Some Antioxidant Properties of Poppy (*Papaver somniferum* L.) Oils Obtained by Cold Pressing Technique

Emine Türkavcı [1] Harun Dıraman[1] Didar Sevim [2]

[1] Dep. Food Eng. Engineering Faculty. Afyon Kocatepe University. Afyonkarahisar - Türkiye
[2] Dep. Food Technologies. Olive Research Inst. Bornova/Izmir –Türkiye

Poppy (*Papaver somniferum* L.), an annual crop from the Papaveraceae family, have been cultivated (obtaining opium gum and oil extraction from seeds) since ancient times in Afyonkarahisar province, Türkiye. The strongest archaeological evidence for poppy cultivation is a Roman bronze coin (containing a picture of a poppy capsule with Synnada city name) minted in the ancient city of "Synnada" (Şuhut District) and this coin is in the Afyon City Museum. In this study, the some antioxidant properties of oils obtained by cold pressing method from poppy seeds having two different colors (white and blue) and the seeds in the local seed classification (TMO Code: 8151 and 8152) grown in five different locations (of Sandıklı District (Afyonkarahisar-Türkiye) were investigate. The totally 8 oil samples were obtained by cold pressing method from blue and white poppy seeds at room temperature with a laboratory scale expeller-pressing machine (screw speed 27 rpm, exit die 10 mm for pellet, the inner temperature of the expeller-pressing machine 40 ±5°C). The total carotenoids with chlorophylls contents [specrophotometrically methods at 470 and 670 nm, respectively], total phenol content [specrophotometrically method at 725 nm], antioxidant activity (DPPH [specrophotometrically method at 517 nm]) and the induction time (Rancimat method, at 110 °C and 20L/ h by air) of poppy oils by a cold pressing method ranged between 0.05- 1.50 with 0.2-0.83 (mg/kg oil), 16-7.89 mg GAE/100 g oil, % 24.236-% 48.02 and 1.93-3.47 (hours), respectively. Also, the changes of alpha (as known the most the prevention of atherosclerosis) and gamma tocopherol (as known anti-inflammatory activity) contents (an official HPLC method and µ-porasil column), as an important unsaponifiable lipid fraction of oil seeds and having antioxidant properties, were determined at the levels of 43.52 – 101.04 and 215.36 – 276.9 mg/kg oil, respectively. These analytical findings indicated that poppy oil by cold pressing has a rich content of antioxidants because of its unique tocopherol profile.

Key words: Local poppy seeds, cold pressing oils, alpha-gamma tocopherols, antioxidant properties.

This study was taken from a part of E.Türkavcı's Master Thesis