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ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 7 (2001) , No. 3 pp.258-261

[\[PDF \(104K\)\]](#) [\[References\]](#)

Method of Evaluating Quality of Freshly Cut Welsh Onions

[Toshiyuki IBARAKI](#)¹⁾, [Toshinao ISHII](#)²⁾, [Noriko BABA](#)¹⁾, [Hironobu IKEDA](#)¹⁾, [Emi IKEMATSU](#)²⁾ and [Hideaki OHTA](#)²⁾

1) *Fukuoka Agricultural Research Center*

2) *Department of Food Science and Nutrition, Nakamura Gakuen University*

(Received: April 6, 2001)

(Accepted: June 9, 2001)

To determine a useful method for evaluating the quality of fresh-cut Welsh onions (*Allium fistulosum* L.), the onions were examined and electrical conductivity (EC), potassium and ammonia contents of electrolyte solution extracted from them were compared. The quality of cut onions stored at 0, 5 and 10°C was stable for 6 days, while the quality of those stored at 15 or 20°C showed slight deterioration after 4 and 3 days of storage, respectively, with mashed deterioration occurring thereafter. EC of onions stored at 15 or 20°C decreased for the first 4 and 3 days of storage, respectively, and thereafter began to increase, although that of onions stored at 0, 5 or 10°C decreased throughout the storage period. The changes in potassium content extracted by homogenization were steady during storage, although the changes in potassium extracted by leakage were similar to those in EC stored at 15 or 20°C. The relationships between EC or potassium content and quality of cut onions suggested that electrolyte leakage occurred when the tissue collapsed due to decay. In cut onions stored at 15 or 20°C, ammonia was first detected after 4 or 3 days, respectively, with high levels of ammonia detected thereafter. This indicated that ammonia is formed in the cellular tissue. The first day on which ammonia was detected corresponded approximately with the day on which an unpleasant odor was detected. Chlorophyll content of cut onions decreased with decay. However, in the case of EC, potassium and chlorophyll, the quality of the onions could not be known without continuous measurement. On the contrary, if ammonia was measured once, the quality of the onions could be evaluated; therefore, ammonia was a good parameter with which to evaluate onion decay.

Keywords: [fresh-cut Welsh onion](#), [quality](#), [evaluation](#), [electrolyte](#), [ammonia](#)

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Method of Evaluating Quality of Freshly Cut Welsh Onions Toshiyuki IBARAKI,
Toshinao ISHII, Noriko BABA, Hironobu IKEDA, Emi IKEMATSU and Hideaki OHTA,
FSTR. Vol. **7**, 258-261. (2001) .

doi:10.3136/fstr.7.258

JOI JST.JSTAGE/fstr/7.258

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