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Introduction

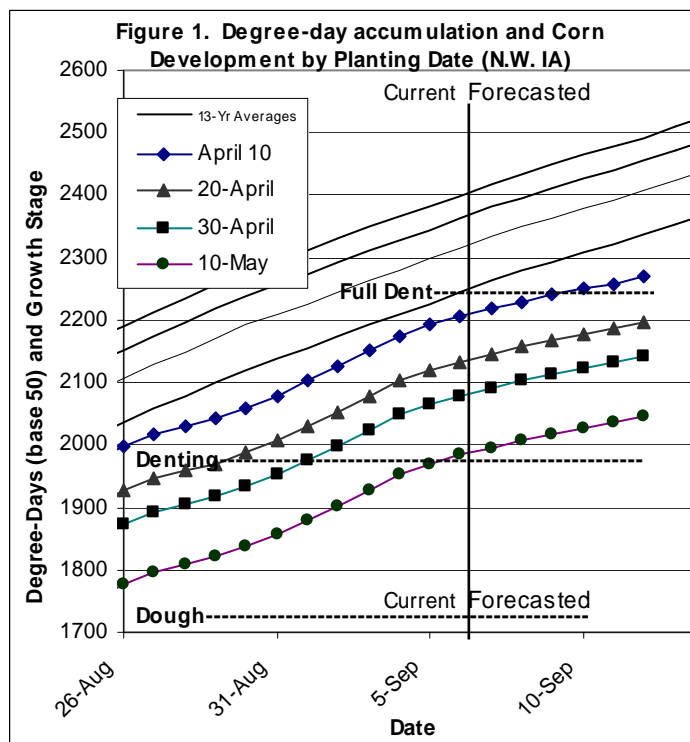
We have just experienced the 3rd warmest week of the year, with much welcomed degree-days to help advance the corn and soybean crop closer to maturity. Most corn in the area is denting to full dent; many soybean fields (with maturity more influenced by daylength) are beginning to turn color and drop leaves. Be sure to check out the information presented by the University of MN, where frost and immature corn is almost assured for most of the state. We are in the last few weeks available to prepare the storage facilities for grain storage, be sure to get those activities done now. This is also a good time to begin planning to use the fall corn stalk nitrate test to assess the nitrogen sufficiency/status of this year's corn crop.

Row-Crop and Forage Information

Growing Degree-day A warm week finally arrived in N.W. Iowa. This was the 3rd warmest week of the summer, behind July 12 – 18 (156 DD) and June 7 – 13 (167 DD). The heat wave will be short lived though and cooler temperatures will return on Sunday and will stay through much of next week. Again, lowering the forecasted weekly degree-day total to much below normal. On average, N.W. Iowa accumulates 380 degree-days during the month of September, with most of the degree-days accumulated in the 1st two weeks of the month. Seasonal total degree day accumulations for April and early May planting dates improved slightly yet remain at near yearly lows when compared to the 13-year average (90 to 89% of normal). This equals about 225 degree-days (about 12 calendar days) behind normal. Degree-days (average for NW Iowa) can be accessed at this web site: <http://www.extension.iastate.edu/carroll/crops/degree-days-2004.htm>

Corn development Most corn in the area should be denting to full dent with the milk line beginning to progress down the kernel. If you are concerned about the corn crop maturing before frost, consider that it takes about 225 degree-days to go from beginning dent to full dent and another 225 degree-days to go from full dent to physiological maturity (Black layer). As noted previously, September typically yields 380 degree-days for the month. Northwest IA normally receives its first (killing) frost in the first two weeks of October. You may want to read this article (<http://www.extension.umn.edu/cropenews/2004/04MNCN28.htm>) from Dr. Dale Hicks (Corn Specialist with the University of MN) which touches on the concerns that even if an early frost does not occur, the extended

	2004	2003	2002	13-Yr Ave
August 30 - 05	150	100	151	127
Forecasted Sept 6 - 12	76	132	146	110



cool temperatures may cause early black layer before full maturity is reached, ultimately resulting in low test weights.

“The shorter days give us less solar radiation per day and the night low temperatures will continue to get lower in September. The end result is the plant has less photosynthetic activity (less dry matter is accumulating). The lowered photosynthetic activity and the low night temperatures are causing the plant to shut down and the dry matter growth curve is beginning to flatten. This basically is “prematurely” killing the plant. The black layer in the tip of the kernel will form which will end any further increase in grain yield. This probably will happen near the end of September. For corn that has now reached the dough stage, the test weights should be above”

-Dr. Dale Hicks, University of MN Corn Specialist

Read up on more very useful information from the University of MN on subjects such as early frost in corn, drying low test weight corn and other great topics (<http://www.extension.umn.edu/cropenews/index.html>)

See also *the Bulletin* from the University of IL on the topic of cool temperature and soybean yield potential: <http://www.ipm.uiuc.edu/bulletin/article.php?issueNumber=22&issueYear=2004&articleNumber=6>

Prepare storage facilities for grain: <http://agebb.missouri.edu/storage/pests/insect.htm>

Soybean Development: Many soybean fields are reaching physiological maturity across the region, noted by the changing leaf color and dropping of leaves.

This would be a good time to go out and estimate soybean yield potential.

- ✓ Estimate the number of plants per acre (measure an area 1/1000 of an acre and count the number of plants within the marked area.)
- ✓ Count the number of pods on ten randomly selected plants within the marked area and calculate the average number of pods/plant
- ✓ Calculate pods per acre by multiplying plants/acre by pods/plant
- ✓ Calculate seeds per acre by multiplying pods per acre by an estimate of 2.5 seeds/pod
- ✓ Calculate pounds per acre by dividing seeds/acre by an estimate of 2900 seeds/pound
- ✓ Estimate yield by dividing pounds/acre by 60 lbs. per bushel.

The formula is: $[(\text{plants/acre}) \times (\text{pods/plant}) \times (2.5 \text{ seeds/pod})] / (2900 \times 60) = \text{Estimated Yield bu/acre}$

This formula uses several estimations and therefore may be variable depending on the final number of seeds per pod and seed weight. (Source: Corn and Soybean Field Guide, 1997; Purdue University Coop Extension Service)

More excellent information on timing the last irrigation, low temperature effects on corn and soybean development, persistence of soybean aphid, silage production and fall alfalfa fertility recommendations can be obtained from the most recent University of NE CropWatch newsletter: <http://cropwatch.unl.edu/>

Fertility Management

Now would be a good time to begin planning to perform the fall corn stalk nitrate test. Read up on that procedure here: http://www.extension.iastate.edu/carroll/crops/field_feedlot_september_2004.htm Be sure to wait until black layer has occurred before taking samples.

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Serving northwest Iowa

IOWA STATE UNIVERSITY
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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.

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