

CHRISTENSON, D. R., C. E. BRICKER and L. HUBBELL, Crop and Soil Sciences Department, Michigan State University, E. Lansing, MI 48824 and Monitor Sugar Company, 2600 South Euclid Avenue, Bay City, MI 48706. - Yield and quality of sugar beets as affected by applied boron.

Boron has been recommended for sugar beet production in Michigan for over 50 years. Coupled with lower boron concentrations on cropped land than on uncropped land, there have been no observed boron deficiencies on sugar beets in over 30 years. Cultural practices have changed markedly since the last studies were conducted in 1973-1976. The objective of this work was to determine if applied boron is needed for sugar beet production in Michigan. This study was composed of 14 location-year experiments conducted over a period of 4 years. Nine location years combinations measured the interaction of hybrid (Mono-Hy E-4 and ACH 185) and boron rate (0, 2, 4 and 6 lb/acre) on yield and quality. Five location-years were conducted with two rates of boron (0 and 2 lb/acre) on a single hybrid. Boron was applied either in the band with starter fertilizer or was broadcast at planting time by spraying a soluble boron source dissolved in water on the soil surface. Yields were estimated by harvesting approximately 60 feet of row. Percent sugar and clear juice purity were measured on the brei obtained from a sub-sample of roots from each plot. There was not a significant interaction between hybrid and boron rate for any of the parameters measured. Significant treatment effects were associated with a suppression of yield at a 6 lb B/acre rate. There were no differences in yield or quality for 92 comparisons of the control and a 2 lb B/acre. Boron is no longer recommended for sugar beet production in Michigan.