First Hope

COMPLETE NOTES

Click here to visit our website

PHARMACY PRACTICAL NOTES

Complete subject and semesters are available on FirstHope app only.

Scan or click here

Click here to get the app >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHopeNotes

Instagram

@firsthope.official

Click here to follow >

YouTube channel

FirstHope-Pharmacy / Live streams

Click here to watch >

WhatsApp channel

Follow FirstHope on WhatsApp

Click here to join >

FirstHope website

firsthope.co.in

Click here to visit >

B.Pharm / D.Pharm / M.Pharm / Pharm.D

Complete subjects and semesters are available in the FirstHope app.

Food Fat Content and Rancidity

Practical 23 - Analytical practical

Aim

To measure extractable food fat and assess relevant rancidity indicators.

Principle

A validated extraction separates the fraction defined as fat by that method. Oxidation and hydrolysis are assessed using appropriate chemical indices rather than relying on mass alone. Moisture, co-extractives and solvent removal can affect gravimetric fat estimates.

The test preparation, blank, calibration or titrant standardisation and independent controls are part of the measurement. State the actual concentration units, test conditions and adopted method before interpreting the result.

Materials and Requirements

- Adopted food-fat extraction method
- Suitable solvent and controlled recovery system
- Oil-quality test reagents and blanks
- Qualified balance and volumetric equipment
- Controlled method and raw-data worksheet

Procedure

1. Identify the material, intended attribute, method version and acceptance criteria. Record preparation and instrument or reagent identities.
2. Prepare the prescribed blank and reference or standardised reagent. Verify the measurement with an independent check where applicable.
3. Prepare a representative food portion and record moisture treatment and extraction basis.
4. Extract through the selected method and collect the defined fraction in a weighed vessel.
5. Remove solvent under the validated conditions and determine the prescribed constant-mass or endpoint criterion.
6. Evaluate the selected rancidity indicator, retaining its blank and method conditions.
7. Record individual readings for independently prepared test portions. Keep all raw observations, including unsuccessful measurements and their investigation.
8. Calculate the result on the stated mass, volume or area basis, including dilution, blank and recovery corrections as justified.
9. Compare the evidence with the applicable criteria and write a conclusion limited to the tested preparation and conditions.

Observations and Record

Enter actual measurements or the supplied teaching data. Record the method, material identity, conditions and units.

Preparation / attribute	Method condition	Raw measurement	Calculated result
Food mass and basis	Record	Record	Calculate
Recovered extract mass	Record	Record	Calculate

Preparation / attribute	Method condition	Raw measurement	Calculated result
Fat percentage	Record	Record	Calculate
Rancidity indicator	Record	Record	Calculate

Calculations

• Extractable fat (%) = (vessel-plus-extract mass - empty vessel mass) / food portion mass x 100

Worked Example

Illustrative food portion 5.00 g gives 0.800 g recovered extract after the stated drying endpoint.
Extractable fat = 0.800/5.00 x 100 = 16.0% on that preparation basis.
Peroxide or acid values are reported separately with their own units.

Result and Interpretation

• Specify the extraction definition and wet- or dry-mass basis. Consider the limitations of primary oxidation indices in extensively oxidised material.
• Report replicate variability and the evidence that the method can measure the intended attribute in this matrix.

Precautions

• Control solvent exposure, ignition sources and drying conditions.
• Avoid retaining solvent in a gravimetric result.
• Use representative portions and suitable extraction controls.
• Use the adopted laboratory procedure, suitable controls and the designated waste arrangements.

Viva Questions and Answers

Why state the extraction method?

Different methods can recover different defined fractions.

Can residual solvent bias fat mass?

Yes; it increases the apparent recovered mass.

Why use more than odour to assess rancidity?

Objective chemical measurements provide defined, reproducible evidence.

First Hope

COMPLETE NOTES

Click here to visit our website

PHARMACY PRACTICAL NOTES

Complete subject and semesters are available on FirstHope app only.

Scan or click here

Click here to get the app >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHopeNotes

Instagram

@firsthope.official

Click here to follow >

YouTube channel

FirstHope-Pharmacy / Live streams

Click here to watch >

WhatsApp channel

Follow FirstHope on WhatsApp

Click here to join >

FirstHope website

firsthope.co.in

Click here to visit >

B.Pharm / D.Pharm / M.Pharm / Pharm.D

Complete subjects and semesters are available in the FirstHope app.