

CHEMICAL COMPOSITION AND PROPERTIES OF OIL FROM AMARANTHUS SEED GROWING IN LITHUANIA

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Summary. Non-conventional oil seeds are considered by researchers by their unique chemical properties and possibility of the oil to be used in the diet. The genus *Amaranthus* includes more than 60 species that grow in many areas of the world. Amaranth is called the thirdmillennium crop plant.

The aim of the study was to determine the chemical composition and oxidative stability of amaranthus seed oil and to compare it with flaxseed oils using in Lithuania. The content of fatty acids, total, free and esterified sterols, tocopherols and tocotrienols, squalene were determined by GC, GC-MS, HPLC and Oxipress methods.

There were analysed two cultivars of amaranth oils: *Amaranthus spp.* and *Amaranthus retr.*

Data of the study showed that amaranthus oils contain considerable amounts of C18:2 (49,61% and 47,82%) and C18:1 (19,52 and 18,64%), about 20% palmitic acid and lower quantities of stearic acid (about 4%). These results are in concert with previous findings on fatty acid composition described in literature. Very important for amaranthus is high concentration of squalene (9.98 g/100g) which is different from other oil. *Amaranthus* is good source of vitamin E (1112 mg/kg). Summary of sterols content was 2789,2 mg/100g. The main sterols, such as desmethylsterols (1587,14 mg/100g) and 4-methylsterols (1035,1mg/100g) and triglycerides composition: SN₂ (16:0-18:2-18:2; 16:0-18:1-18:2) and N₃ (18:2-18:2-18:2; 18:1-18:2-18:2; 18:1-18:1-18:2,18:1-18:2-18:3) were determined. Data of the study showed, that stability of amarathus oil is quit high – 4,89 h at 110°C temperature, whereas additive of amarathus seed extract (0,15%) increased stability of flax oil 2,5 time compared to control sample (flaxseed oil without additives).

Key words: amarantus, antioxidative stability, fatty acids, tocopherols and tocotrienols, sterols, squalene.