Effect of Gibberellic Acid on NC Roy Soybean
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Introduction

Research is being conducted at the Beaumont Center to investigate the effect of gibberellic acid (GA) applied to main crop rice to increase ratoon yield. There are some indications that rice ratoon yields are increased by the application of GA to the main crop at heading. In this experiment, GA was applied to NC Roy soybean at growth stages ranging from V3 (second trifoliate) to R6 (full seed) to investigate any physiological effects which might occur, possibly increasing pod and plant height and improving yield. NC Roy has consistently proven to be one of the highest yielding entries in other tests conducted at the Center. However, plants are typically short (determinate) with pods very close to the ground.

Discussion

GA was applied at 24 g(AI)/acre to designated plots with a hand-held, CO2-pressurized spray boom at 10 gpa. Treatments were applied at V3, V8, R2 (full bloom) and R6 (full seed) growth stages. Plant height (to uppermost node) and pod height (to second node, first trifoliate) measurements were taken in the untreated and V3 treatment 2 weeks after application. Number of nodes/plant was also recorded. These same data were again recorded for the untreated, V3 treatment (5 wks after application) and V8 treatment (2 wks after application). These initial plant measurements were showing no differences among treatments. However, soon after receiving GA, plants exhibited a brief period of stem elongation but this did not persist. Plant measurements were discontinued. The two middle rows of each plot were harvested with an Almaco SPC20 small plot combine. There was very little difference in yield among treatments. Seed quality was identical throughout the treatments, including the untreated. Plant measurements and yield data are not presented in this discussion.

The experiment was a trial run. In retrospect, we have discussed applying GA at much earlier growth stages such as emergence, VC (cotyledon leaves) and V1 (first trifoliate). Seed treatment is also being considered. From this initial experiment, it appeared that GA applied at the above growth stages (V3, V8, R2 and R6) did not have a noticeably positive effect on plant or pod height of NC Roy. Compared to the untreated, there was no increase in yield or seed quality.