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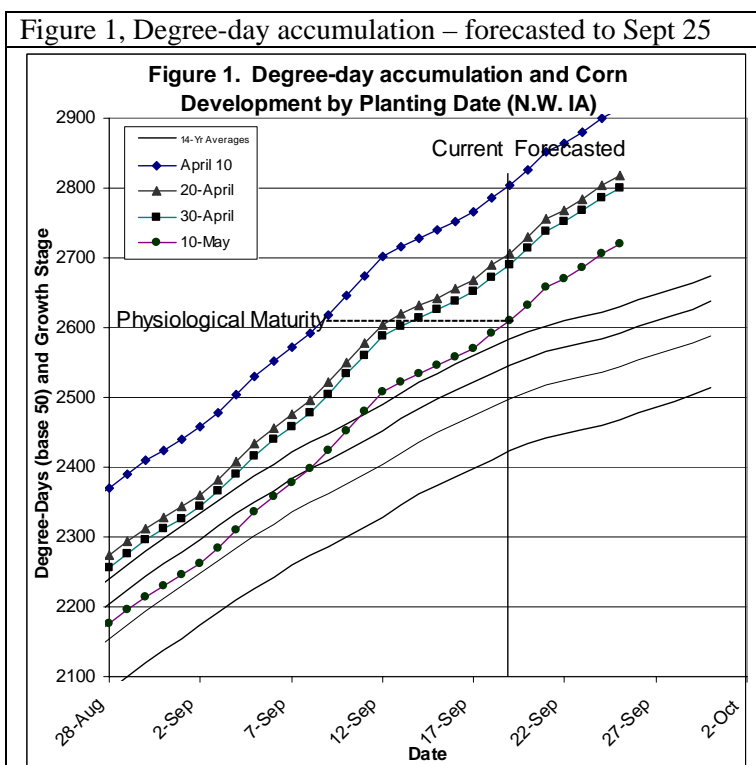
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Introduction

Warm and dry conditions have prevailed over west-central IA for the past two weeks, allowing for rapid crop maturity and drying in the field. The same conditions should continue through this week. Most corn has reached maturity in the area, and is drying down at a rate of about three quarters of a point of moisture per day. Soybean harvest has begun, harvesting at the correct moisture is very important for storage and to avoid potentially large harvest losses in the field. Harvest is also a time of data collection. I am particularly interested in strip trials comparing treated vs. non-treated areas of soybeans with fungicides and insecticides. If you have information to share, please use the forms listed at the end of this newsletter.

Weather information

Growing Degree Day What month is it? The 14-year average GDD lines (figure 1) indicate that degree-day accumulations should be declining, yet the current year lines keep going up (in a somewhat erratic fashion). Above normal temperatures since early September and forecasted through this week will push the season's accumulation to 107 - 110% of normal. Last week's degree-day accumulation was 116% above average and the forecast for the coming week shows accumulations of 220% of normal (table 1). Warmer than normal temperatures can be favorable at this time of year to aid in crop and grain dry-down in the field. Accumulation and predicted plant phenology stages are shown in Table 1 and Figure 1 and is forecasted through Sept. 25. More detailed degree-day accumulations by planting date can be obtained at this URL: <http://www.extension.iastate.edu/nwcrops/degree-days-2005.htm>



Crop Management

Physiological maturity Most corn across the region should be near or well past physiological maturity (characterized by formation of the “black layer” at the base of the corn kernel) as shown in figure 1. Next will be harvest maturity, which will be determined when the grain in the field reaches moisture levels you determine are low enough for harvest.

Table 1. Degree-Day Weekly Accumulation				
	2005	2004	2003	14-Yr Ave
Sept 12-18	112	120	96	96
Forecasted Sept 19-25	128	120	56	58

Dry down rates of corn. Now that many fields of corn across the area are near or past physiological maturity, the rate of in-field dry down will determine when harvest maturity is reached. Peter Thomison (Ohio State University) described in the CORN Newsletter (<http://agcrops.osu.edu/index.php>) the rates in which corn grain

dries. The following dry down rates were derived from research in western Ohio, therefore they may be different for northwest IA, but they are a good baseline to work from. Starting point for this is black layer, of course.

- Corn will normally dry approximately 3/4 to 1 point of moisture per day during favorable drying weather (sunny and breezy) during the early warmer part of the harvest season from mid to late September
- Early to mid-October, dry-down rates will usually drop to 1/2 to 3/4% per day.
- Late October to early November, field dry-down rates will usually drop to 1/4 to 1/2% per day.

Estimating dry-down rates can also be considered in terms of Growing Degree-Days (GDDs). It takes about 30 GDDs to lower grain moisture each point from 30% down to 25%. Drying from 25 to 20 percent requires about 45 GDDs per point of moisture.

	Current Moisture Between	
	30% - 25%	25% - 20%
	Moisture lost (%)	
Last Week	3.7	2.5
This Week	4.3	2.8

Grain Harvest Tips

Grain Moisture Content for Safe Storage (by Paul Kassel, ISUE Crops Field Specialist)

- ✓ Soybeans – sold by spring 14.0 %
- ✓ Soybeans – stored up to one year 12.0 %

Soybean Harvest losses – rules of thumb.

- ✓ 4 soybeans per square foot equal one bu/a loss.
- ✓ Be sure to include soybeans in uncut stubble.

Hidden Soybean Yield Loss: When soybeans are harvested below 13% moisture, yield is lost. For example: 50 bushel per acre soybean yield at 9 % moisture equals 2.4 bushel per acre hidden soybean yield loss (13% moisture minus 9% moisture equals 4 points of moisture times 0.6 bu/point/acre hidden yield loss, or 2.4 bushel per acre). See table 3.

Yield	Harvest moisture level of soybeans							Rule of thumb
	7	8	9	10	11	12	13	
	---Bu/acre yield loss---							
60 bu/a	4.1	3.4	2.7	2.0	1.3	0.7	0	0.7 bu/A/point
50 bu/a	3.4	2.8	2.2	1.6	1.1	0.6	0	0.6 bu/A/point
40 bu/a	2.7	2.3	1.8	1.2	0.8	0.5	0	0.5 bu/A/point
30 bu/a	2.1	1.7	1.4	1.0	0.7	0.4	0	0.3 bu/A/point

Data Collection

Harvest time is a period of data collection, particularly collection of corn and soybean yields. Of particular interest to me are comparisons between treated and non-treated areas of fungicide and/or insecticide treatments applied to soybeans to control either (or both) soybean foliar disease or soybean aphids. This information can be very useful in following years when making a decision to treat for a pest. Most importantly, the more data points available to make the decision, the better informed the decision will be. So if you applied a side-by-side treated vs. non-treated comparison on your farm, and would like to share your results, please fill out one or both of the following forms. I will take the data collected around the region and present it in this newsletter, hopefully showing trends that will help us make better informed decisions in following years.

Please find the "Treated vs. Non-Treated" printable PDF form at these URL's:

Soybean aphid insecticide treatment form:

<http://www.extension.iastate.edu/nwcrops/Soybean-Aphid-Insecticide-Treatment-Survey-2005.pdf>

Soybean disease fungicide treatment form:

<http://www.extension.iastate.edu/nwcrops/Soybean-fungicide-Treatment-Survey-2005.pdf>

Crop Update Newsletter Prepared By:
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For further information pertaining to this newsletter; please contact me or any of the county extension offices. This newsletter can also be accessed on-line at http://extension.iastate.edu/carroll/crops/newsletter_2004.htm. If you would like this letter to be emailed directly to you, please send an email with the desired email address to vagts@iastate.edu.

This newsletter is available via fax (in selected counties) or e-mail and can always be found on the web at http://www.extension.iastate.edu/nwcrops/newsletter_2005.htm If you would like to receive this newsletter in a format (different than what you currently receive), please let me know by phone (712-792-2364) or email (vagts@iastate.edu).

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