OBJECTIVE: To determine vein-islet number of given sample of leaf by using stage micrometer.

Requirements: Compound microscope, Stage micrometer, camera lucida , Drawing board, Black sheet, White pencil, Glycerin

Theory :

The mesophyll of the leaf in dicot leaves into small portions by branching of the veins throughout the tissues. The small areas of the green tissue outlined by the veinlets are termed as veinlets.

1.Vein islet number :

It is defined as the number of vein islet per sq mm of the leaf surface midway between the midrib and the margin. It is constant for a given species of the plant and is used as a characteristic for the identification of the allied species. Levin in1929 determined vein-islet numbers of tye several dicot leaves.

2.Veinlet termination number :

It is defined as the veinlet termination per sq mm of the leaf surface midway between the midrib and the margin. A veinlet termination is the ultimate free termination of veinlet. Hall and Melville in 1951 determined veinlet termination number of distinguishing between Indian and Alexandrian senna.

Procedure : (Vein-Islet and Veinlet termination)

1. Clear the pieces of leaf by boiling in chloral hydrate solution for about 30 minutes. Remove the upper and lower epidermis
2. Set up the camera lucida and divide the paper into squares of 1 sq mm by means of the stage micrometer.
3. Replace the stage micrometer by cleared leaf preparation and trace the veins in four continuous squares, either in a square of 2mm X 2mm or a rectangular of 1mm X 4mm . Trace the vein-islet and veinlet terminations by looking through a microscope when super imposed image of the leaf is seen at the same time.
4. Count the number of vein-islet and veinlet termination present within the square
5. Divide the total number of Vein– islets and veinlet termination numbers in four adjoining squares by 4 in order to get the value for one sq.mm
6. Record the observations in the form of range and also indicate the mean value

Observations :

1.No.of the vein-islets present in 0.5 mm =----------

2. No.of the veinlet termination present in 0.5 mm =----------

Calculations :

1.For Vein -Islets :

No..of vein -islets present in 0.5 mm = ---------

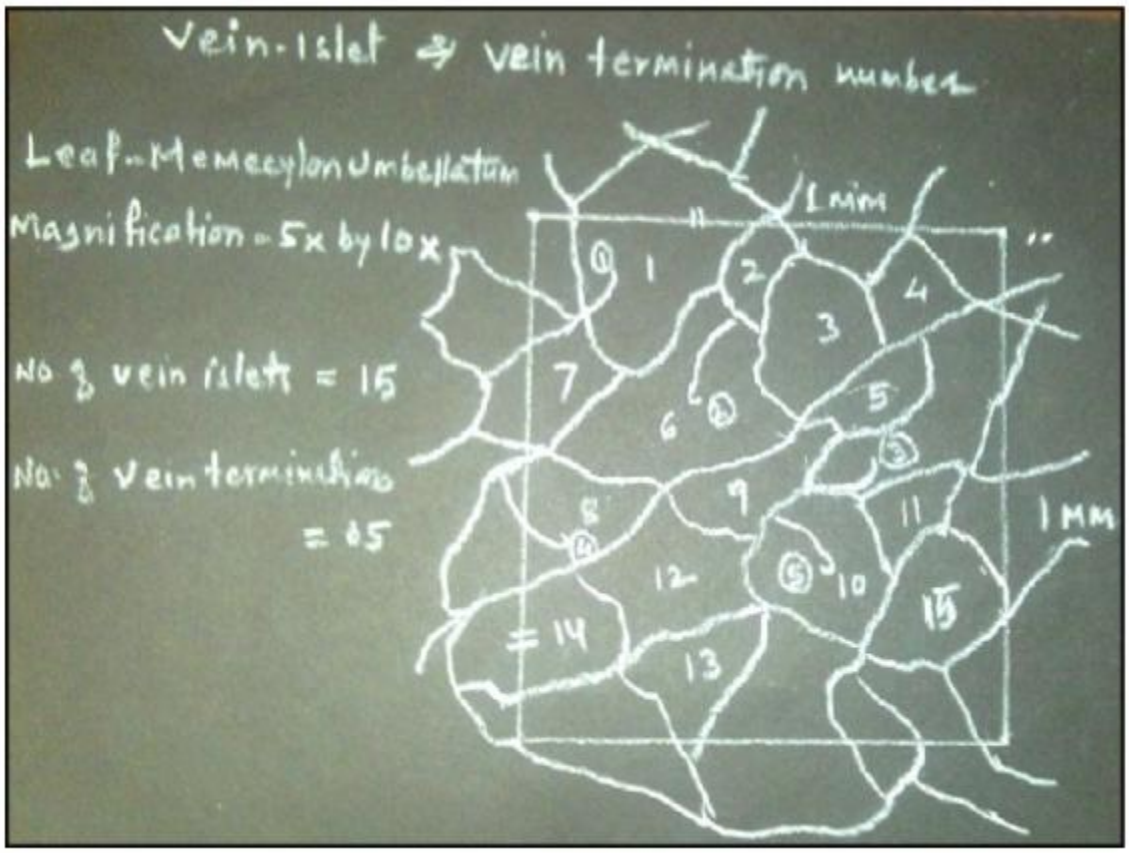
No. of vein-islets present in 1 sq mm = X

X = -------

3. For veinlet termination :

No.of veinlet terminations present in 0.5mm =-----

No.of veinlet termination in 1 sq mm = X


Vein-islet & vein termination number
Leaf - Memecylon Umbellatum
Magnification - 5x by 10x
No of vein islets = 15
No of vein termination = 65
1 MM
1 MM