



# REPORT

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## Green Stem in Soybeans

Soybean producers across the Midwest continue to face the challenge during harvest of a phenomenon called “green stem.” Soybeans expressing “green stem” symptoms remain green after other plants in the field or plants in adjacent fields have turned brown, dropped their leaves and matured normally. Green stem slows harvest, increases fuel consumption of even the best combine, and can reduce yield.

Researchers believe that there are at least three causes for the green stem symptom in soybeans.

“Genetics appear to be the main cause of green stem and can cause the most headaches for producers at harvest,” says Dr. Laura Sweets, plant pathologist at the University of Missouri.

Researchers from the University of Illinois have been evaluating entries in the state yield trial for symptoms of green stem for the past three years. They reported significant differences among varieties for the incidence of green stem in each of the three years of the study. ELISA tests on stem material subsequently showed the presence of no disease.

However, soybean producers can manage this problem with a trip to their local seed test plot. A good

set of eyes is the soybean producer’s best tool for managing this problem; relying on yield data alone simply isn’t enough. Timing is essential though, and you must be there before the first killing frost.

Tobacco ringspot virus and the green stink bug can also cause green stem. Symptomology of these green-stemmed plants is much different than those influenced by genetics, however.

Isolated green-stemmed plants or those that are in irregular shaped areas or patches are likely the result of something other than genetics. Yield loss is also more likely to occur in these areas. Virus infected plants may produce large, immature beans often referred to as “butter beans”.

“Other than changing soybean varieties, there isn’t much soybean producers can do to manage this problem. Recording observations on symptoms that developed, variety planted, management practices and environmental conditions in the field over the season may help determine the cause of the problem or factors contributing to the problem. Monitoring fields next season, especially for bean leaf beetle, which vectors bean pod mottle virus, and for stink bugs, will be important,” concludes Sweets.

POSSIBLE CAUSE	SYMPTOMS
<b>Bean pod mottle or tobacco ringspot virus</b>	Majority of field matures normally. Scattered plants may be green or leaves may have dropped but stem is still green.
<b>Green stink bug</b>	Irregular shaped areas or patches in field remain green with the rest of the field maturing normally. Plants within green areas tend to have green leaves, petioles, and stems. Plants may have few pods or may have pods at most nodes, but pods are small, dried and contain few if any seed.
<b>Soybean variety genetically prone to green stem at harvest</b>	Stems remain green longer than anticipated throughout entire field. Pods form, fill and dry normally.