necessary dry weather. Many ranches are well stocked with hay and we still have August and September to go. As challenging as hay production is in our state, this excellent source of nutrition needs to be further protected after bales are made to warrant indefinite storage (if storing inside) or to extend outside storage with minimum nutrient losses from exposure to weather.

If storing hay outside, the site selection is an important consideration. A great extent of the spoilage of round bales occurs from moisture that is absorbed from the ground, which can be as much or more than the infiltration from the top. The spot selected should be a well-drained, open, sunny location avoiding areas under trees. It is recommended to select a site close to the feeding area because bales become harder to handle as they weather. As much as possible, avoid hay-to-soil contact; this isolation can be achieved by storing on concrete pad, crushed rock, or any other material that would keep the bale dry and from touching the soil directly. An important consideration for Florida is to keep away from storing near wire fences or other objects that may attract lightning. If large number of rolls have been produced, it is advisable to split the storage at several locations to minimize potential loss to fire. When storing, ideally, leave a clearance of 3 feet between bales to allow drying after rain events. Bales can also be stored end-to-end with flat ends of bales butted tightly and avoid having the rounded sides touching. Touching of bales will increase moisture accumulation. Orientation of the row of bales is also important; the north-south orientation of the bale row provides maximum sun exposure compared to the east-west orientation, which contributes to keeping the bales dry.

Barn storage is an effective method of storing hay; under this modality, hay losses are typically around 5% compared to 30% or more when storing outside. An added benefit of storing hay in a barn is the protection from sun and preservation of hay color. However, if storing inside or outside using covers (tarp, plastic sheeting, or other fabric), the target is to keep moisture from building up. High moisture levels (over 20%) will promote mold growth that significantly decrease hay quality and increases heating of the bales and with it the fire risk.

There are many options for protecting your hay, and it varies from the resources available at each location. The extra effort to protect your hay will pay dividends.



Practical covered structure with pallets for hay storing.

Photo: Y. Newman

Calendar

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- Aug. 1-5 [Ecosystem Restoration Conference](#) (NCER), Baltimore, MD
- Sept. 12-15 [National Goat Conference](#), Leon Civic Center, Tallahassee
- Sept. 14-17 [International Citrus & Beverage Conference](#), Clearwater Beach
- Sept. 20 **Florida Equine Institute and Allied Trade Show**, Southeastern Livestock Pavillion, Ocala
- Oct. 11-14 [UF-CTA Potential Invasive Pests Workshop](#)
Coconut Grove (Miami), Mayfair Hotel
- Oct. 19-21 **Sunbelt Ag-Expo** <http://www.sunbeltexpo.com/>
Moultrie, Georgia
- Oct. 31-Nov 3 **American Society of Agronomy Annual Meeting**
<http://www.acsmeetings.org/>, Long Beach, California
- Nov. 16-18 [Tomato Disease Workshop](#), Balm (Gulf Coast REC)

UF-CTA
Potential Invasive Pests Workshop
October 10-14, 2010
Mayfair Hotel • Miami (Coconut Grove), Florida USA

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Oct. 31-Nov. 3 | Long Beach, CA

Green Revolution 2.0: Food+Energy and Environmental Security