Preparation of Tablets

Experiment 1 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To prepare and compare the assigned wet-granulated, directly compressed, soluble and chewable tablets.

Principle

Tablet manufacture requires a blend with suitable flow, compressibility and content uniformity. Formulation and processing affect tablet performance.

Requirements

- Institution-approved tablet master formulas and non-hazardous teaching ingredients.
- Mixing, granulation, drying, sieving and supervised tablet-compression equipment.

Procedure

1. Calculate and identify roles

Record active ingredient, diluent, binder, disintegrant, lubricant and any sweetener/flavour. State the assigned tablet type and batch size.

2. Wet-granulated option

Mix the assigned powders, form the specified granules with binder, dry and size under the master formula, then blend the designated final ingredients.

3. Direct-compression option

Use the prescribed directly compressible ingredients; blend and lubricate as specified without introducing a wet-granulation stage.

4. Soluble and chewable options

Use the distinct assigned formula: assess dissolution in the specified medium for soluble tablets and appropriate mechanical/palatability-design checks for chewable tablets. Do not ingest a teaching batch.

5. Compress and evaluate

Record compression settings provided by the supervisor and inspect appearance, mass, mechanical strength and the assigned release/performance tests.

Observations and Record

Tablet type	Method / yield	Quality observation
Wet granulation	_____	_____
Direct compression	_____	_____
Soluble	_____	_____
Chewable	_____	_____

Worked Example

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

- Theoretical batch mass = number of tablets × target mass per tablet.
- Example: 100 units × 0.50 g = 50 g. A total recovery of 47.5 g gives 95% mass yield; this does not establish content uniformity.

Result

Record the completed observations, calculations and conclusion with units. State any limitation of the observation.

Precautions

- Use trained supervision for compression machinery and avoid changing the master formula without authorisation.
- Evaluate each tablet type against its own prescribed tests and limits.

Viva Questions and Answers

1. Why granulate?

It can improve flow and processing of a suitable powder blend.

2. Why is mass uniformity not content uniformity?

An ingredient may be unevenly distributed even when total tablet masses are similar.

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