

Determination of Moisture Content of Crude Drugs

Practical 15 | Pharmacognosy and Phytochemistry I

Aim

To determine Moisture Content of Crude Drugs, and interpret the recorded observations.

Principle

- Water-specific methods and loss on drying are different measurements. Volatile oils can contribute to a drying loss in some crude drugs.
- The property is obtained from a defined observable under controlled conditions.
- Replicate measurements, instrument checks and consistent units are needed before comparison.

Materials and Apparatus

- Assigned drug and the specified moisture or drying method.
- Assigned test material and calibration or comparison material.
- The apparatus specified for this property, a balance or volumetric equipment where relevant, and a record sheet.

Method

1. Identify the measured property, units and controlled variables before setting up the apparatus.
2. Check the instrument, zero or calibration and record the relevant operating conditions.
3. Prepare a representative measured portion without changing its intended composition.
4. Obtain the readings specified for the property and repeat under the same conditions.
5. Calculate the required property, including corrections stated for the apparatus or method.
6. Summarize the replicate results and explain the effect of the variable studied.

Observation Record

Complete this record using actual laboratory findings or the provided teaching data.

Observation / parameter	Record / finding
Initial mass	_____
Final mass or water reading	_____
Method	_____
Reporting basis	_____

Calculations and Interpretation

- For the assigned LOD method: $\text{loss (\%)} = \text{mass loss/initial material mass} \times 100$.
- Use a water-specific equation only for the stated water-specific method.

Result

Record the actual finding, calculated value with units where relevant, and a conclusion supported by the observations.

Finding: _____

Conclusion: _____

Precautions

- Keep temperature and test conditions consistent across comparative readings.
- Record raw readings before rounding calculated values.
- Do not compare results obtained with different methods as if they were interchangeable.

Viva Questions

1. Why control the test conditions?

A change in conditions may alter the measured property independently of the intended variable.

2. Why retain replicate readings?

They show repeatability and help identify an anomalous measurement.

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