

Soybean Green Stem Syndrome Found In Many Soybean Fields



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Many soybean fields around the Commonwealth have green stems and brown pods. The seeds are mature, but the stems are not. This occurrence is commonly called “green stem syndrome”. The green stem syndrome is a nightmare to harvest as the combine tries to handle dried plant material and wet plant material at the same time. Seed moistures from plants with green stem and “normal” plants can be different, further complicating harvest. At times, combines can gum up from the green tissue.

Green stem syndrome occurs when the soybean plant does not set enough pods to match the supply of sugar and nitrogen coming from the leaves. Stopping seed growth early also can be a factor. Sugar and nitrogen made in the leaves travel through the stems to the developing seed. When the supply exceeds the needs of the seed (i.e. not enough pods), the sugar and nitrogen accumulates in the stems and the stems will stay green until a hard frost or freeze.

Common causes of green stem syndrome are stink bugs (and other pod-feeding insects), viruses and water stress during flowering and pod set. The severe hot and dry weather this summer followed by the gentle rains from the remnants of Hurricane Ike followed by drier and cooler weather certainly could create confusion in the source-to-sink relationship within the soybean plant. That confusion resulted in more source (sugar and nitrogen) than sink (pods) which led to green stem syndrome. Affected plants also commonly have considerable levels of shriveled and moldy seed, which is likely a direct result of seed maturing earlier than the rest of the plant. Increased seed and quality problems can be anticipated in many fields with green stem syndrome. The effect is very similar

to what you might see with delayed harvest.

Green stems may not dry down until a hard frost or freeze. The problems are complicated further this season since some pods are beginning to open early and drop seeds on the ground. Pod shatter is common in drought-stress environments. In fields where both pod shattering and green stem are prevalent, the producer has few options.

The soybean seeds need harvested sooner rather than later. One option is to harvest and go a lot slower in order to allow the combine to handle both wet and dry plant material. In some situations, another option to consider is to spray a harvest aid such as paraquat or glyphosate. Since paraquat defoliates or desiccates foliage much quicker than glyphosate, it would be the better option in this case. Immature soybeans will be injured; therefore, soybean seed should be fully developed before application. Consult the paraquat label for specific guidelines and precautions. Spraying a pre-harvest chemical adds to the logistics of harvest and paraquat will require a 15-day waiting period following application before harvest. The most likely strategy is to employ both methods if possible. Have one crew go to the fields with high levels of green stem and start spraying while another crew begins harvesting soybeans.

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Figure 1. Soybean with Green Stem Syndrome.