Antioxidative Effects of *Carum* Seeds

Sir:

Many extracts of spices are known to have antioxidative properties for a number of different reasons. In part, this may be attributed to phenolic constituents and to other highly specific minor components, for example in *Rosemary, Ricebran, Sesame*, and other seed oils. Mehta and Zayas (1) have recently described in *JAOCS* the effects of Ajowan seed (*Carum coptimum*) which belongs to the plant family *Umbelliferae* or, as it is now often called, *Apiaceae*. The authors, however, do not mention the tocopherol or tocotrienol content of these seeds. The composition of the Ajowan extracts was not investigated and the nature of the active principle was not identified.

The name of the plant (*C. coptimum*), however, is probably a misprint—it should read *C. copticum* (L.) Benth. et Hook f. ex C.B. Clarke, which in the botanical literature is synonymous with *Ptychotis ajowan* DC., *Ptychotis coptica* (L.) DC., *Trachyspermum copticum* (L.) Link, and *Trachyspermum ammi* (L.) Sprague (2). Literature searches are difficult, because the plant can be found under several of these names in the fats and foods literature (3,4). (See these for other references). Thirty years ago in *JAOCS*, Placek (3) called it *Ptychosis ajowan*, which is probably another misprint.

Recently, Ivanov and Aitzetmüller (5) had carried out an investigation on the tocopherol and tocotrienol content of various seed oils obtained from representatives of the plant family *Umbelliferae* or *Apiaceae*. In these experiments it turned out that another *Carum* species, *C. carvi*, had one of the highest concentrations of tocopherols and contained mostly γ-tocotrienol as the major tocopherol (1,500 mg/kg). In view of these results, it would not be surprising, if other *Umbelliferae*, and in particular *Carum* species, would also contain large amounts of tocotrienols. In this case any antioxidative effects, if they are observed with extracts from these seeds could be due to the presence of tocopherols and tocotrienols, rather than to other spice constituents. I wonder if the results found by Mehta and Zayas could not be explained—at least in part—by the presence of large amounts of γ-tocotrienol, and it would certainly be interesting to know if the tocotrienol content of *C. coptimum* (C. *copticum*) is as high as that of *C. carvi* (2).

REFERENCES

1. Mehta, R.L., and J.F. Zayas, *J. Am. Oil Chem. Soc. 72*:1215–1218 (1995).
2. Zander, R., *Handwörterbuch der Pflanzennamen*, Ulmer, Stuttgart, 1984.
3. Placek, L.L., *J. Am. Oil Chem. Soc. 40*:319–329 (1963).
4. Wissebach, H., in *Handbuch der Lebensmittelchemie* edited by J. Schormüller, Vol. IV, Springer, Berlin, 1969, pp. 9–97.
5. Ivanov, St. A., and K. Aitzetmüller, *Fat Sci. Technol. 87*:24–29 (1995).

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