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Vein Islet and Vein Termination Numbers

Experiment 9 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To count vein islets and free vein endings in a calibrated area of a suitable leaf preparation.

Principle

A vein islet is a small area enclosed by the ultimate vein network. A vein termination is a free vein ending within the network. Quantitative leaf characters are measured in a known area and specified region; a whole-leaf count is a different measurement.

Requirements

- Authenticated leaf and instructor-cleared, stained teaching preparation.
- Microscope, stage micrometer or calibrated area grid and drawing sheet.

Procedure

1. Choose the region

Record the leaf identity, maturity and selected lamina region. Avoid the main midrib unless the prescribed method includes it.

2. Calibrate

Define the counted area, usually expressed in mm^2 . Draw or record the field boundary.

3. Count islets

Identify enclosed areas and apply the prescribed boundary convention. Do not count an open area as a complete islet.

4. Count terminations

Count the visible free endings in the defined area. Distinguish a genuine ending from a cut or poorly cleared vein.

5. Repeat and calculate

Use representative fields and express islets and terminations per mm^2 , with the number of fields and counting convention stated.

Introduction to Pharmacognosy

Observations and Record

Field	Area / islets	Terminations
1	___ mm ² / ___	___
2	___ mm ² / ___	___
3	___ mm ² / ___	___

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- In a 0.5 mm² field, 12 counted islets correspond to $12 \div 0.5 = 24$ islets/mm².
- If 8 free endings occur in the same field, vein termination number = $8 \div 0.5 = 16$ /mm².
- Replicate field values should be summarised by the prescribed method rather than selecting the field that best matches an expected value.

Result

Vein islet number = ___/mm² and vein termination number = ___/mm² in the specified region.

Precautions

- Use a sufficiently cleared preparation; hidden veins can change counts.
- Use one stated boundary convention for all fields.
- Do not confuse processing breaks with natural vein endings.

Viva Questions and Answers

1. What is a vein islet?

An area enclosed by the small vein network.

2. What is a vein termination?

A free vein ending within the lamina network.

3. Why state the leaf region?

Vein patterns and counts may differ across the leaf.

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