

Allen

XXIII International Horticultural Congress

ABSTRACTS
OF
CONTRIBUTED PAPERS
2. Poster



Firenze (Italy) August 27 - September 1, 1990

INTRODUCTION - The light transmittance characteristics have been reported to evaluate quality factors of a number of agricultural products [1]. The present experiment deals with estimation of the change of these parameters in maturing and storing apples.

METHOD - The wavelengths of peak transmittance of the intact apples were determined on the Hortispect. The spectral interval (SI) between the highest peaks of transmittance was calculated (Fig. 1).

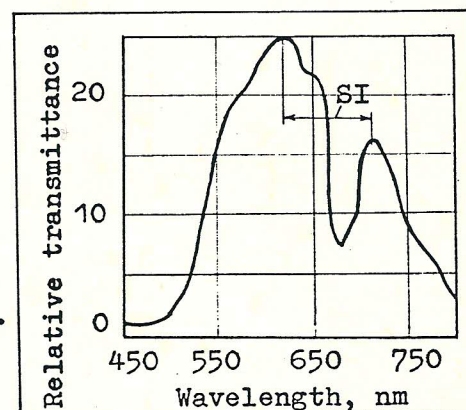
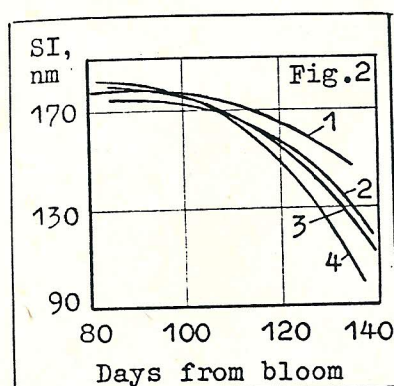
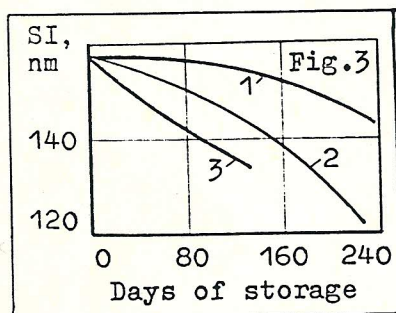


Fig. 1 - Light transmittance of Jonathan apple



RESULTS - The spectral interval of fresh apples gradually decreased as the fruits matured (Fig. 2: 1- Red Delicious, 2- Cortland, 3- Calville, 4- Jonathan cvs). Changes due to ripening in conventional and controlled atmosphere (CA)-storages were also in harmony with store regimes (Fig. 3: 1- CA, 2- convt RH= 95%, 3- convt RH= 80%). Spectral interval was closely related to the flesh chlorophyll content of fruits. Scores of apples separated into some SI-classes after long-term storage indicated that there was a relationship between this classification and average panel scores for eating quality (Fig. 4).



CONCLUSION - The spectral interval measurements proved to be promising in indicating the stage of apple maturation and determination of optimum harvest date of fruits. This method makes it possible to evaluate the eating quality of storing fruits and to calculate the optimum date for the ending of storage [2].

REFERENCES

1. Chen P. Use of optical properties of food materials in quality evaluation and materials sorting. J. Food Process. Eng., 1979, 2(4): 307.
2. SU Patent No 1139385, A01F 25/00, 1985.

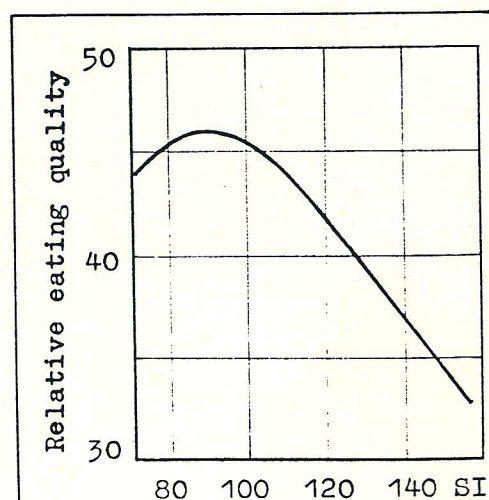


Fig. 4 - SI with panel scores of Jonathan apples at the end of storage.