

OXIDATIVE STABILITY OF RAPESEED OIL IN EMULSION AND DURING DEEP FRYING

Rita Kazernavičiūtė, Dainora Gruzdienė

Kauno technologijos universitetas, Maisto produktų technologijos katedra, Radvilėnų pl. 19, LT – 3028 Kaunas; tel. 8 37 30 01 88; el. paštas: Rita.Kazernaviciute@ktu.lt

Summary. Research object – to evaluate oxidative stability of rapeseed oil in emulsion (at 40 °C) and during deep frying (at 180 °C) with and without antioxidants. There were used sweet grass (*Hierochloe odorata Walhnb.*), sage (*Salvia officinalis* L.), lovage (*Levisticum officinale* Koch.) plant extracts) and 5,8-hydroxycoumarin (separated fraction from sweet grass plant extract), rapeseed and palm oil, synthetic antioxidants *tert*-butylhydroquinone (*TBHQ*) and *L*-ascorbyl-6-palmitat (*AP*), and commercial supplement for deep frying Oi-Master. Oxidative stability of rapeseed oil were tested applying the Schaal Oven Test (weight gain methods) at 80 °C, instrumental (Oxipres (100 °C, 110 °C, 130 °C, 150 °C) and Rancimat (120 °C)) and sensory methods. It is proof, that 5,8- dihydroxycoumarin (HOK 0.1% in edible oil) not only slows down oxidation in rapeseed oil (Oxipres method), but it also improves taste and flavour quality of fried rapeseed oil at 180 °C temperature. It is proof, that stability of rapeseed oil with addition of sweet grass plant extract is approximate to stability of palm oil, which is used world-wide for deep frying. After 5 days of deep frying of rapeseed oil with addition of sweet grass and lovage plant extracts mix there was left 83.7 % of initial tocopherols amount – natural antioxidants.

Keywords: rapeseed oil, oxidative stability, deep frying, sweet grass, sage, lovage, plant extracts.