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ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 7 (2001) , No. 2 pp.161-163

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Application of Non-Destructive Portable Firmness Tester to Pears

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(Received: September 28, 2000)

(Accepted: March 16, 2001)

The firmness tester originally developed for melons was improved to measure the ripeness of pears. Sampling frequency was increased to measure pears and user interface on a data acquisition program was also improved. In addition, two microphones and a stabilizer rod were arranged to form a tripod for stable measurement on the curved surface of the fruit. The transmission velocity, destructive firmness measurement and sensory evaluation were carried out for 96 La France pears and 85 Le Lectier pears. The transmission velocity calculated from the cross correlation of two acoustic signals showed a high level of correlation (R0.94) with apparent elasticity measured in destructive tests. Measurements with the firmness tester could be used to monitor physiological changes in ripening pears.

Keywords: [pears](#), [firmness](#), [acoustics](#), [non-destructive testing](#), [monitoring](#)

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Application of Non-Destructive Portable Firmness Tester to Pears Junichi SUGIYAMA, *FSTR*. Vol. 7, 161-163. (2001) .



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