Behaviour of the Canolol Content during Roasting and Pressing of Rapeseed and Refining and Storage of Crude Rapeseed Oil

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Important minor components of rapeseed are phenolic compounds with sinapic acid or its derivatives as main compounds. By decarboxylation of sinapic acid canolol can be formed, which is a highly potent antioxidant with some antimutagenic properties. This compound can be found in crude rapeseed oil formed during the press process or roasting of the seeds.

The present work gives an overview about the content of canolol in virgin rapeseed oils and shows the dependence of canolol formation on temperature during pressing and roasting. The resulting oils were also evaluated regarding different parameters describing the oxidative state of the oils after appropriate heat-treatment of the raw material. A correlation between heat-treatment, canolol content and oxidative state of the oils is given.

In refined rapeseed oils no canolol can be detected. The work presents the contribution of the different steps of the refining process on the removal of canolol from crude rapeseed oil. In addition the behaviour of canolol as antioxidant during storage of rapeseed oil at 60°C was investigated. Different contents of canolol were taken into consideration. The content of canolol in dependence on the storage time as well as tocopherol content, peroxide value and hexanal as key compound of oxidative degradation of vegetable oils is presented.

The correlation between the content of sinapic acid and its derivatives and the formation of canolol during processing was investigated.