

# Unequal Distribution of $^{14}\text{C}$ - $\beta$ -Carotene Incorporated into Dehydrated Sweet Potato Flakes: A Warning

The addition of  $^{14}\text{C}$ - $\beta$ -carotene in ethanol-ether solution to sweet potato puree prior to preparing

flakes results in an unequal distribution of label between two  $\beta$ -carotene fractions.

Recently we (Purcell and Walter, 1968) reported that it was possible to study the autoxidation of  $\beta$ -carotene in dehydrated sweet potato flakes (DSF) by the incorporation of small amounts of highly radioactive  $^{14}\text{C}$ - $\beta$ -carotene into sweet potato puree prior to making flakes and following the distribution of  $^{14}\text{C}$  during autoxidation.

Further study of this system has enabled us to separate the carotene into at least two fractions. The main fraction is water insoluble and comprises about 80% of the carotene. The remainder of the carotene is water soluble. This water soluble carotene can be coprecipitated along with long-chain carbohydrates by mixing with an equal volume of 95% ethanol. A colloidal dispersion of  $\beta$ -carotene is not precipitated by this treatment.

The specific radioactivity of this water soluble carotene is approximately four times greater than that of the carotene in the main fraction, indicating preferential retention of added carotene by the water soluble fraction. Oxidation studies showed that this water soluble carotene was destroyed at a

more rapid rate than the main carotene fraction. The nature and effect on autoxidation of this fraction is now under study.

This statement is made to caution other workers.

#### LITERATURE CITED

Purcell, A. E., Walter, W. M., Jr., *J. AGR. FOOD CHEM.* **16**, 650 (1968).

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