

**BUCTRIL AND MSMA COMBINATIONS FOR  
SICKLEPOD (*SENNA OBTUSIFOLIA*)  
MANAGEMENT IN BXN COTTON**  
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**Abstract**

Three field experiments were conducted to compare the growth of sicklepod, *Senna obtusifolia* (L.) Irwin and Barnaby and the response of BXN 47 cotton to EPOST treatments of MSMA alone, Buctril alone and in combination. The objective was to identify treatments which would suppress sicklepod and promote a height differential between the cotton and sicklepod. Height measurements were taken over a four week period in order to record the length of time that treatment differences were maintained as well as injury ratings and lint yields of the cotton.

The cotton response studies were conducted at Clayton, NC and Lewiston, NC. The plots received a PPI application of Treflan at 0.75 lb ai/A and Cotoran at 1.5 lb ai/A preemergence. The plots were kept weed free for the duration of the trial. EPOST applications of 0.25, 0.5 and 0.75 lb ai/A Buctril and 0.375 or 0.75 lb ai/A MSMA plus all possible combinations of Buctril plus MSMA were made to cotton at the 1-2 leaf stage. There were three replications per treatment with 10 subsamples per plot.

The sicklepod trial was conducted in a naturally infested field in Goldsboro, NC. The plots received the same EPOST treatments as the cotton trials except Treflan and Cotoran treatments were omitted in order to evaluate the effect of the Buctril and MSMA treatments on sicklepod without confounding influences of other herbicides. After treatment, five subsamples per replicate of cotyledon, one leaf, two leaf and three leaf sicklepod plants per plot were tagged and plant heights were measured until 21 DAT.

There was no cotton stand reduction in response to any treatment. There was no growth retardation in response to any Buctril treatment at either location. There was no growth retardation in response to either rate of MSMA at the Clayton location but there was stunting 7 DAT in response to treatments which included 0.75 lb ai/A of MSMA at Lewiston, NC. At 14 DAT, growth retardation was recorded in response to all treatments containing MSMA at Lewiston. By 21 DAT the symptoms had

disappeared and there were no longer any statistical differences among cotton height in response to any of the treatments. Lint yields for all treatments were statistically equal to the weed free untreated check.

Growth of cotyledon and one leaf sicklepod was markedly slowed by either rate of MSMA alone or in combination with Buctril. Buctril alone did not suppress sicklepod growth. The mean height differential between the sicklepod and the cotton at 14 DAT in plots containing 0.375 or 0.75 lb ai/A MSMA averaged 3 inches and 3.5 inches. By 21 DAT, the differential had increased to 6-7 inches in all treatments containing MSMA. Two leaf sicklepod responded similarly to applications of MSMA alone or MSMA in combination with Buctril at all rates tested. The mean differential between the cotton and two leaf sicklepod at 14 DAT was 3 inches in treatments containing 0.375 or 0.75 lb ai/A MSMA. By 21 DAT the differential increased to 6-7 inches. The 0.5 lb ai/A rate of Buctril in combination with 0.375 lb ai/A MSMA was as effective in suppressing sicklepod growth as 0.75 lb ai/A MSMA by 21 DAT. Treated three leaf sicklepod was noticeably more vigorous than the other stages of sicklepod tested and exhibited more variability. Buctril alone did not significantly suppress three leaf sicklepod. The 0.375 lb ai/A rate of MSMA was not effective in retarding sicklepod growth and 0.75 lb ai/A of MSMA only achieved a 2 inch difference between the height of the cotton and the sicklepod at 14 DAT. At 21 DAT there was a 3 inch height difference between the sicklepod and the cotton in treatments containing 0.375 lb ai/A MSMA and 5 inches in treatments containing 0.75 lb ai/A MSMA.

Treatments containing 0.375 or 0.75 lb ai/A MSMA alone or in combination with Buctril effectively established a height differential between cotton and sicklepod from cotyledon to two leaf stage. The height differential between the cotton and the sicklepod was maintained for 21 DAT and this difference would allow a post directed herbicide application if necessary.