

### Assessing Corn and Soybean Stands

- Early assessment of corn and soybean stands can help identify potential crop concerns early in the season.
- Once seedlings emerge, stand counts, and visual inspection of the plants can help to identify problems from planting, insects, and/or diseases.
- Three common methods for taking stand counts are the 1/1000<sup>th</sup> acre method, the wheel method, and the hoop method.

#### General Suggestions

When evaluating a corn or soybean stand, only count plants that have a good chance of survival. Sample at several locations in the field and obtain an average across the sample locations to get a better assessment of the population. Taking more samples will improve the accuracy of the estimate. Keep in mind the differences in assessing corn and soybean stands. For example, while corn plant populations are a critical component of yield, soybean plants are better able to compensate for low plant populations.

#### 1/1000<sup>th</sup> Acre Method

Count the number of plants in a length of row equal to 1/1000<sup>th</sup> of an acre based on row width (Table 1). Multiply the number of plants by 1000 to get plants per acre.

#### Wheel Method

Count 150 plants and measure the distance from the first plant to the last plant with a measuring wheel. Divide the appropriate factor in Table 2 by the number of feet traveled to determine plant population. For example, if you walked 94 feet while counting 150 plants in 30-inch rows, the population is  $2,613,600 \div 94 = 27,804$  plants per acre.

**Table 1. Stand count evaluation for 1/1000<sup>th</sup> acre based on row width and number of plants in a given row length.**

Row width (inches)	Row Length to equal 1/1000 <sup>th</sup> of an acre (feet, inches)
7.5	69' 8"
15	34' 10"
20	26' 2"
22	23' 9"
30	17' 5"
36	14' 6"
38	13' 9"
40	13' 1"

**Table 2. Stand count evaluation factors for measuring the distance when counting 150 plants.**

Row width (inches)	Factor
20	3,920,400
30	2,613,600
36	2,178,000
38	2,063,350

# Assessing Corn and Soybean Stands

## Hoop Method

This method should be used for drilled soybeans. Measure the diameter of a hoop, toss it into the field, and count the number of plants inside the hoop. Multiply the average number of plants from the samples taken by the appropriate factor listed in Table 3 to get the number of plants per acre. For example, a hoop with a diameter of 28 ¼ inches can be multiplied by 10,000 to obtain the number of plants per acre. This size of hoop can be made by cutting a tube to 88 ¾ inches and joining it to form a circle.

**Table 3. Stand count evaluation factors, by hoop diameter, for determining soybean plant populations using the hoop method.**

Diameter of Hoop (inches)	Factor
18	24,662
21	18,119
24	13,872
27	10,961
28.25	10,000
30	8,878
33	7,337
36	6,165

## Try to Determine the Cause of a Poor Stand

There are many things that can result in a poor stand. Consider the entire field when assessing the stand.

- Look for patterns over time. Was the same row always worse? Was the stand reduced for the rows that were planted over the windrow from the combine that harvested the previous crop? Were there differences across the field in compaction, herbicide application, fertilizer placement, or other factors?
- Weather conditions can influence the stand between planting and emergence. Was it too cold, too wet, or too dry after planting?
- Insects (e.g., wireworm, white grub, black cutworm) or other pests such as millipedes and slugs can reduce the quality of a stand. So can seedling diseases, such as phytophthora and pythium.
- Check the planting depth of the corn to determine if it was planted too deep or too shallow, both of which can affect emergence. Finally, look for any other planter-related issues that may have caused stand losses.

## Is a Replant Needed?

Several factors should be considered when assessing a corn or soybean stand for potential replanting, including if the field is irrigated or dryland, the current plant population, plant spacing, and the potential date any replanting.

## Sources

Gerber, K. 2021. 2023 corn & soybean field guide. Purdue University.

Roth, R. (Ed.) 2023. Georgia Corn Production Guide. University of Georgia Extension. <https://grains.caes.uga.edu/content/dam/caes-subsite/grains/docs/corn/2023-Corn-Production-Guide.pdf>

Wiebold, W. and Massey, R. 2022, revised. Corn and soybean replant decisions. University of Missouri Extension. <https://extension.missouri.edu/publications/g4091>

## Legal Statements

### ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.

Performance may vary, from location to location and from year to year, as local growing, soil and environmental conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on their growing environment.

The recommendations in this material are based upon trial observations and feedback received from a limited number of growers and growing environments. These recommendations should be considered as one reference point and should not be substituted for the professional opinion of agronomists, entomologists or other relevant experts evaluating specific conditions.

Bayer and Bayer Cross are registered trademarks of Bayer Group. All other trademarks are the property of their respective owners. ©2023 Bayer Group. All rights reserved. 1114\_96568.