

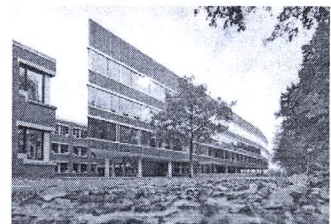


# Food and Agriculture COST action FA1101 'SaffronOmics' 2014 annual conference

**2 & 3 October 2014**

**Wageningen, The Netherlands**

**RIKILT, Wageningen UR**



COST is supported by the EU RTD Framework program



ESF provides COST Office through an EC contract



## P2: Fatty acid content in stigmas of crocus pelistericus

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**Keywords:** *Crocus pelistericus*; stigma; FAMES

### Abstract

Genus *Crocus* in Macedonian flora is present with about 18 species, most of which are endemic or subendemic. *Crocus pelistericus* is Macedonian-Greek endemic plant. It is distributed in south-western part of Macedonia (on mountains Pelister and Kajmakcalan) and north part of Greece. Its habitat are moist subalpine meadows. *Crocus pelistericus* has purple flowers with bare throat. Corm tunic fine fibres netted. Flowering period is May-August. This species has  $2n=34$  chromosomes. In recent years there is increased interest for analysis of plant composition. A lot of work is done for analysis of crocin, picrocrocin and safranal content in saffron (*Crocus sativus*) and wild *Crocus* species.

The main objective of this work was to analyze fatty acid composition of *Crocus pelistericus* stigmas. Plant samples were taken from mountain Pelister on altitude of 2200 m (south-western part of Macedonia). Sampling was done in May 2014. After sampling, stigmas were separated from the flowers. Extraction of fatty acids from stigmas was done in hexane:isopropanol (50:50, vol/vol). Fatty acids were then trans-esterified with  $\text{BF}_3$ /methanol into fatty acid methyl esters (FAMES), which were analyzed using Agilent 7890 gas chromatograph with a flame ionization detector, equipped with autosampler, and a capillary column HP 88 (60m x 0.250mm x 0.20  $\mu\text{m}$ ). Helium was carrier gas, and total run was 38.50 minutes. Reliability and accuracy of the analytical method for the detection of fatty acids were ensured by use of the certified reference matrix that consisted a mixture of 37 FAME standards (Supelco 37 Component FAME mix, Sigma-Aldrich). The content of the particular component is expressed as percentage from the sum of all analyzed fatty acids.

Obtained results have shown that fatty acid profile of *Crocus pelistericus* is composed of two fatty acids: palmitic ( $\text{C}_{16:0}$ ) 57,376% linolenic acid ( $\text{C}_{18:3n3}$ ) 42,624%. Content of saturated fatty acid was 25,71% ( $p<0,05$ ) higher than content of unsaturated fatty acids.

Performed work can contribute in enlargement of knowledge of chemical composition of saffron (*Crocus sativus*) and wild *Crocus* species.