Hello students

I am Dr. Jyoti Vaingankar,

Assistant Professor at P.E.S.'s R.S.N College

of Arts and Science, Farmagudi, Goa.

I am here to take a module for the Programme,

Bachelor of Science in the subject Botany.

Course title is Biodiversity II

And title of the unit is Classification.

Name of the module is Study of families

Lamiaceae, Liliaceae and Poaceae.

In this module you will study

about the diagnostic characters of

Lamiaceae,

diagnostic characters of Liliaceae and

diagnostic characters of Poaceae.

At the end of this module you

will be able to describe the

diagnostic characters of Lamiaceae,

explain the diagnostic characters

of Liliaceae and state diagnostic

characters of Poaceae.

Lamiaceae family is also called as Labiatae family.

Let us start with the classification.

It belongs to class Dicotyledonae, subclass

Gamopetalae, series is Bicarpellatae,

order is Lamiales and family is Lamiaceae

or Labiatae family.

It is commonly called as ‘mint family’.

It includes 264 genera and 6990 species.

It is worldwide in distribution, largely

concentrated in the Mediterranean region.

The Major genera which are included

under this family are *Salvia, Ocimum,*

Mentha, Tectona, etc.

Now let us start with

diagnostic characters of Lamiaceae family.

The plants are mostly aromatic herbs or

shrubs, sometimes small or large trees.

Rarely climbers, stem is four angled.

Suckers or stolons are present.

Sometimes green and assimilatory,

with glandular hairs present.

Leaves are opposite,

rarely alternate simple or pinnate compound,

usually aromatic and sometimes reduced.

Stipules are absent.

Inflorescence is Verticillaster,

arranged in raceme,

spike or panicle.

Flowers are bracteate or

Ebracteate, bisexual, zygomorphic,

hypogynous and bilabiate.

Calyx consists of five sepals

which are united, bilabiate,

and it is persistent.

Corolla consist of five petals united,

bilabiate, upper lip sometimes absent.

Rarely, Corolla is four lobed.

Androecium consists of two

stamens or four, epipetalous, didynamous, inserted in corolla tube.

Filaments are free and dehiscence is longitudinal.

Gynoecium consist of two united carpels,

ovary is superior, bilocular, ovules

two in each chamber, anatropous.

Placentation is axile.

Ovules are attached to the sides of the

false septa, ovary four lobed.

Style one, gynobasic, ovary is

present on a nectary disc.

Fruit is a schizocarp or carcerulus.

Seed contains straight embryo and

endosperm is minute or it is absent.

Now let us study about the diagnostic

characters of Liliaceae family.

Let us start with the classification.

It belongs to class Monocotyledonae, series is Coronariae,

Order is Lilliales and the family is Lilliaceae.

It is commonly known as Lily family.

It includes 11

genera and 545 species.

It is distributed in Northern Hemisphere,

mainly in the temperate region.

Major genera which are included

under this family are *Fritillaria,*

Gagea, Lillium, Tulipa, etc.

Now let us start with the diagnostic

characters of Liliaceae family.

The plants are mostly perennial

herbs with underground bulbs.

Leaves are basal, alternate of whorled,

usually linear or strap shaped,

simple entire and venation is parallel.

Stipules are absent.

Inflorescence is usually racemose.

Sometimes solitary or sub

Umbellate. Flowers are showy,

bisexual actinomorphic.

Rarely they are zygomorphic

trimerous and hypogynous.

Parianth consists of six tepals

which are arranged in two whorls.

Both whorls are petaloid and often spotted

or with lines, often united into tube,

and nectary is present

at the base of tepal.

Androecium consists of six

stamens in two whorls.

They are epiphyllous and filaments are free.

Gynoecium consist of three

carpels which are united, ovary is

superior and it is trilocular

with many ovules,

placentation is axile and style is simple,

with three lobed stigma.

Fruit is a loculicidal

capsule, rarely a berry.

Seeds contains small embryo

and endosperm is copious.

Now let us start with the last

family that is Poaceae family.

It belongs to class Monocotyledonae,

series Glumaceae, order is Poales

and family is Poaceae or Gramineae.

It is commonly called as grass family.

It includes 656 genera and 9975 species.

It is distributed worldwide in all

types of climates and habitats.

Major genera which are

included in this family are *Poa,*

Panicum, Bambusa, Arundinaria, etc.

Let us start with the study of

diagnostic characters of Poaceae family.

The plants are mostly herbs or

rarely woody shrubs or trees

with rhizomes, stolons or runners,

and frequently tillering to

form tufts of stems.

Stem shows hollow internodes and jointed

swollen nodes with silica bodies.

Leaves are distichous,

Alternate, simple, basal sheath surrounding,

internode and free linear blade.

A ligule is present at the junction of blade

and sheath, margins of sheath overlapping.

United into a tube and venation is parallel.

Stipules are absent.

Inflorescence is spikelets arranged

in racemes, panicles or spikes.

Each spikelet is with two glumes

enclosing one or more florets.

borne on an axis called as rachilla in two rows.

Flowers are small and they are reduced,

zygomorphic rarely actinomorphic,

usually bisexual, rarely unisexual.

Hypogynous enclosed in lemma and palea, lemma

often bearing dorsal, subterminal or

terminal awn or awn is absent.

Perianth is absent

or it is represented by two

or rarely three lodicules.

Androecium consist of three stamens,

sometimes 6 or even more, rarely 1 to 2.

Filaments are free anthers are dithecous,

basifixed usually sagittate

and dehiscence is longitudinal.

Gynoecium consists of bicarpillary

or tricarpillary ovary, syncarpous, or monocapillary, unilocular with one ovule.

Placenntation is basal, styles 2,

sometimes three and rarely one

and stigma is often feathery.

Fruit is a caryopsis,

rarely a nut or berry.

Seeds are fused with pericarp.

Embryo is straight and endosperm is starchy.

These are the references used for

the preparation of this module.

This is an additional reference.

Thank you.