

ABSTRACT

The effects of B9, CCC and TIBA applied to potted soybeans were examined, and both B9 and TIBA were tested on a field scale using varieties which were early maturing (17) and late maturing (41) sown at 3 different times of the year. In the field experiments, the distribution of dry matter and flower production were followed throughout the growing season. B9 and TIBA tended to increase the total dry weight of 17 and reduce it in 41, and in both varieties they enhanced the development of branches and reduced stem height. The effects of TIBA were generally greater than those of B9, and 41 was more sensitive to the growth retardants than 17. Both B9 and TIBA altered the leaflet area: leaflet dry weight ratio compared to control plants. They had no effect on the flowering of 17 but TIBA delayed the peak of flowering in 41, and both growth retardants increased the number of flowers produced in this variety. B9 and TIBA increased the final seed yield of variety 17 sown in November. For the crop sown in March, B9 increased seed yield in 17 and TIBA increased it in 41. Both growth retardants tended to increase the seed yield of 41 when sown in May. Results suggested that B9 and TIBA increased seed yield by altering the balance between vegetative and reproductive growth. Where the growth retardants increased leaf area index, and increased the number of pods set, seed yield was increased. Yield was also increased by the

growth retardants when flowering and pod development were delayed and occurred at a time when leaf area index was increasing, but was decreased where reproductive development occurred when leaf area index was decreasing and reached a value insufficient to support development of the number of pods set.