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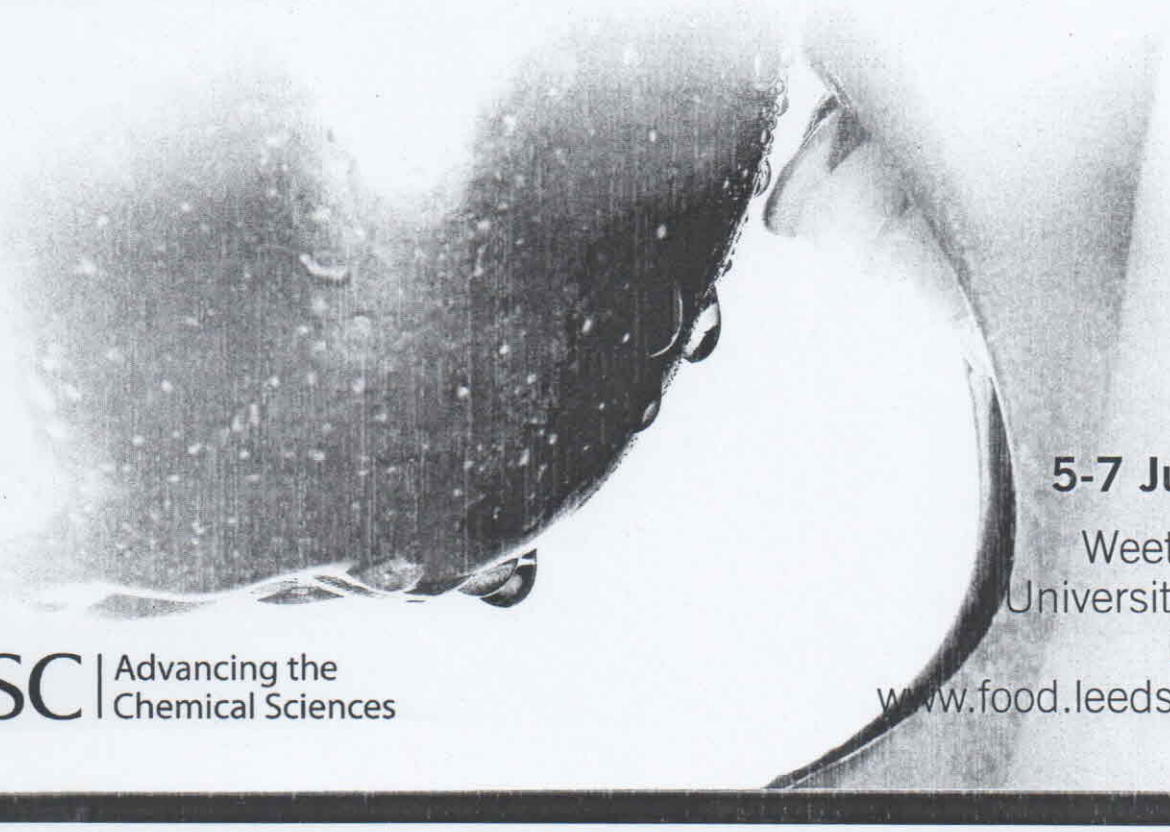

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An objective method to measure lettuce quality

Marcos David Ferreira[1*], Gustavo Custódio Matsubara[2] & Adonai Gimenes Calbo[3]

[1, 3] *Embrapa Agricultural Instrumentation, Brazilian Agricultural Research Corporation, C.P.: 741, São Carlos, SP, 13560-970, Brazil.*
[2] *Faculty of Biology, Federal University of São Carlos, São Carlos, SP, Brazil.*

Leaf vegetables quality is very hard for measuring. Its quality it is directly related to leaf turgor, and generally is based on subjective basis. A portable instrument, named wiltmeter, was developed to estimate leaf turgor pressure according to an adaptation of the flattening method. In the instrument a flexible inflating membrane presses the leaf against a flattening plate having small orifices surrounded by a finely engraved network of obtuse indentations, through which an air flow is delivered. During a measurement, as the compression builds up, the leaf is progressively molded against the flattening plate, and as a consequence the air flow (x) crossing the plate is reduced towards zero. The smallest leaf compression (p_0) which blocks the air passage is an estimate of the leaf turgor. The main goal of this work was to relate the objective measurement using the wiltmeter equipment with the human perception of quality (color, firmness, freshness, integrity, size, etc). For that, a human sensory panel test was developed with crisp lettuce, fresh harvested and exposed during the day to quality loss at ambient temperature. Turgor was measured using the wiltmeter and related to human perception for the mentioned attributes based on an affective tests of acceptability. The first results showed that will be possible to establish a relation among an objective measurement using the equipment wiltmeter and other quality attributes, determining a commercial threshold.

* corresponding author: marcosferreira@cnpdia.embrapa.br