

Ação antioxidante do α -tocoferol e do extrato de alecrim em óleo de soja submetido à termoxidação

Ramalho V. C. - **Antioxidant action of α -tocopherol and rosemary extract in soybean oil under thermoxidation.** São José do Rio Preto, SP, 2005 [Dissertação de Doutorado - Universidade Estadual Paulista – Instituto de Biociências, Letras e Ciências Exatas – UNESP]. Orientador: Profa. Dra. Neuza Jorge

The aims of this work were to evaluate, in thermoxidation conditions, the behavior and antioxidant activity of α -tocopherol naturally present in soybean oil and the one added in purified soybean oil, the behavior and antioxidant activity of rosemary extract added in soybean oil with its original and purified tocopherols and, also, to verify rosemary influence on the resistance of natural α -tocoferol or the one added in soybean oil. In order to do that, three experiments were carried out. In the first one, a number of α -tocopherol or rosemary extract concentrations were added to the oil purified with alumina and, through a preliminary determination of the antioxidant activity, the concentrations of 600mg/kg for α -tocoferol and 1000mg/kg for rosemary extract were selected in order to be submitted to the further experiments. In the second and third experiments, the purified oil added with the selected concentrations of the cited antioxidants or the mixture of them and the natural oil added with the selected concentration of rosemary extract were heated until the temperature of 180°C during ten hours. The results obtained from the analytical determinations were submitted to variance analysis, in a

factorial scheme, employing the completely randomized statistical design, in order to determine the influence of antioxidant factors and periods of heating in relation to the oil alterations. From the obtained results, both α -tocopherol and rosemary extract demonstrated having a protecting effect on soybean oil against the oxidation originated by high temperature, but, in all analytical determinations, α -tocopherol action was superior in relation to the one from rosemary extract. The mixture of the two antioxidants, added in purified soybean oil, promoted a higher protecting effect comparing to the one obtained by the application of each one separately. In natural soybean oil, rosemary extract also came to be efficient in delaying oxidation. It was also observed that, during the heating, both natural α -tocopherol and the one added were more stable in the presence of rosemary extract.

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