

Analysis of Physico-chemical Properties and Fatty Acid Composition of Vegetable Oil Blends

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Abstract—An attempt was carried out to improve the physico-chemical properties and fatty acid composition of oil/fats. Omega-3 is present in high amount in linseed oil but it also contains more PUFA content therefore it is more prone to oxidation. To enhance the stability of linseed oil and to balance the fatty acid composition linseed oil was blended with different oils such as mustard oil, sunflower oil, soybean oil, coconut oil, and olive oil. The blend was prepared in different ratio (v/v) 30:70, 40:60, 50:50, 60:40, 70:30 70 respectively. The oil and blends first analyzed for their physico-chemical properties (iodine value, peroxide value, free fatty acid value, viscosity). The composition of fatty acids was analyzed by Gas Chromatography. The analysis shown that the quality of oils/fats samples procured was good. Acid and peroxide values of all samples were found under the standard limits, given by FSSAI (Food Safety and Standard Authority of India). Iodine value of linseed oil was observed higher than other fats/oils, while it was recorded lowest in coconut oil. While, after blending acid value and peroxide value were also showed under limit figure. Iodine value of all the blends was significantly affected, compared to pure oils/fats samples. SFA: MUFA: PUFA content was present in significant amount in the blended samples as compare with pure oil.