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JACK LARSON SEEDS

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We thought it would be helpful to send out a quick newsletter that helps answer some of the questions that we have been getting. The latest "Agronomic Spotlight" from Monsanto covered a lot of the concerns that are going around regarding the status of some of the corn that has been planted. Most of the problems that we are seeing are due to the weather that we have experienced this spring (drastic changes in temperature, moisture, etc..) The attached article covers most of the symptoms that we have seen. As you will see, most of the problems that we are seeing in the early stages of corn development will not necessarily result in yield loss.

We also included a reference for evaluating your stand in the field. It should be a great tool for those of you that are out scouting your fields. With that said, if you would like us to come take a look at any areas of concern, do not hesitate to give us a call.

Jack, Johnny, & Steve

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AGRONOMIC Spotlight

Technology Development by MONSANTO

Assessing Corn and Soybean Stands

As corn and soybeans emerge, evaluating the stand is important to identify problems from planting, insects, or disease. Evaluating your stands early can help you identify concerns while there may be time to remedy them.

Three common methods for taking stand counts are outlined below. The 1/1000th acre method is widely used for corn and wide-row soybeans. A more accurate method is the wheel method, which counts 150 plants and measures the distance from start to finish with a measuring wheel. The hoop method is often used for drilled beans.

When evaluating a corn or soybean stand, only count plants that have a good chance of survival. Keep in mind that while corn plant populations are a critical component of yield, soybean plants are better able to compensate for low plant populations.

Sources: Illinois Agronomy Handbook. 23rd Edition. Pg. 31.

Purdue Corn & Soybean Field Guide. 2007.

1/1000th Acre Method

Count the number of plants in a length of row equal to 1/1000th of an acre based on row width (Table 1). Multiply the number of plants by 1,000 to get plants per acre. Repeat the process in several locations in the field.

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

Row Width (inches)	Row Length 1/1,000th acre (feet, inches)
7	74' 8"
15	34' 10"
20	26' 2"
22	23' 9"
30	17' 5"
36	14' 6"
38	13' 1"

Wheel Method

Count 150 plants and measure the distance from start to finish with a measuring wheel. Divide the number of feet traveled into the appropriate factor in Table 2 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 ÷ 94 = 27,804 plants per acre.

Table 2. Stand count evaluation factors, by row width, 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

Hoop Method

Measure the diameter of the hoop, toss it in the field, and count the number of plants inside the hoop. Do this in at least 5 locations in the field. Multiply the average number of plants by the appropriate factor listed in Table 3 to get the number of plants per acre. Notice that having a diameter of 28 ¼" allows you to simply multiply by 10,000 to obtain the number of plants per acre. This size of hoop can be made by cutting anhydrous tubing 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 ¼	10,000
30	8,878
33	7,337
36	6,165

AGRONOMIC Spotlight

Technology Development by MONSANTO ®

Rapid Growth Syndrome

Rapid growth syndrome may be known by many aliases, including buggy whipping, accelerated growth syndrome, roping, wrapped whorls, onion leafing, twisted corn syndrome, and twisted whorls. For this document, we will refer to this phenomenon as rapid growth syndrome (RGS).

Symptomology.

Rapid growth syndrome describes a situation where, in random plants across a cornfield, the uppermost plant leaves are tightly rolled and do not unfurl normally. The last leaf may fail to unfurl, and it may further wrap or twist. Lower leaves are generally not affected, but the whorl at the top of the plant is tightly wrapped and it may bend over at a right angle to the ground.

Within a week, twisted leaves usually unfurl and affected plants resume normal growth. Younger leaves that were trapped inside the whorl may emerge as pale green or yellow because they were shaded for an extended period of time and could not photosynthesize. Within a few weeks, the only evidence that remains of RGS is the crinkled appearance of the most tightly wrapped leaves. Rapid growth syndrome most often appears between the late V5 and early V6 growth stages. The appearance of RGS in any given year is not uncommon.

Possible Causes.

The physiology of rapid growth syndrome is not well understood, but it may have something to do with the elasticity (or lack of) in the cells. Rapid growth syndrome has been observed in previous years when cool, cloudy weather contributes to initially slow corn growth, then is followed by a sharp transition to warm, sunny, humid weather favorable for rapid corn growth. When corn plants are exposed to this rapid change in improved growing conditions, they may grow too fast, resulting in RGS.

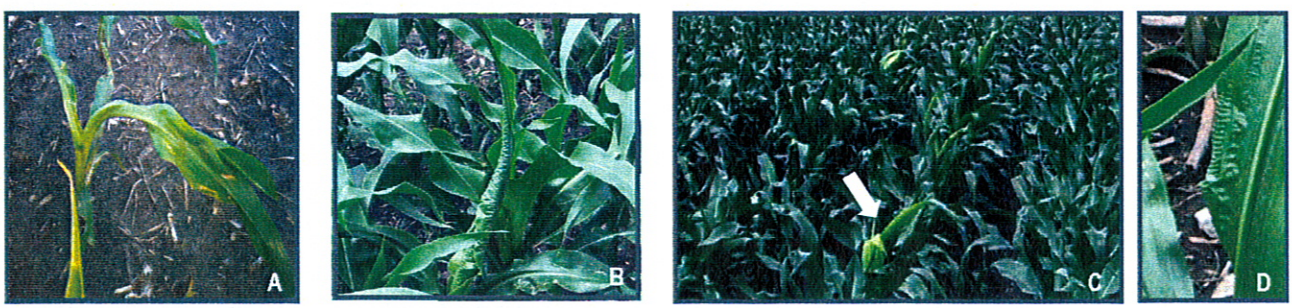
Symptomology Resembling RGS.

Herbicide Injury. Rapid growth syndrome may be confused with herbicide injury; however, occurrence of RGS is not related to herbicide application. Herbicide injury usually occurs more widespread across the field or in a spray pattern. Herbicide injury resulting in twisted whorls may occur in young plants when cell growth inhibitor or growth regulator herbicides such as dicamba or 2,4-D are applied pre-plant or pre-emergence, and emerging seedlings take up the herbicide through the coleoptile.

In older plants, late application of growth regulators can also cause twisted whorls to develop when a significant amount of herbicide is taken up by the leaves and whorl. This usually occurs in areas of spray overlap, which may receive an extra shot or two of herbicide.

Hail Damage. Injury from hail can also cause corn whorls to twist and become damaged. Additionally, wind damage might exaggerate or mimic hail injury. Although from the road, bent plants may look like they are suffering from severe weather damage, closer inspection will reveal signs of RGS. Severe weather may cause additional stress to plants by adding minor crop injury.

Biotic Disease or Genetic Stripe. Other types of symptoms that can mimic RGS are biotic disease and genetic stripe. However, injuries caused as a result of twisted whorls may increase the likelihood of smut infections. The yellow leaves resulting from RGS are not related to plant genetics. After some exposure to the sun, pale green or yellowed leaves will turn a normal, dark green color.



Twisted whorls (A, B), yellow tops seen shortly after corn unwraps (C), and crinkled leaves (D).

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Rapid Growth Syndrome

Yield Impacts.

Periods of twisted growth that are caused by weather usually do not affect yield potential. Plants affected by RGS may cause initial concern, but should grow out of most symptoms. By the time corn height reaches chest high, the only evidence of RGS may be a crinkled appearance on the most-affected leaves. For more information on rapid growth syndrome, or any other question concerning your crop, contact your local Monsanto agronomist.

"Within a week, twisted leaves usually unfurl and affected plants resume normal growth. Within a few weeks, the only evidence that remains of twisted whorls is the crinkled appearance of the most tightly wrapped leaves."

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