



Estimation of cholesterol in different vegetable oils

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Introduction :-

Now-a-days people are very conscious about health. Different components make up their balanced diet. Vegetable oils plays important role in the diet. It's very important to choose the correct proper oil so as to include in our diet.

Cholesterol is an important factor which people should look upon while choosing the oil. 'Cholesterol', a lipid plays a vital role in physiological regulation of membrane fluidity and proper functioning of cells. It is also a major precursor in product of bile acids, steroid hormones as well as vitamin D. cholesterol is mainly of two types i.e good & bad cholesterol. Trans fats have adverse effects on blood lipid levels, increasing LDL(bad) cholesterol while decreasing HDL(good) cholesterol. Processing leads to increase in saturated fatty acids components of oils

Materials :-

Different types of oils produced from various oil seeds(oil palm, soya bean, rapeseed, etc) were purchased.

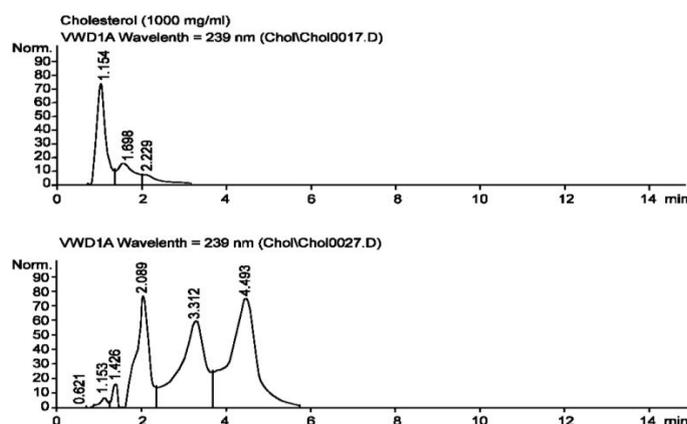
Determination of cholesterol content:-

The cholesterol content was detected using HPLC (High Performance Liquid Chromatography). The oil samples were first saponified with 3% ethanolic KOH and the resulting nonsaponifiable lipids were then dissolved in chloroform and the analysis was carried out immediately. The HPLC analysis was carried out using C18 column, acetonitrile/water(1:1), mobile phase & a UV detector at 239nm.

Observation table:-

Sr no:-	Sample name	Hplc (mg/ml)
1	Sesame	0.57
2	Groundnut	0.44
3	Soya bean	0.839
4	Olive	0.58
5	Palm	0.149

Graph:-



Result:-

The analytical data for cholesterol content of five oil samples from the retail markets are shown in the table. It is observed that among five samples 'soya bean oil' contained highest amount of cholesterol. The another two methods to find the amount of cholesterol in oils are 'Ojiako&Akubugwo' and 'Liebermann-Burchard'. This two methods proposed that Sesame oil is having highest amount of cholesterol content but, our HPLC proved that Sesame oil contain moderate amount of cholesterol.

Conclusion:-

There are so many brands of vegetable oil in markets and many of them claim to be cholesterol free but, it is found that cholesterol is present in vegetable oils, although in small proportion. Due to increasing awareness on the health implications of high cholesterol in our diets, most people now prefer to purchase cholesterol free vegetable oils. Cholesterol has been known as the 'oily killer' since the early-mid 60's, especially since several works then showed that it is the main cause of 'atherosclerotic lesions' which are the major causes of coronary heart disease.

The lipid profile of oils is considered contributory to the risk of Cardiovascular diseases and some oil seeds possess a higher ability to lower the level of low density lipoproteins. The HPLC, due to its sensitivity confirms that there is really no cholesterol free oil in our market.

It is then left to the customer to make up their minds which oil satisfies their culinary needs.

Reference:-

- 1) www.sciencedirect.com
- 2) Advanced Google
- 3) Prof. Manasi Ghamande