

We are going to study about the module vegetable oil sources in that we are going to study about sesame and groundnut.

In this module we are going to see about the introduction of vegetable oils.

We are going to learn about the sources of vegetable oils that is sesame and groundnut.

We will study the methods of obtaining vegetable oils.

We are going to see the identification, botanical description of sesame and groundnut.

We are going to see the cultivation of sesame and groundnut and we're going to learn about the uses of sesame, and groundnut

At the end of this module you will be able to recall the nature of vegetable oils and its sources.

You will be able to explain the methods of extracting vegetable oils.

You will be able to outline the botanical description of sesame and groundnut.

You will be able to describe the cultivation practices of sesame and groundnut and you will be able to list the uses of sesame and groundnut

now vegetable oils.

They are known as fixed or expressed oils.

Now these are triglycerides of fatty acids.

They are present as small insoluble droplets in plant cells.

They are extracted mostly from the seeds and India occupies a prominent place in its production.

So this. picture shows the different vegetable oils which are mostly used in the kitchen for cooking.

Then we will see about the vegetable oil sources
now an oilseed crop is a crop is a crop which yields oil

Now we have different sources or vegetable oils.

We have the sesame,

we have the groundnut, soyabean, coconut mustard, olive, corn and sunflower seed.

Now the method of obtaining vegetable oils in order to obtain vegetable oil, we have the process of cleaning, decortications extraction and refining in cleaning the extraneous material like the dirt, the twigs are removed by screening and passage over magnets.

In decortication. the seed coats are removed with decorticator's, then the kernels are reduced to thin flakes.

Extraction involves mechanical expression or solvent extraction.

And in refining the process. It's a process to get rid of the impurities like water, dirt, pigments etc.

Now the extraction methods of vegetable oil.

We have the mechanical pressure or the mechanical extraction method, and we have the solvent extraction.

Now in mechanical expression, wherein a pressure is applied to the oil bearing tissue.

This is done using hydraulic pressing or screw pressing OK wherein the flaky material is placed in sacks

Now this follows the hot expression or the cold expression.

So either we follow the hot expression wherein.

Preheating of kernels with steam is done.

This is a more commonly used method, and we have the cold expression wherein the kernel are pressed without steaming.

So nowadays this cold pressed oil is highly in demand because it is more healthier.

OK, but the hot expression is a more commonly used method then we have the solvent extraction, where in we employ the solvent like gasoline, benzene, carbon disulfide.

Then it's a practical method for recovering oil from tissues having low proportion of oil.

It is effective, but it is expensive

Solvent. Now this solvent must have access to the oil bearing cells and the fatty oils are freed from the

extracting solvents by distillation.

So now we will study the sesame as a source of vegetable oil.

The scientific name is *Sesamum indicum*.

It is one of the oldest oilseed crops used and it is the only cultivated species in the genus *Sesame*.

The family is Pedaliaceae.

And India is one of the leading producers.

Now this is the plant of sesame.

It is a herb of which it has a hairy stem.

Now it has two types of leaves that is the leaves on top are lanceolate whereas the leaves down are ovate and broad,

then it has these flowers which might be white or purple in color.

Then it has the fruit which is a pod which has a beak.

It has a beak OK and inside the pod we have these sesame seeds.

OK, now these sesame seeds yield the sesame oil
now these sesame seeds are pear shaped

They are flat.

They might be black or white in color.

Then the cultivation practices.

It is a crop of hot, dry tropics resistant to drought
In India, it is raised as a kharif crop.

It is propagated through seeds and harvested through hand sickles.

OK, now the sesame oil is the finest quality oil

It has a very high percentage of unsaturated fatty acids, high oil content.

It has protein and it is a source of minerals.

This oil contains sesamin, sesamol, Sesamol yields an antioxidant sesamol.

Now the fatty acid composition of this oil is oleic, linoleic. Palmitic and stearic acid. so this is a fatty acid composition.

Then the uses of sesame oil for edible purposes.

It is used in the manufacture of cooking fat, margarine and as salad oil. than industrially.

It is used in soap and paint industries as a lubricant, then an illuminant In India the oil forms the basis of scented oils in perfume,

now medicinally it is used as a carrier or suspending agent, for antibiotics, vitamins, steroid hormones.

It also has anti-aging properties.

OK, next source of vegetable oils is the groundnut that is a *Arachis hypogaea*.

It is commonly called as peanut or earthnut.

It is basically a legume and belongs to family Fabaceae.

Now the members of Family families they help to fix atmospheric nitrogen.

Now this is the picture showing the habit of groundnut.

It is it is a small shrubby plant.

It has the pods are born inside the soil.

Now this is the groundnut flower and this is the ground nut fruit.

Now it is a Geocarpic fruit that is the ovary.grows towards the soil,

When it the fruit which is the soil or is embedded it stops growing downwards and it grows

horizontally. So this is the one of the main characteristics of groundnut that is it has a geocarpic fruit.

that is the ovaries.They grow towards the soil.

This is the uprooted groundnut pod which contains this groundnut pods.

These are the groundnut pods and these are the groundnut seeds and this is the groundnut oil.
now we have two varieties bunch or the erect.

Type wherein all the groundnuts are born in the cluster near the base,

whereas runner spreading type is the all the pods are per born horizontally.

It is the second largest source of vegetable oils and one of the leading producers is our country that is India

Now the cultivation practices.

It is cultivated in tropical subtropical regions all over the world.

It is a warm season crop.

It is propagated through whole pods, seeds or cuttings and it is harvested manually

Now Groundnut oil.

It has a very high calorific value.

It is easily digestible than it has the highest biological value among vegetable proteins and due to its nutritious and flavorful.

It is known it is.

It is considered as a food commodity.

Now the principle fatty acid present are only linolenic palmitic, arachidic acid and protein arachin is present in Groundnut oil

now the groundnut oil is used for edible purposes.

It is used in deep fat frying because of its high smoke point.

Cooking it is used as a cooking and as salad oil in the preparation of margarine, mayonnaise and in , shortening.

It has a roasted peanut flavour and a nutty aroma.

Therefore it is used in flavoring, confections, sauces and breakfast cereals

In India, a very high percentage of total production is used for the manufacture of vegetable ghee by hydrogenation.

Now industrial use lower grade of this oil is used in the manufacture of soaps, lubricants and illuminant and medicinally

This oil has laxative and emollient properties.

OK, so in this module we studied that vegetable oils are triglycerides which are insoluble oil droplets, mostly extracted from the seeds using two methods that is a solvent extraction and the mechanical expression.

Now these oils are used in cooking.

They are used in industries and also

They have medicinal value

sesame and groundnut are two very important and commonly used vegetable oil sources.

These are the references

These are the additional references,

Thank you.