Hello students. In the previous module,

that is model number one, we have already

studied what are meristematic tissue,

different types and how these meristematic

tissue helps in the formation of root apex.

Now in this particular presentation that

is model number two, we will going to

see about the shoot apical meristem.

Myself, Dr. Suraksha, Dongrekar

assistant professor,

Saint Xavier College Mapusa Goa.

Outline. Meristematic tissue system.

Significance and regulation of tissue

differentiation in shoot apex.

Learning outcomes the students will be able

to explain the shoot apical meristems,

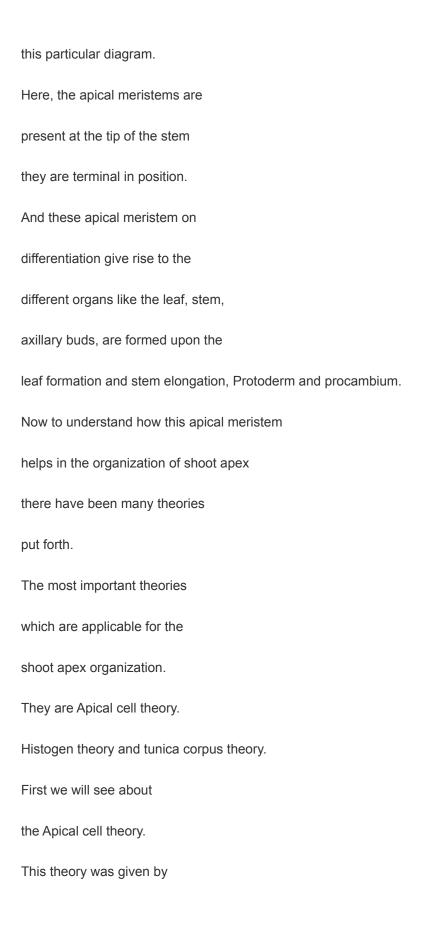
an outline, different theories

in shoot apex differentiation.

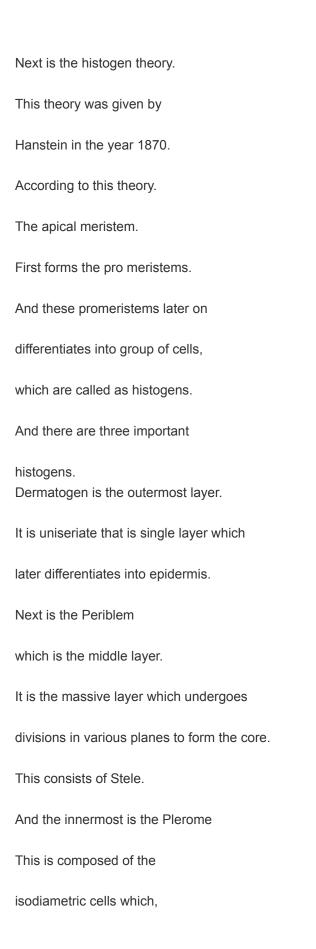
Shoot apical meristem is also

called as the shoot apex.

If you see the structure in



Hofmeister in the year 1957. So according to this theory, apical meristem is made up of a single apical cell. This apical cell undergoes posterior division. And forms various tissues of the shoot apex. This particular theory has a drawback as it is applicable only in the cryptogames, like in algae, bryophytes, and pteridophytes. So if you see here in this particular diagram. This is the typical cell which undergoes the posterior division and forms into the various derivatives. These derivatives later on, upon differentiation, give rise to the different organs of the shoot apex. Like for example the leaf primordia.



upon differentiation, forms the cortex. So as you see in this schematic diagram, if you see the outermost layer that is Dermatogen Undergoes division in two planes and forms the uniseriate layer which is called as the epidermis. Next is the periblem is the middle layer which undergoes divisions in various planes. And forms in central massive Core which gives rise to the Steeler region. The innermost is Plerome which undergoes division in only one plane and give rise to the. Cortex. Next is the Tunica corpus theory which was given by Schmidt in the year 1924. According to Tunica corpus theory, there are two distinct zones

in the meristematic zone of shoot apex. The Tunica, which is the cover and the corpus which is the central core. Tunica is made up of smaller cells. They are single layered and these Upon differentiation give rise to epidermis which helps in the growth of the surface. Then second is the corpus, which is the central core layer. It is made up of larger cells which are irregularly arranged and they divide in various planes to form the hypodermis and the vascular system. As you can see in this particular schematic diagram, The outermost is the tunica layer. This undergoes division in two planes and

forms the outermost single layer epidermis.

An the corpus,

which is the innermost layer,

undergoes division in various planes

to form the ground issue, that is,

the vascular system and the hypodermis.

So students in this particular presentation,

we have seen how The apical meristem divides and

differentiates to form the shoot apex.

So here are some of the references.

Thank you.