

MELIN, DAVID C., Holly Sugar Corporation, P.O. Box 581, Brawley, CA92227. Continuous improvement in plant population and irrigation practices yields an average 11,220 pounds of sugar per acre in the Imperial Valley of California.

During the 1980's the future of the sugarbeet industry in the Imperial Valley was at risk of being lost due to poor sugarbeet quality. Improvements in field preparation, and irrigation practices have increased the number of harvested beets per acre. Post thinning stand counts compared to actual beets per acre harvested have influenced growers to increase plant populations. Planting on beds using two seed lines on 40 inch beds has allowed growers to increase plant populations to 50,000 plants per acre at emergence time. Growers using single seed line 30 inch rows have increased plant populations by increasing the number of beets left at thinning to as many as 60,000 plants per acre. Yields have increased from 26 tons per acre to an average of 34 tons, along with sugar content increasing from 16% to 16.8%. The use of the 40 inch beds with 2 seed lines has allowed growers to irrigate in 110 degree temperatures with less risk of saturating the soil around the beet inducing rot. The number of rotten beets harvested has been reduced from over 10% to a low 2% during the late July harvest period. Planting of Rhizomania tolerant varieties has greatly increased the yield and sugar content of beets harvested in Rhizomania infected fields. Variety improvement has increased the vigor of seedlings at emergence which helps reduce the number of seedlings lost to heat stress in the 90 degree soil temperatures of September. Nitrogen management using deep soil sampling to evaluate fields selected for sugarbeet production has effectively lowered the ppm of brei nitrate at harvest time.