

## **Sterols and Oxidized Sterols Changes in Oil Processing By-products**

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During processing of rapeseed oil variety of by-products is produced which are often utilized as an ingredient in animal feed, cosmetics or biodiesel. Determination of their oxidative status is a very important quality indicator.

Rapeseeds at different stages of production and deodorization distillate from Polish oil processing plant were assessed for oxidation indicators, changes in sterols and formation of oxidized phytosterol derivatives.

The wide range of phytosterol amounts were observed in deodorization distillate (14-56 mg/g). Crushed and flaked seeds, press cake and toasted meal contained similar amounts of phytosterols ranged from 7.7 to 9.1 mg/g. The total amounts of phytosterol oxidation products increased in the following order: crushed seeds 0.169 mg/g, flaked seeds 0.220 mg/g, press cake 0.751 mg/g, and 0.937 mg/g in toasted meal. The concentration of oxyphytosterols in deodorization distillate was found at the level of 0.721 mg/g.

Basic oxidative status indicators for analyzed samples were: peroxide value 7.09-9.75 meq/kg, free fatty acids 4.2-5.28 mg KOH/g and anisidine value 1.6-2.0.

Presented data showed that the press cake which contained 24% of oil is also rich source of phytosterols for animal feeds. Desolventized meal contained 3% of oil and had high level of phytosterol oxidation products. Deodorization distillate is the best source of phytosterols.