

## High Oleic: The Premium Sunflower Oil

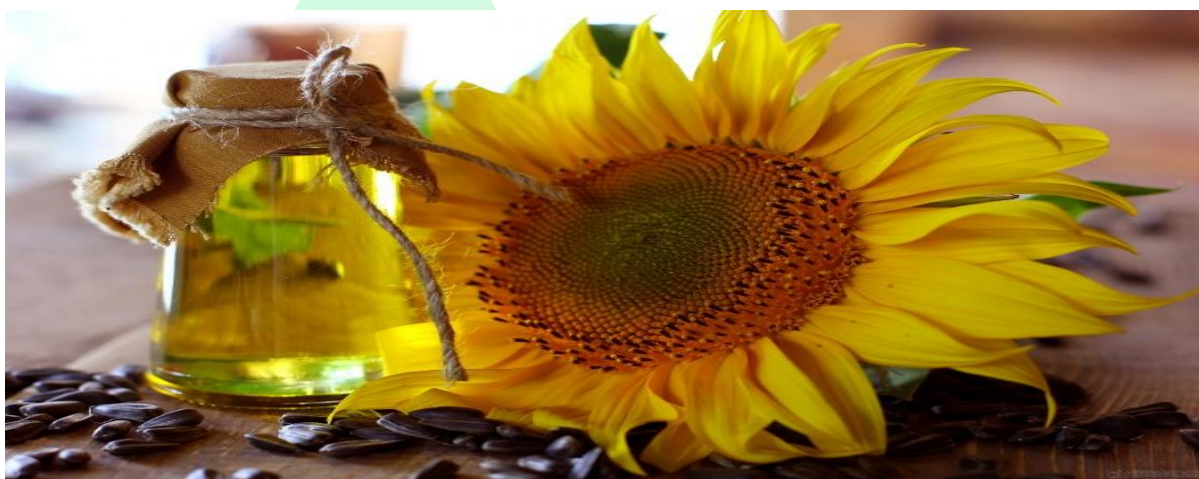
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### Introduction



Sunflower has become an important edible oilseed crop in India due to its wider adaptability, short duration (85-100 days), high yielding potential, less photosensitivity, cross pollinated nature and remunerative market price. In India, it stands in the fourth place with respect to edible vegetable oilseed crop after soybean, groundnut and mustard cultivated with an area of about 3.90 lakh ha with production of 2.80 (lakh tonnes) and the productivity of 738 kg/ha. In India over 70 per cent of the sunflower crop is being grown in Karnataka, Andhra Pradesh and Maharashtra. Karnataka contributes an area of about 1.90 lakh ha with the production of 1.03 lakh tonnes and productivity is about 549 kg/ha.

The standard sunflower oil contains approximately 15 per cent saturated, 85 per cent unsaturated fatty acids, composed of 14–43 per cent oleic and 44–75 per cent linoleic acids. The nutritional and functional properties of oil quality is primarily determined by the fatty acid composition of the oil. Moreover, new emerging markets are demanding changes in oil quality for both food and non-food applications. From the nutritional point of view, saturated

fatty acids, especially palmitic acid is regarded as undesirable for human consumption as it has detrimental atherogenic effect mainly by increasing blood cholesterol level as compared with unsaturated fatty acids. Conversely, the high content of oleic acid increases the oil's stability to oxidative degradation at high temperatures and it is being used particularly in canned food industry and as additive lubricant for cars and textile industry equipment.

### Why We Need High Oleic Sunflower Oil



One advantage of high oleic acid sunflower oil is its higher degree of oxidative stability which is desirable for frying purposes, refining and storage compared to standard sunflower oil with high linoleic acid. From the nutritional point of view, a diet rich in oleic acid has been suggested to reduce cholesterol in blood plasma, in that it lowers low density lipoprotein but not high density lipoprotein and thus reduces the risk of coronary heart disease. Moreover, the FDA has determined the existence of realistic evidence to support a health claim associated to the oleic acid consuming, and to the reduction of coronary heart disease risk. For this reason, in the recent decades, plants with higher oleic acid content (up to 70% and more) have been selected, which opened up a new frontier to the possible uses of these crops taking advance of possible beneficial health effects and triggering at the same time the market interest for its wider use. Similarly, in case of sunflower oil with a high oleic acid content in the range between 70% to 90% is called as “high oleic content” sunflower oil and presents a fatty acid composition similar to that of olive oil.

The research work on high oleic acid has been rejuvenated recently with slow progress in public domain in India. However, no success has been reported regarding high

yielding sunflower hybrid with high oleic acid content in both public as well as in private sector.

### **Conclusion**

The food manufacturing industry's interest in high oleic sunflower oil remains high as dietary recommendations continue to favour increased monounsaturated fatty acid intake along with the reduction in consumption of saturated fats and trans-fatty acids or hydrogenated oils. Consequently, the increase of oleic acid content has become one of the major goals of plant breeders to improve sunflower oil quality. Keeping the above facts in view, plant breeders must aim to improve the sunflower oil quality with altered fatty acid composition by developing high oleic sunflower hybrids which would meet the industrial demands of the country as well as health benefits of the people.

