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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.

## 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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