

BRIEF COMMUNICATIONS

LIPIDS OF *Capsicum annuum* FRUIT PULP

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In continuation of our studies of lipids of hot red pepper (*Capsicum annuum*, Solanaceae) [1], we present results from an investigation of lipids and lipophilic components of the fruit pulp. Dried fruit was separated into pulp and seeds, the weight ratio of which was 2.6:1.

Lipids of ground pulp were obtained by extraction with benzine (70-75°C) in 4.1% yield and are a thick, oily, dark orange liquid. The carotinoid content was determined by spectrophotocolorimetry at 440 nm and was 1062 mg% by comparison with a standard solution of potassium dichromate.

TLC of the extract using hexane:diethylether (4:1) showed the presence of nine colored bands, of which the four with the highest pigment content had R_f values 0.04, 0.25, 0.43, and 0.50 and were red; the remainder (R_f values 0.10, 0.20, 0.70, 0.80, 0.86), yellowish-orange.

Saponification of part of the extract by methanolic KOH (10%) caused two of the red bands (R_f 0.43 and 0.50) to disappear in the chromatogram. The color of the other two other intensified.

The ketocarotinoids capsanthin, capsorubin, and cryptoxanthin have been observed in red peppers [2-4]. Only the two xanthophylls, capsanthin and capsorubin, are red in the overall fruit color. Also, esters of these compounds are red. UV spectra of the four red pigments eluted from the adsorbent during separation of the total extract were recorded. The absorptions of these agreed with literature values [4] and confirmed the identity of the principal pigments as capsanthin and capsorubin and their esters (UV, acetone, λ_{\max} , nm: 448, 481, 509, capsorubin; 478, 507, capsanthin; 476, 491, capsanthin ester; 450, 480, 580, capsorubin ester).

The carotinoid content in the unsaponified part of the pulp extract was determined spectrophotocolorimetrically and was 875.8 mg%. Preparative TLC using hexane:diethylether (1:1) identified by comparison with standard samples and qualitative reactions three classes of compounds (% of unsaponified mass): isoprenes (19), triterpenes (30), and sterols (38).

Fatty acids (FA) were isolated from the saponified part of the extract as usual. The composition was determined as the methyl esters by GC (mass %): 14:0 (7.7), 16:0 (18.3), 16:1 (1.0), 17:0 (0.6), 18:0 (4.1), 18:1 (13.3), 18:2 (45.0), 18:3 (10.0).

Comparison of the FA composition with that of pepper seeds [1] showed that linoleic acid (18:2) is the principal component in seeds and pulp (54.0 and 45.0%, respectively). Linolenic acid (18:3), which was present at 10% in the pulp, was not observed in the seeds.

Fruit of hot pepper is processed to obtain the alcohol extract, which is used for medicinal purposes. We isolated from the dried waste after alcohol extraction 5.8% of a benzine extract with 36.5 mg% carotinoid content, i.e., most of the carotinoids are extracted by alcohol. The composition of the obtained lipids is close to that of previously studied pepper seeds [1].

REFERENCES

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