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Evaluation of Field and Market Herbal Materials

Experiment 16 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To compare authenticated and market/field material against the applicable pharmacopoeial monograph.

Principle

Herbal quality requires correct botanical identity, suitable plant part and compliance with defined analytical limits. Similar appearance or a traditional trade name does not alone establish identity or quality.

Requirements

- Permission-collected field material or purchased labelled material, authenticated comparison material and the current monograph supplied by the college.
- Record sheets, microscopy equipment and the apparatus/reagents for the selected official quality tests.

Procedure

1. Document origin

Record supplier/location, date, batch, trade name, stated species and plant part. Collect only with permission; maintain a voucher or authenticated record.

2. Check identity

Compare macroscopic and microscopic features and the specified chromatographic identity test. Record substitution, wrong organ and foreign material separately.

3. Apply tests

Follow the monograph's exact methods for applicable foreign matter, loss on drying, ash and extractive values. Record edition, method and basis of calculation in the laboratory record.

4. Read limits

Enter each actual monograph limit with its unit and dry/as-is basis. Do not use a generic limit borrowed from another drug.

5. Compare batches

Prepare a result-versus-limit table for each field/market lot and authenticated comparison. Consider storage, moisture, exhausted material and contamination.

6. Conclude

State supported identity, tests meeting limits, tests failing limits and tests not performed. Untested contaminant limits cannot be reported as compliant.

Pharmacognosy and Phytochemistry

Observations and Record

Test / method	Observed value	Actual monograph limit / decision
Identity / botanical part	_____	_____
Foreign matter / loss on drying	_____	_____
Ash / extractive value	_____	_____
Other required checks not performed	_____	Not assessed

Worked Example

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

- Teaching example only: if an assigned maximum is 10.0% and a result is 12.0% on the same basis, that test fails the limit. These numbers are not a real limit for any named herb.

Result

Summarise identity and each tested quality requirement without claiming compliance for unperformed tests.

Precautions

- Use authenticated, labelled teaching material and instructor-prepared reagents. Wear the protection specified for the chemical method.
- Compare with a known control and record actual observations. A single colour, precipitate or odour description cannot authenticate a crude drug.
- Do not taste botanical material or directly inhale vapours; dispose of solvents and staining reagents in their assigned waste containers.

Viva Questions and Answers**1. Why keep a voucher record?**

It connects later tests to an authenticated botanical source.

2. Why must the calculation basis match?

Dry-basis and as-is percentages are not directly interchangeable.

3. Can an identity pass prove all quality requirements?

No. Purity, contaminants and other required tests remain separate.

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