

BLENDED OIL: A HEALTHY NUTRITIONAL APPROACH

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INTRODUCTION:

Edible vegetable oils are the main sources of macronutrients, essential fatty acids and essential dietary components in our diet play an important role in maintaining human health. For consumption vegetable oils are the source of essential fatty acids. Essential Fatty acids are those fatty acids which the body cannot synthesize and need to be supplied through diet. Vegetable oils are one of the important component of the daily diet and major source of fat in the diet. Presently there are different types of vegetable oils, but no single edible oil available in the market which has desired fatty acid profile, oxidative stability and desired functional properties. Therefore, fats /oils needed to be altered according to their specific use for consumption and fatty acid composition. It was found that blending of vegetable oils balances fatty acid composition with good functional and nutritional value which confers health benefits.

Oils and fats are used for cooking and frying as well as in food formulations. Most vegetable oils have limited technological application in their original forms because of their specific chemical and physical properties. To enhance their commercial application, vegetable oils are often modified using four different methods; hydrogenation, interesterification, fractionation and blending



Fats and oils provide calories, enhances the flavor of food, induce satiety and improve palatability. Beside that they are required for many physiological functions, transportation of fat soluble vitamins, membrane structure and many other functions. Dietary fats are essential to provide desirable physical, nutritional, organoleptic properties to the food and is mainly used as the cooking medium in different food preparations. Vegetable oils, in general distinguish in their fatty acid composition and No single oil in nature provides all essential fatty acid in optimum amounts as per dietary requirements. Recently, due to increasing awareness about health and food habits the nutritional quality of fats and oils has gained more importance due to their connection with health and coronary diseases.

Edible vegetable oils can be obtained from many sources. Some of the commonly used oils are groundnut oil, mustard oil, sunflower oil, safflower oil, palm oil, olive oil, soybean oil, coconut oil and cotton seed oil and also rice bran oil derived from cereals bran of rice. The nutritional profile of edible vegetable oils depends on the fatty acid composition, degree of unsaturation, arrangement of fatty acid in triglyceride structure. Therefore, healthy and stable oil with a high functional value have gained significance because of changing lifestyle and dietary pattern. In order to improve the nutritional profile, stability, utility of dietary fats and oils could be possible by modification by blending different oils. The Blending of two or more different oils having different composition and functional properties is an economic way to modify fatty acid profile and physicochemical properties.



WHY BLENDING OF OIL?

The blending of edible vegetable oil can provide desired fatty acids in recommended levels. Since the blends have right mix saturated fatty acids (SAFA), monounsaturated fatty acids (MUFA) and polyunsaturated fatty acids (PUFA) including the ω -3 and ω -6 polyunsaturated fatty acids with improved oxidative stability of oil. Natural antioxidants present in oil may reduce the rate of oxidative changes during food frying and storage which ultimately prevent food becoming rancid and improve its shelf life.

No single oil is perfect in respect of nutritional profile. The imbalance in fatty acid profile is due to deficiency in one or more essential fatty acid which are very beneficial for the regulation of lipid metabolism and also help in prevention of cardiovascular diseases (CVDs). Therefore, the ratio of essential fatty acids, i.e. omega-6 (n-6): omega -3 (n-3) is very crucial to meet dietary requirements and in maintaining good health.

According to ICMR-National Institute of Nutrition (NIN), Hyderabad the 'Recommended Dietary Allowance (RDA)' of fat intake for Indians is 30g per day for individual. The fat in the diet must contain all the three types of fatty acids namely, saturated fatty acids (SAFA), monounsaturated fatty acids (MUFA) and polyunsaturated fatty acids (PUFA) including the Omega-3 and Omega-6 polyunsaturated fatty acids. The linoleic (LA ω -6) and alpha linolenic acid (ALA ω -3) are the essential fatty acids. These essential fatty acids are the precursors of several biologically active molecules which are involved in various physiological functions. Oil from a particular source has its own unique composition of different types of fatty acids. The fatty acids in oil may be short chain, medium chain or long chain, and saturated or unsaturated.

The nutritional value of edible oils depends upon the fatty acid profile, degree of unsaturation, arrangement of fatty acid in triglyceride structure. According to World Health Organization (WHO), the healthy oil should have following three characteristics: The ratio of saturated, mono and polyunsaturated should be 1:1.5:1. The ratio of essential fatty acid, linoleic acid (ω -6): linolenic acid (ω -3) should be 5- 10:1 and presence of natural antioxidants.

BENEFITS OF BLENDED VEGETABLE OIL:

- Lowers the Cholesterol Level
- Reduces the risk of coronary heart diseases (CVDs)
- Improve calcium absorption to prevent osteoporosis
- High in natural antioxidant
- Helps to prevent cancer
- Maintain blood pressure level
- Helps to develop good immune system
- Provide essential dietary components

CONCLUSIONS

Blending of vegetable oil is a promising healthy nutritional approach which combines the potency of two or more edible oils and which offers a optimum balance of essential fatty acids. Fats and oil can be designed to provide health promoting properties through blending with balanced fatty acid profile, greater stability and improved natural antioxidant and bioactive compounds. Blended edible vegetable oils may provide a good balance of both MUFAs, PUFAs, SFAs and Omega-3 and Omega-6 essential fatty acids in right proportion to fulfill dietary requirements. It could be recommended that blending of oil help to improve stability and functional properties of oil for food preparation and prevent the oxidative damage of unsaturated fatty acid, maintains a health to prevent various chronic diseases.

