

Extension Crop Update

This newsletter, and previous issues from recent years, can be found on-line at:

<http://www.extension.iastate.edu/plymouth/info/cropupdate.htm>

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Corn Emergence: Today I was out digging in cornfields. I found one that even had emerging corn in it! This one was planted in mid-April, on tilled soil that has some sand in it, and is located in a very protected area. If any site is set for early emergence it is this one, so I watch it each year – it will be the first one up! I also went to a field that was planted either that day or the next, and found seeds in this field with about a half inch shoot. This field, too, was tilled, but did not have the protection, or sand content of the first field I mentioned. These seeds have been in the ground almost 3 weeks, but all seeds I dug still looked healthy. The third field I looked at was a no-till field planted the 20th. Seed development was almost identical to the second field I visited, although it was planted about 5 days later.

Most agronomists estimate that it takes about 125 Growing Degree Days (GDD's) to get corn to emerge (for an explanation of GDD's, see the Bob Nielson, Purdue University, article here: <http://www.agry.purdue.edu/ext/corn/news/timeless/HeatUnits.html>). However, when soil temperatures are cold and the night time temperatures are below the 50 degree bottom temperature used for corn GDD calculations, emergence will likely be slower. It is sometimes estimated that it might take 150 to 175 GDD's for emergence in a cooler spring. I looked up the daily highs and lows from April 15 until May 3 at the weather station near Calumet in O'Brien County, and during that time we have totaled 122 GDD's so far. Less than 30 accumulated that first week, which is why development is almost the same between those two planting dates I compared earlier.

In Nielson's article titled "Requirements for Uniform Germination and Emergence of Corn," found here: <http://www.agry.purdue.edu/ext/corn/news/timeless/GermEmergReq.html>, he noted that it also should take about 127 soil temperature-based GDD's to emerge. I looked up the soil temperature history at the Sutherland Research Farm since April 15, and if I calculated it right, we have only accumulated 70 through from 4/15 to 5/03. It seems to me that this is probably a better predictor for emergence at this time of year. If that is true, it will likely be late this week before a lot of the early planted fields begin emerging, assuming the forecasts are relatively accurate.

My concerns? Good uniform stands are critical for excellent yields. My observations would say that corn plants which take that long to emerge might not have as much vigor as plants that emerge quicker in warmer soils. So, I would evaluate fields closely to ensure that no crusts are forming. We have not had hard rains in most places, but if we did, and we had a fine textured surface from tillage, and then got hot windy days – crusts could form. If we want to try and rotary hoe to prevent problems, we need to do that before the crust is uniformly hard to a significant depth. Hoes work best before we totally dry out that area. So, if soil settled in over the seed, and the forecast is warm and windy, maybe a rotary hoe decision might be smart if plants

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aren't emerged yet. We had some neighborhoods that really benefitted last year – and the early hoeing certainly did a better job than the late hoeing. Either way – a good gentle rain can cure many of those problems. I only wish I knew how to control that!

If stands are not exactly what you want and you are thinking about a replant situation, ISU Extension's Corn Page has a link to the "Replant Checklist," which can be really helpful making any such decision. Find it here: <http://www.agronext.iastate.edu/corn/production/management/planting/replanting.html>.

Alfalfa Winter Kill – thoughts for Next Year – It seems that wherever we blew the snow from alfalfa fields this past winter, the alfalfa was killed. I continue to get calls on this problem. I've talked about making decisions on this problem the last couple of newsletters, but this time I want to review how to reduce this risk for the future. Don Undersander from the U. of Wisconsin lists the following factors:

- **Stand age.** Older stands are more likely to winterkill than younger ones.
- **Variety.** Varieties with superior winterhardiness ratings and a high disease resistance index are less likely to experience winter injury.
- **Soil fertility.** Stands with high fertility, particularly potassium, are less likely to experience winter injury than those with low fertility.
- **Soil moisture.** Alfalfa grown on well-drained soils is less prone to winter injury.
- **Fall soil moisture status.** As dehydration is the primary means of tolerating freezing temperatures, stands that go into winter with low soil moisture are better able to lose moisture and are less likely to winter kill.
- **Cutting management.** Both harvest frequency and timing of fall cutting affect alfalfa winterhardiness. The shorter the interval between cuttings, the greater is the risk of winter injury. Stands in which a last cutting is taken between September 1 and October 15 are at greater risk, as plants are unable to replenish root carbohydrate reserves before winter.

Snow cover. Snow is an excellent insulator. Temperature fluctuations are much less under snow cover. As little as 4 inches of snow can result in a 10 degree F difference in soil temperatures. Stands which have not been cut after September 1 or which have at least 6 inches of stubble left will be able to retain more snow cover and be less susceptible to winter injury.

Think about these issues when you make you management decisions for your alfalfa fields – particularly those late cutting decisions!

Control Musk Thistles in Pasture Now! Fall and spring are the best time of year to control the biennial musk and bull thistles while they are still in the rosette stage. Once that flower stalk elongates we do a really poor job of controlling them with herbicides. For more discussion on this topic, check out this University of Nebraska newsletter article: http://cropwatch.unl.edu/archives/2009/crop9/musk_thistle.htm. One cautionary comment - Tordon is noted in this article as a very good herbicide choice for managing these thistles. But, Tordon (and any other product containing picloram) can carry over in the hay, and fields have shown injury in soybeans the next year where the manure from cattle fed this hay was applied.

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