

Effect of Selected Oils and Antioxidants on Quantitative and Qualitative Changes in Thiamine

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The aim of the work was to determine the effect of addition of fresh and oxidized oils and selected antioxidants on quantitative and qualitative changes of thiamine.

The source of thiamine was hydrochloride thiamine applied to cellulose. Among the selected oils were: soy, sunflower and linseed, added in an amount of 30%. The antioxidants were casein hydrolysate and rosemary extract. The thiamine content was determined with a thiochromium method analysing quantitative changes in total and free thiamine. The amount of the bound thiamine was calculated from the difference between the total thiamine and the free one.

Oxidative changes of lipid were analysed periodically (each 3 days) based on measurement of peroxide value (PV) by iodometric method, anisidine value (AV) and TBARS content by distillation method with thiobarbituric acid.

On the basis of the presented results it was observed that during storage of samples losses of thiamine were recorded. In the case of storage, a high correlation was observed between addition of oils and values of oxidation, as well as content of thiamine. The highest values for the applied measurement of oxidation were observed in the sample with linseed oil without antioxidants. In these samples the lowest retention of thiamine was observed. The addition of both rosemary extract and casein hydrolysate slowed down lipid oxidation to a significant extent and lowered the loss of thiamine.

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