

AGRONOMY

GROWTH REGULATION WITH LACTOFEN DOES NOT AFFECT YIELD OF IRRIGATED SOYBEANS IN MISSISSIPPI

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THE RESULTS OF THIS STUDY SUGGEST THAT FOR HIGH-YIELDING, IRRIGATED SOYBEAN IN MISSISSIPPI, APPLICATION OF LACTOFEN FOR GROWTH REGULATION IS NOT NECESSARY.

Soybean producers in Mississippi have the ability to produce very high yields (>80 bu/ac) under the Early Soybean Production System largely due to a warm growing season and the availability of ample supplies of irrigation water. The growing conditions and irrigation associated with high-yielding ESPS soybean results in soybean that have the ability to grow very tall lodge, potentially decreasing yield. That is why some soybean producers have considered using the herbicide Cobra (lactofen) to regulate soybean growth. Although lactofen is registered for use in soybean, application results in damage to the leaves and stems which can limit vegetative growth and lodging. It has also been suggested that lactofen can increase total node numbers in soybean by damaging the growing point, stimulating increased lateral branching and potentially increasing soybean yield. The purpose of this study was to determine the effect of lactofen on soybean growth characteristics and yield for furrow irrigated soybean in Mississippi.

Field studies were conducted during the 2013 and 2014 growing seasons at the Mississippi State University Delta Research and Extension Center in Ston-
ville, MS. Soybean were planted on April 15, May 1,

May 15, and June 1, in order to determine if growth regulation with lactofen varied by planting date. Planting dates were split between nontreated soybean, soybean that were sprayed with crop oil concentrate, and soybean that were treated with a 12 ounce per acre rate of lactofen plus 1% v/v COC. Visual estimates of soybean injury were documented 7 and 14 d after treatment (DAT) and stunting was evaluated at 21 and 28 DAT. Light interception measurements were also taken at 21 and 28 DAT. Plant height, total node number, lodging and yield were measured at harvest.

Lactofen application caused yellowing, bronzing, and necrosis on the soybean leaves and stems. Injury was visible 7 day after application but the soybean plants recovered by 14 DAT. Slight stunting was observed for lactofen treated soybean at 28 DAT and plant height was reduced by 11%. Soybean planted June 1 were significantly taller than the earlier planting dates. However, lodging was not observed for any treatments or planting dates meaning that plant height did not affect yield in this study. There were no differences in light interception or node number at 28 DAT, but the May 15 and June 1 planting dates did



*Foliar soybean injury
from lactofen*

have approximately 2 more nodes per plant than the earlier planting dates.

Despite some differences in plant characteristics between nontreated and soybean treated with lactofen, no yield differences were observed. Averaged across

the two years of the study soybean yield averaged approximately 100 bu/ac. The results of this study suggest that for high-yielding, irrigated soybean in Mississippi, application of lactofen for growth regulation is not necessary.