

# FIELD CROPS NEWSLETTER

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## Determining Corn Yields in the Field

The most popular pre-harvest yield prediction method is probably the **Yield Component Method (YCM)**, though there are many others that exist. I prefer using the YC Method because it can be used as early as the milk stage (R3) of kernel development; just keep in mind early estimates can still be risky due to unforeseen stresses that can cause kernel abortion.

The YC Method takes into account the number of ears per acre, number of kernel rows per ear, number of kernels per row, and weight per kernel. While the first three components are easily determined in the field, the weight per kernel is a little more difficult to determine due to variability in growing conditions during grain fill and seed genetics. Many people have used the “fudge factor” of 90, which stands for 90,000 kernels per 56-lb bushel.

Let’s walk through these 5 steps and see if we can find some record breaking yields in Onslow County! ☺

- 1.) Determine actual plant population. Measure off a length of row equal to  $1/1000^{\text{th}}$  acre. For 30-inch rows (2.5ft) rows, it equals 17.4 ft,

Ex. For other row spacings, divide 43,560 by the row spacing in feet, and then divide that result by 1,000.  
( $43,560/2.5=17,424/1000 = 17.4 \text{ ft.}$ )

3.) For every fifth ear of corn, record the number of kernels rows per ear and the number of kernels per row. Then multiply each ear's row number by its number of kernels per row to calculate the total number of kernels per ear.

Ex. I collected 5 ears from the 17.4 ft row space. I counted the rows and kernels per row for each ear. 16 rows and 30 kernels on one row.  $16 \times 30 = 480$  kernels. Do the same for the other 4 ears.

4.) Calculate the average number of kernels per ear by adding the totals for all the sampled ears and dividing by the number of ears collected.

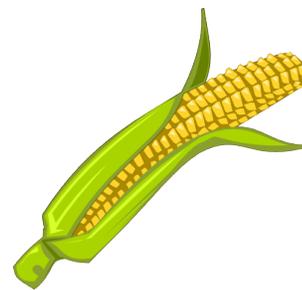
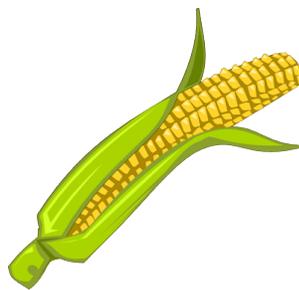
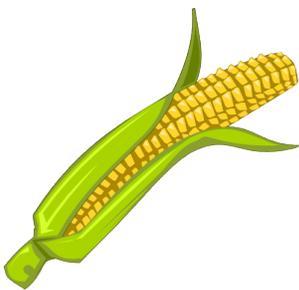
Ex. For the five sample ears with 480, 500, 450, 600, and 525 kernels per ear, the average would be  $(480 + 500 + 450 + 600 + 525)$  divided by  $5 = 511$ .

5.) Estimate the yield for each site by multiplying the ear number (step 2) by the average number of kernels per ear (step 4) and then dividing by a kernel weight "fudge factor" of 85 or 90.

Ex. From step 2, you counted 30 harvestable ears (this is your plant population). Take that number and multiply it by the average kernels per ear, which was 511 (step 4). The estimated range in yield for that sampled site would be  $(30 \times 511)$  divided by  $85 = 180$ , or divided by  $90 = 170$ .

Keep in mind that using a method to determine pre-harvested corn is only an estimate! As Dr. Heiniger would say "the jury is still out until the combine gets in the field"! ;-)

*Adapted from the Purdue University Dept of Agronomy article "Estimating Corn Grain Yield Prior to Harvest" by R.L. Nielsen. September 2015.*



# Time to Scout Your Soybeans!

## SCOUTING

It is that time of year to begin paying attention to soybeans for yield robbing insects. Fields should be checked weekly from July 25 to mid-September. Place a high priority on checking fields that are flowering from the end of July through August. Corn earworm moths are attracted to blooming fields and will lay more eggs in open-canopied beans on high spots and lighter soil areas. From mid-August to mid-September, pay special attention to any fields near cotton because these areas often have the highest looper populations. Stink bugs can be difficult to scout for because they are not found in all areas of the field. Stink bug damage can occur from pod set to when pods begin to yellow, but greatest injury occurs during early pod-fill.

The most important consideration for any field scouting program is to get a representative sample. If you can't scout all fields, at least sample representative varieties and planting dates each week. Don't treat all fields based on what is found in one variety or maturity group. Also, be sure to walk out into your fields to get a better idea of what pests are there; do not rely just on what is found along the border of your fields.

## INSECT IDENTIFICATION

The four most common caterpillars found in soybeans are the corn earworm, green cloverworm, velvetbean caterpillar, and soybean looper. Since color and size are quite variable, the field key below can be helpful in pointing out distinguishing characteristics.

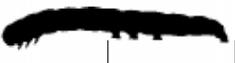
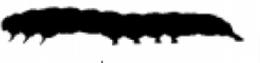
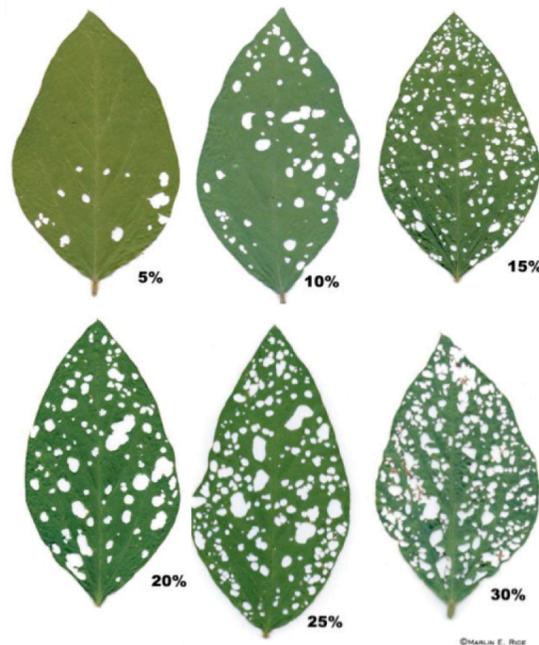
<u>Caterpillar/Behavior</u>	<u>Count the prolegs to identify species.</u> No spines on Propodeum
Corn earworm. Curls in a "C" shape or does not respond when disturbed.	 Prolegs: 5 pairs.
Green cloverworm. Wiggles vigorously when disturbed.	 Prolegs: 4 pairs.
Soybean looper. Does not respond when disturbed.	 Prolegs: 3 pairs.
Velvetbean caterpillar. Wiggles vigorously when disturbed.	 Prolegs: 5 pairs.

Figure 4. To identify caterpillars correctly, count the prolegs and observe behavior.

## TREATMENT THRESHOLDS

Treatment threshold (defined as a point for which you can treat before economic damage occurs) for foliage feeding insects in soybeans are relatively easy to determine. The threshold for foliage feeding pests is 30% loss throughout the canopy during the vegetative stages up to two weeks prior to flowering and 15% foliage loss throughout the canopy two weeks prior to flowering through the reproductive stages up to R6-R7.

One difficulty in accessing this threshold comes from assessing the foliage loss throughout the canopy. Foliage feeding insects rarely feed evenly in the upper and lower parts of the plant. It is also very difficult to not over-assess the percent of tissue defoliated, which the figure below illustrates well. Use this as a guide when applying the threshold.



Use the table below to help determine economic thresholds for pod-feeding pests. NCSU Entomologist, Dominic Reisig, has developed threshold calculators for stink bugs and corn earworms based on control costs and price of soybeans; both can play a role in determining economic thresholds. The link to the calculators is:

<https://soybeans.ces.ncsu.edu/thresholds/> Please feel free to call me and I will help walk you through, or determine, a threshold specific to your fields.

Also, be sure to check multiple spots in the field when scouting your field, in order to get a good representative sample.

Treatment guidelines for soybean insects sampled with a sweep net			
Pest		Number per 15 sweeps	Comments
Stink bug		5	
Corn earworm*		1 - 2	Varies depending on soybean control costs and price of beans. Threshold does not change for beans over \$10.

## Corn and Soybean Yield Contests

Go ahead and pick out one acre of your best corn and/or three acres of your best soybeans, then give me a call...Let's get some recognition in Onslow County for a job well done! While we do have county level yield contests, there is also a State Yield Contest!

If you've got a little time, let's show off what you've done! Who doesn't want a little positive recognition...and a little extra prize MONEY!!! ☺ Give me a call if you have any questions, or to set up a time for me to come out and measure off your fields.

## Soil and Water Conservation Cost Share Programs

The Onslow County Soil and Water Conservation District has a variety of cost share programs available. Typically 75% cost share assistance is provided to install best management practices on agricultural land, such as:

- Cover crops
- Cropland Conversion
- Livestock feeding areas
- Livestock exclusion areas
- Agricultural wells

Application acceptance will begin September 8<sup>th</sup> through December 31<sup>st</sup>. If you would like more information on these or other practices, feel free to contact the Onslow County Soil and Water Conservation office at (910) 937-1306.

# UPCOMING EVENTS

August 29<sup>th</sup>

Pesticide Re-Certification

ALL Categories – 2 hrs

A B G H I K L M N O T D X

6:00pm – 8:00pm

Onslow County Extension Office



November TBD

Pesticide Disposal Day

10:00am – 2:00pm

Onslow County Extension Office

Please call ahead if you have 55 gallon containers