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ABSTRACTS

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Studies on the Oxidative Stability of *Camelina sativa* Oil

Inese Mieriņa[1], Māra Jure[2]
[1,2]*Riga Technical University*

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INTRODUCTION

Camelina sativa or false flax oil is a natural source of ω-3 and ω-6 fatty acids (mainly linoleic (9–21 %) and linolenic (15–45 %) acids); nevertheless currently it is mostly used for non-food applications [1]. This oil is also a valuable source of tocopherols – total amount varies from 680 to 800 mg/kg of oil depending from the extraction method [2]; besides that it contains a small amount of sinapic acid derivatives [3] and various phytosterols [4]. The false flax oil is more stable against oxidation in comparison to fish and flax seed oil, but less stable than sunflower, sesame, corn, rapeseed or olive oil [5]. The changes of total amount of polyphenols and tocopherols during storage are described in [6]. One study is devoted to the impact of extracts of rosemary, green tea, leaves of olive and pomegranate on the oxidative stability of false flax oil [7].

RESULTS AND DISCUSSION

Despite the nutritional value of the *Camelina sativa* oil, its use as food is rather rare due to the presence of sinapine [8] that provides specific mustard-like or even fishy odour [9]. We chose to overwhelm this smell with extracts of different spices. We analysed the impact of additives of allspice, bay leaves, cloves and thyme (1 g and 5 g per 100 g of oil). The extracts were prepared by stirring the plant additive in the oil at room temperature for 24 h. In order to study the oxidative stability of the obtained extracts, the samples were kept under accelerated oxidation conditions. It was observed that in all cases with exception of thyme the additive of spice even facilitated the oxidation processes of the false flax oil and strong pro-oxidant effect was observed. According to our previous studies a powerful sources of antioxidants for increasing the oxidative stability of vegetable oils are oat grains [10] and oat hulls [11]. Taking this into account, various amounts of additive of oat grains have been tested as possible antioxidants for increasing the oxidative stability of the spice extracts of *Camelina sativa* oil. The samples are characterized with antiradical activity and total polyphenol content, too. An optimal composition of extracts of false flax oil with an additive of spice and oat grains with acceptable oxidative stability was established.

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