

#### Abstract:

The nondestructive quality measuring system with laser was newly developed for evaluation of ripeness and soluble solids content in melon and watermelon fruits. The market acceptability is markedly improved by evaluation of individual fruit quality on the grading line. Lasers of plural wavelength in near infrared zone (800-1000nm) were irradiated to fruit apex and the transmitted lights were detected. For system accuracy evaluation, over 500 melon and 90 watermelon fruits were measured with laser device. Two parameters concerning with ripeness and S.S.C. of fruit (R and S parameter) were obtained with the laser device. After nondestructive measurement, each fruit was immediately cut vertically and measured for fruit firmness, S.S.C. and other quality parameters. There were high correlations between S parameter and S.S.C. of melon and watermelon fruits. And there were also high correlations between R parameter and the score for water-soaked symptoms in melon fruit. Practically acceptable estimation of fruit ripeness was possible by use of the combination of S and R parameter. Nondestructive quality evaluation with laser device could be practical for several fruits in commercial use.