

SAILSBERY, R. L.*, and G. S. PETTYGROVE. University of California Cooperative Extension, P. O. Box 697, Orland, CA 95963 and LAWR, University of California, Davis, CA 95616. - Fertilizer N response of sugarbeets irrigated with high-nitrate water.

The sugarbeet, Beta vulgaris L., is nitrogen sensitive. High plant N levels near harvest can result in low sucrose levels. In field studies fertilizer N rates were evaluated where irrigation waters contained 21.4 to 27.6 lb N/acre-ft. Based on estimations of the amount of irrigation water applied and an assumed 65% furrow irrigation efficiency, N supplied to sugarbeets was calculated to range from 60 to 74 lb/acre in the four trials conducted and was sufficient to give maximum tons/acre and sugar/acre without additional fertilizer N. Root yields at the zero N fertilizer treatment were 31.3, 31.7, 53.2 and 30.7 tons/A during the three year evaluation period. Early season residual soil $\text{NO}_3\text{-N}$ was 100, 127, 117 and 138 lbs/acre to a depth of 3 feet in the four trials. Sugarbeet growers with significant levels of nitrate N in irrigation water for use on sugarbeets should carefully evaluate the N program selected for sugarbeets.

SCHMIDT, WALTER H. Ohio Agricultural Research and Development Center, 952 Lima Ave., Box C, Findlay, OH 45840. - Influence of nitrogen rate on soil nitrate level and sugar production in Ohio.

Soil nitrate levels in 1989 ranged from 14 lb/A in April to less than 5 in October with no added N. Applying 110 lb N at planting resulted in a June nitrate level of 32 lb/A and an October level of 5. Nitrate levels in 1990 ranged from 10 lb in April to 5 lb in October. The 1989 clear juice purities ranged from 92.21% for 120 lb of applied N to 93.85% for no applied N. The raw white sugar produced per acre was 6,019 and 5,509 lb/A, respectively.