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# Higher Corn Yields with Better Emergence

by Paul Hermans, CCA-ON

If you have children in school you will realize the importance of report cards and grades. With the corn planting season finished, now is the time to get your own report card on your corn emergence.

To indicate whether you graded well on corn emergence, walk your fields and take note of the number of plants that emerged compared to the number you planted. For 30 inch rows, simply take a tape measure and measure out 17 feet 5 inches. Count the number of plants in that length and multiply by 1000 and you will have your population in plants per acre. For example, a count of 33 would equal 33,000 plants per acre. Compare this number to the number you planted (seeding rate) to get a percentage.

To get top grades you have to have 95% or better emergence. A 90-95% emergence rate is considered average. For stands below 90% determine the cause of the lower stands whether it is planter issues, insect pressure or other environmental stresses to make adjustments for next season.

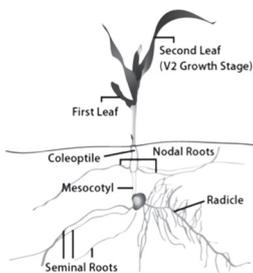
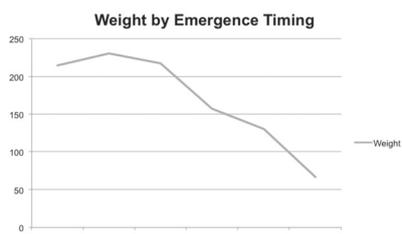
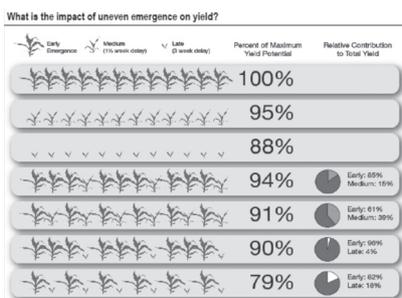
Population numbers only tell one story though!

**Figure 1 (top graphic)** describes yield losses based on even emergence. Studies were conducted at three different planting intervals and yields were taken based on differences in emergence timing.

Late emerging plants had high yield losses, especially when combined with plants that are two or more leaves ahead. There was a 79% reduction in yield when every other plant in the study was at a different leaf stage. Late emerging plants sense competition from neighboring plants that are farther advanced which results in smaller plant and cob size formation.

Another study conducted in 2015, by Troy Deutmeyer, DuPont Pioneer agronomist in the Central Corn Belt, studied differences in timing of corn emergence in grower's fields, Figure 2. Once emergence started, corn plants that emerged

within a twelve-hour period were flagged and tagged with an emergence date. Every plant that emerged at intervals of twelve hours after the initial plant emergence received a different mark. At fall harvest time, weights of the cobs were compared to analyze cob differences due to differences in emergence times.



**Figure 2 (middle graphic)** (Y-Axis Weight Cobs in grams-0-250 and X -Axis Days Difference In Emergence In Days-Troy Deutmeyer Field Agronomist NE IA)

The yield results are shown in the chart. There was no big surprise here; later emerging plants had lower cob weight, which meant lower grain yields.

If you are experiencing corn plants that are 1-2 leaves behind their neighbours, dig up the plants and examine planting depth. In most cases differences for uneven plant emergence is due to variation in planting depth.

A simple way to assess the planting depth is to measure the mesocotyl from the seed to the crown (growing point) and add of an inch to get your initial planter depth setting. See **Figure 3 (bottom graphic)**.

This will give you a rough estimate of your corn planting depth at the time of planting. In most cases differences in emergence are caused by shallow planting.

The trick to avoid shallow planting is having a well maintained planter while keeping an eye on corn planting depth on a field by field basis. For different field conditions, optimum planting depths in the two inch range is less risky than shallower planting depths.

Taking a few minutes to assess your plant stands both from a population standpoint as well as an emergence standpoint, will give you your planting "grade".

Here's hoping your report on the 2016 planting season was an A+!

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