

WANG, SHAOKE, ASANO, SUZUKI and DALE / EARLUS ODA, ENGAH2, ONAW
KURANOCHI, TOSHIKAZU*, and MASAKATSU TANAKA, Hokkaido Natl. Agric. Exp. Stn., Hitsujigaoka, Toyohira-ku, Sapporo 062, JAPAN. - Breeding of sugarbeet F1 hybrid lines for high processing quality.

Constituents relative to sugarbeet quality, namely, amino-nitrogen, potassium and sodium, are generally called as harmful non-sugars, and they disturb the crystallization of sucrose in manufacture. Using an auto-analyzer and an electric conductivity meter, individual selection for low content of harmful non-sugars carried out, and some promising CMS maintainer (O type) lines have been bred. These lines were crossed with other CMS lines, and F1 hybrid seed parent lines were obtained. Then, the productivity and quality of selected O type lines and F1 hybrids derived from them were examined.

Selection effects on harmful non-sugars were different between lines, but generally high. When selection were performed in the direction of two ways, namely, either low or high content of harmful non-sugars, content of non-sugars differed greatly between two progenies. It was generally recognized that, when selection was performed in the direction of low content of harmful non-sugars, yield of progeny decreased and sugar content increased. Some hybrids of high quality selected lines are higher in productivity and lower in harmful non-sugars, as compared with hybrids of their parent lines. Therefore, the effective breeding of high quality variety, in addition to high yield and high sugar content, will be prospective.