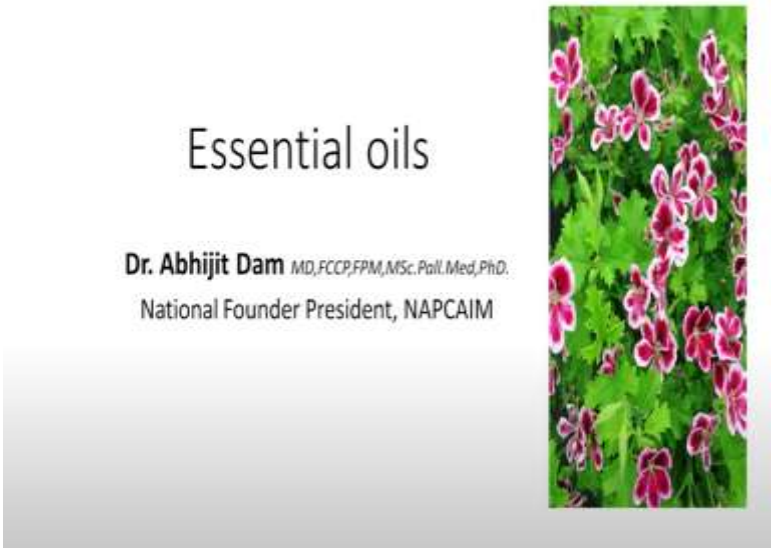
Certificate in Integrative Palliative Care – 3

Dr. Geeta Joshi
Dr. Piyush Gupta
Dr. Col. Yashavant Joshi
International Institute of Distance Learning
Indian Institute of Technology, Kanpur

Week-07

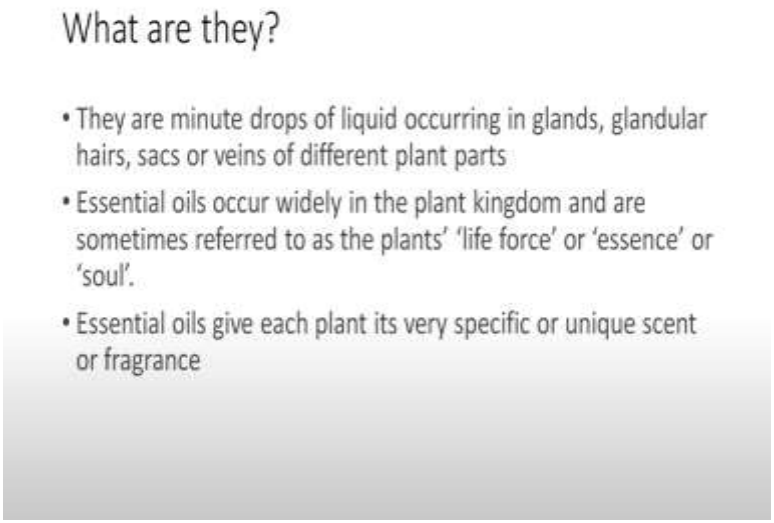
Lecture 56: Essential Oils in Aroma Therapy

(Refer Slide Time: 00:15)



Namaskar, my name is Dr. Abhijit Dam and I am the President of the National Association of Palliative Care for Ayush and Integrative Medicine and today in our second series of lecture we would continue with essential oils, we would try to find out what exactly essential oils are and how they can be used in medicinal practice. Now if you look at the photograph on the right hand side of the slide, well this is the citronella plant. Every part of this plant can be used for extracting essential oils, right.

(Refer Slide Time: 00:55)



So, what exactly are essential oils? They are minute drops of liquid which occur in the glands, glandular hairs, sac or veins of different parts of the plant. Essential oils occur widely in the plant kingdom and are sometimes referred to as the plant's life force or essence or the soul of the plant.

That is why they are called essential oils, because they form an essential part of the plant. Essential oils give each plant its very specific or unique scent or fragrance.

(Refer Slide Time: 01:30)

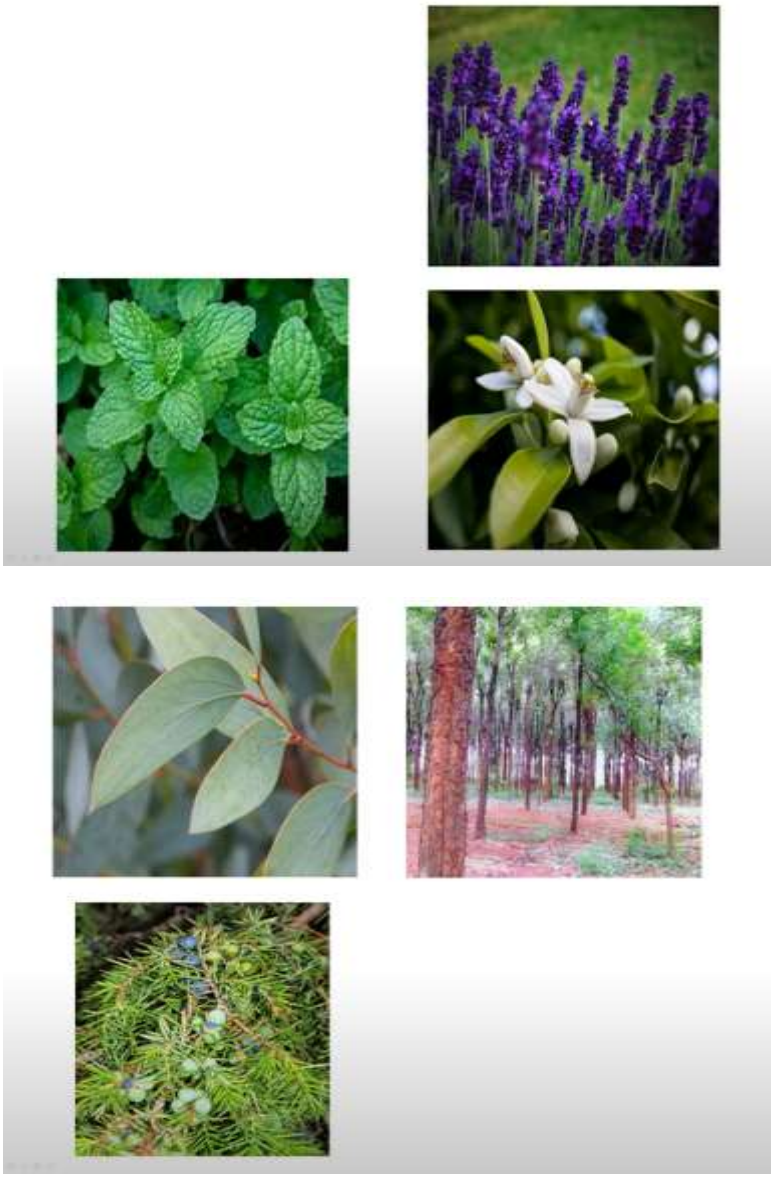
Essential oil droplets are a mixture of complex organic compounds, right, when you come to the chemistry of it. So, when extracted, they are highly concentrated and highly fragrant.

Essential oils are volatile, so that if ever you start off with aromatherapy practices, whenever you get an essential oil, they come in very small bottles, they are very expensive, I will tell you why and they are usually stored in dark colored bottles and you are supposed to store them in a cool dark place. Essential oils are soluble in oils, fats and pure alcohol, but they are partially or non-soluble in water. Essential oils are also flammable, so be very careful. You know should not keep them near flammable substances and they are natural. Of course nowadays synthetic essential oils have been have started being manufactured and they cannot be called essential oils at all because they are synthetic. Essential oils by virtue should be natural.

(Refer Slide Time: 02:30)

So where are essential oils found? They could be found on the flowers like in chamomile, lavender, neroli, rose, this is the rose flower out here. In the leaves like in the eucalyptus, peppermint, in the wood like cedar wood, rosewood, sandalwood, in the fruits like bergamot, grapefruit, lemon, orange, in berries like black pepper, juniper.

(Refer Slide Time: 02:55)



So, out here if you see, so this is lavender and this is peppermint, this is neroli and these are eucalyptus leaves, these are red sandalwood trees and these are juniper berries, this is bergamot.

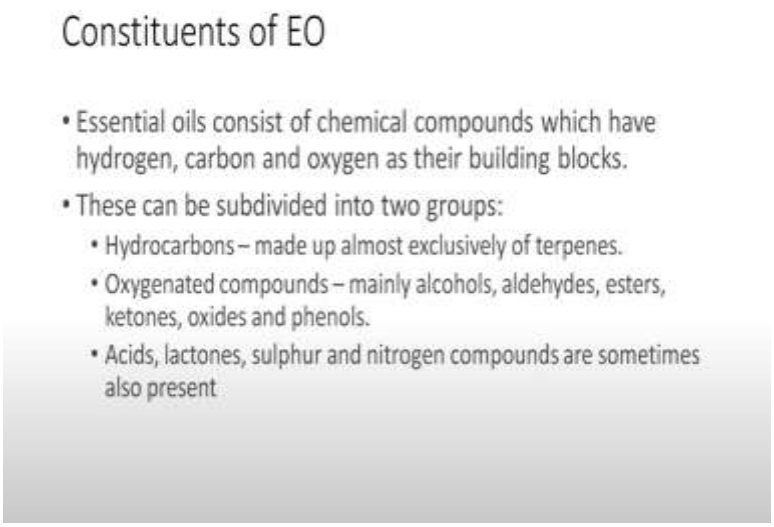
(Refer Slide Time: 03:20)

So, essential oils could also be found in twigs like in petitgrain, in the roots like angelica, ginger, in seeds like angelica, cardamom, carrot, nutmeg, in gums like myrrh this is the gum.

This is gum basically are the resins of plants. This is myrrh and this is citronella as I said

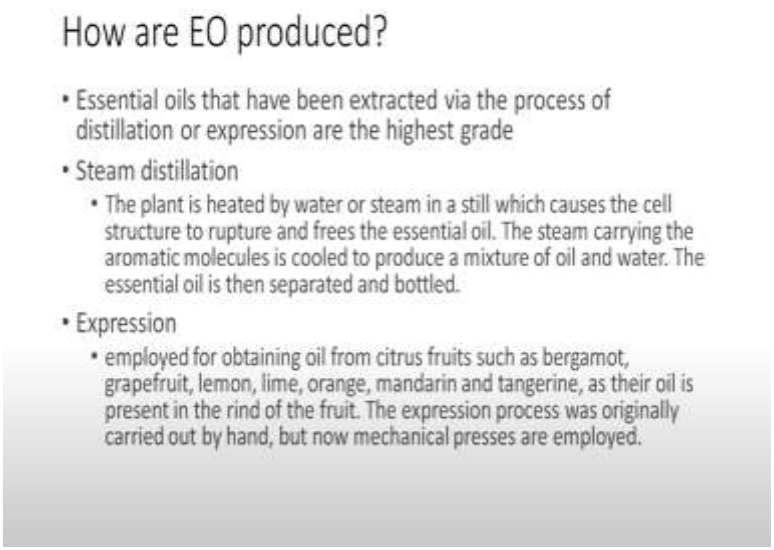
the whole plant like citronella, lemongrass, angelica, seed oil and root oil, cinnamon, leaf oil and bark oil, cloves that is leaf oil and bud oil.

(Refer Slide Time: 04:00)



So, what are the constituents of essential oils? Essential oils consist of chemical compounds which have hydrogen, carbon and oxygen as their building blocks. These can be subdivided into two groups basically, the first being hydrocarbons which are made up almost exclusively of terpenes and oxygenated compounds like alcohols, aldehydes, esters, ketones, oxides and phenols. Acid, lactone, sulphur and nitrogen compounds are also sometimes they can also be present.

(Refer Slide Time: 04:30)



But hydrocarbons and oxygenated compounds would definitely be present. So how are essential oil produced? Essential oils that have been extracted via the process of distillation or expression are the highest grade. Steam distillation. So, I in my previous lecture I had already explained about steam distillation, but we will come to it again. The plant is heated by water or steam in a still which causes the cell structure to rupture and which frees the essential oil.

The steam carrying the aromatic molecules is then cooled to produce a mixture of oil and water. The essential oil is then separated and bottled and second procedure is expression. It is employed for obtaining oil from citrus fruits such as bergamot, grapefruit, lemon, lime, orange, mandarin, tangerine as their oil is present in the rind of fruit like you must all have peeled oranges. So, when you peel oranges you can feel the aroma coming in. So, that was expression.

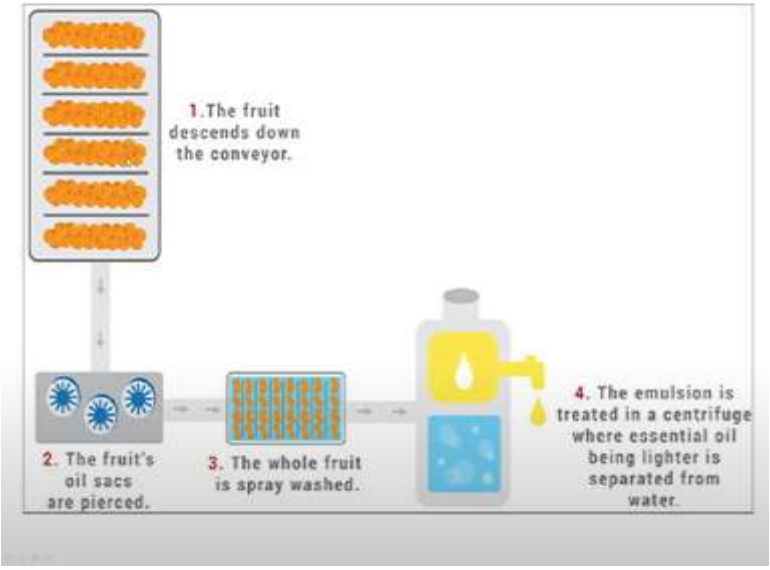
So, as you peel the oil sacks they rupture and the fragrance is liberated. The expression process was originally carried out by hand, but now mechanical processes are employed.

(Refer Slide Time: 05:40)

So, this is again the still distillation. I had explained this in my previous lecture. You can go through it again.

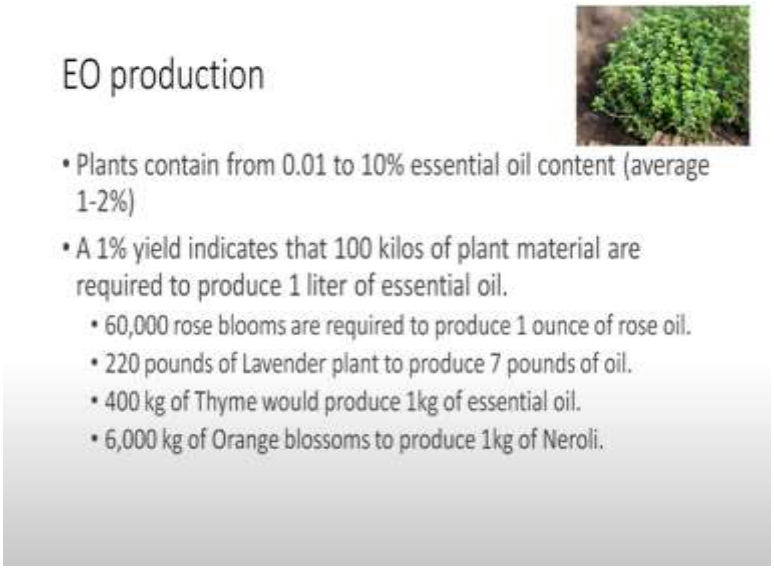
And so, this is the process of still distillation and this is the process of extraction. So in the extraction process you see the first the fruit is on a conveyor belt, it descends down and then the fruit oil sacks are then pierced. The oil sacks are removed and the whole fruit is spray washed and then the emulsion is treated in a centrifuge where the essential oil being lighter is separated from the water.

(Refer Slide Time: 05:50)



So this is the process of extraction.

(Refer Slide Time: 06:20)

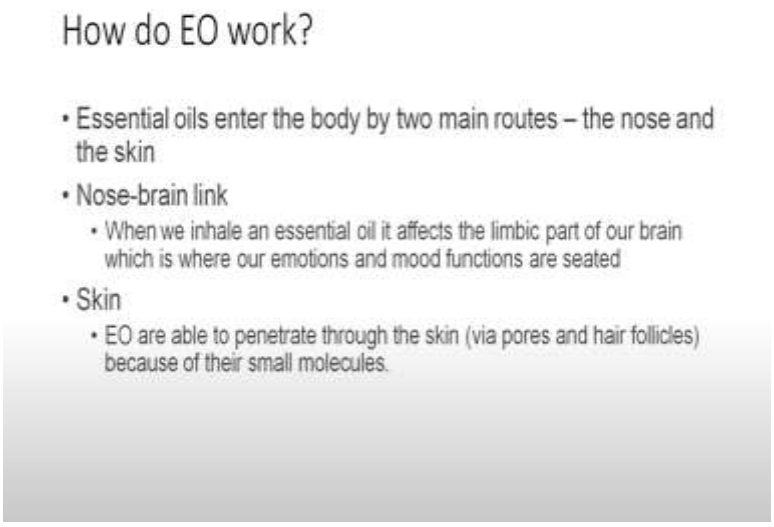


Now, essential oils production, the plant contains from 0.

01 to 10 percent of essential oil content. So average 1 to 2 percent essential oil is present in plants. A 1 percent yield indicates that 100 kilos of plant material are required to produce 1 liter of essential oil. Like 60,000 rose blooms are required to produce 1 ounce of rose oil. So you can just imagine how tedious and difficult process it is.

Sixty thousand roses will just produce one ounce of rose oil and naturally essential oils are so expensive, right. So, two hundred and twenty pounds of lavender plant will produce seven pounds of oil. So, naturally these are very very expensive essential oils and if anybody is selling essential oils very cheap to you. Then you should be aware, immediately you should be suspicious because nobody can afford to give you essential oils at a cheaper price and essential oils are always natural.

(Refer Slide Time: 07:25)



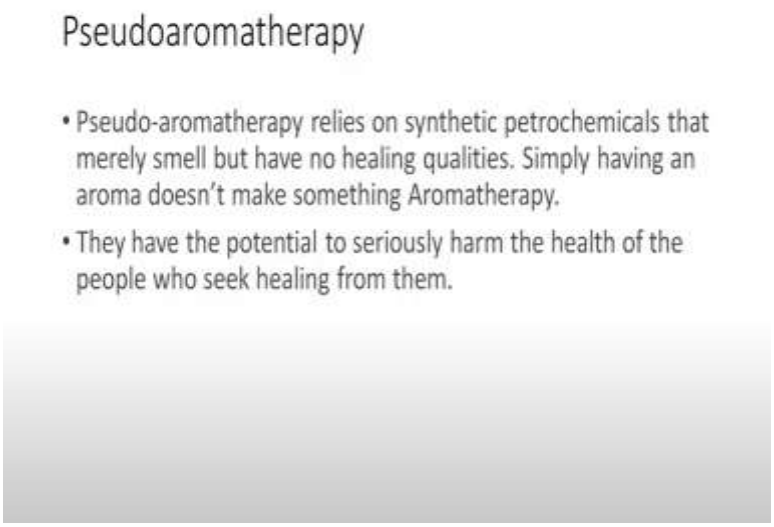
So, how do essential oil work? So, essential oils enter the body by two main routes, one is the nose and second is by the skin.

The nose, the olfactory receptors in the nose are directly linked to the brain. Right, as we inhale the essential oil it affects the limbic part it goes to the limbic system of our brain which is where our emotions and mood functions are seated. So essential oil would also affect your mood functions right and it can also go through the skin essential oils are able to penetrate the stratum corneosum layer between the stratum corneosum layer it will percolate through via pores and hair follicles and because of their small molecular size.

(Refer Slide Time: 08:15)

This is how, this lady is sniffing the essential oil, she is feeling the aroma of the essential oil and you can see her eyes are actually closed in a sense of pleasure.

(Refer Slide Time: 08:25)



Then there is something called pseudoaromatherapy.

Pseudoaromatherapy relies on synthetic petrochemicals that merely smell but do not have any healing qualities, naturally they cannot have healing qualities. Essential oils are natural compounds extracted from plants and suppose I sitting out here I extract essential oil from a rose plant and you say you are in England and you extract essential oil from rose sitting in England, both our essential oils would differ. Because the type of rose grown in India would differ from the type and species of rose grown in England. So, there would be a difference in the same rose essential oil which is extracted from two different sources, but in pseudo aromatherapy where chemicals are used the nature would be the same because you use the same formula everywhere. So, that is pseudo aromatherapy right.

Simply having an aroma does not make something aromatherapy. They have the potential to seriously harm the health of the people who are seeking healing from them. So pseudoaromatherapy is a strong no. Do not use synthetic compounds for aromatherapy. Thank you.