

## CORRESPONDENCE

### Comment on Vitamin E Content of Feedstuffs Determined by High-Performance Liquid Chromatographic Fluorescence

*Sir:* A recent paper (Cort et al., 1983) reported a method for determining the tocopherol and tocotrienol contents of a variety of feedstuffs. Unfortunately, the paper leads to confusion about the identity of various forms of tocopherol. The eight compounds assayed were referred to as "isomers" when in fact they are not. The tocopherols ( $\alpha$ ,  $\gamma$ , and  $\delta$ ) are a set of homologues and the tocotrienols ( $\alpha$ ,  $\gamma$ , and  $\delta$ ) are another set of homologues, while the  $\beta$ - and  $\gamma$ -tocopherols are isomeric only with each other and the  $\beta$ - and  $\gamma$ -tocotrienols are isomeric only with each other.

This distinction is important since the tocopherols each occur naturally as only one [e.g., (2*R*,4'*R*,8'*R*)- $\alpha$ -tocopherol] of the possible eight stereoisomers. Thus, the statement that "The separation and identification of all eight vitamin E isomers were achieved." is very confusing when in fact  $\alpha$ -,  $\beta$ -,  $\gamma$ -, and  $\delta$ -tocopherols and  $\alpha$ -,  $\beta$ -,  $\gamma$ -, and  $\delta$ -tocotrienols were separated.

Furthermore, since the paper was only dealing with natural tocopherols, it would have been precise to specify

the stereochemistry of the compounds used; for example, (*R,R,R*)- $\alpha$ -tocopherol instead of simply  $\alpha$ -tocopherol, even though the analytical method used could not distinguish between the various diastereomers.

**Registry No.**  $\alpha$ -Tocopherol, 59-02-9;  $\beta$ -tocopherol, 148-03-8;  $\gamma$ -tocopherol, 7616-22-0;  $\delta$ -tocopherol, 119-13-1;  $\alpha$ -tocotrienol, 1721-51-3;  $\beta$ -tocotrienol, 490-23-3;  $\gamma$ -tocotrienol, 14101-61-2;  $\delta$ -tocotrienol, 25612-59-3.

#### Literature Cited

Cort, W. M.; Vicente, T. S.; Waysek, E. H.; Williams, B. D. *J. Agric. Food Chem.* 1983, 31, 1330.

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### Rebuttal to Vitamin E Content of Feedstuffs Determined by High-Performance Liquid Chromatographic Fluorescence

*Sir:* We are well aware of the structures of the eight naturally occurring "forms" of vitamin E. Charles Foster is correct; they are not isomers. In the third paragraph and three places in the discussion, the word should be vitamin E "forms" as it appears in the first sentence.

There is no need to refer to (*RRR*)- $\alpha$  because the method does not separate the various diastereomers and, in fact,

the procedure is also used for (*all-rac*)- $\alpha$ -tocopherol.

**Registry No.** Vitamin E, 1406-18-4.

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