

Lab sheet #1**-Determination of total acidity of food -****Method:****1. Determination of Milk Acidity:**

1. Fill the burette with 0.1 N NaOH solution
2. Mix the milk sample thoroughly by avoiding incorporation of air
3. Transfer 10 ml of milk to conical flask or beaker
4. Add equal quantity of distilled water
5. Add 3-4 drops of phenolphthalein indicator and stir
6. Rapidly titrate the contents with 0.1 N NaOH solution, continue to add alkali drop by the drop and stirring the content till first definite change to pink color which remains constant for 10 to 15 seconds
7. Note down the final burette reading

2. Determination of total acidity in juice:

1. Transfer 10 ml juice in beaker.
2. Add 25 ml of distilled water.
3. Titrate with 0.1M NaOH, using 2 drops of phenolphthalein as an indicator.
4. Continue to add alkali drop by the drop and stirring the content till first definite change to pink colour.
5. Note down the final burette reading.

3. Determination of total acidity in vinegars:

1. Transfer 1 ml vinegar.
2. Add 10 ml of distilled water.
3. Titrate with 0.1M NaOH, using 2 drops of phenolphthalein as an indicator.
4. Continue to add alkali drop by the drop and stirring the content till first definite change to pink colour.
5. Note down the final burette reading.

4. Oil acid value:

1. Mix the oil or melted fat thoroughly before weighting.
2. Weight accurately about 5 g of cooled oil sample in a 250 ml conical flask.
3. Add 50 ml of freshly neutralized hot ethanol.

4. Add one ml of phenolphthalein indicator solution.
5. Boil the mixture (in water bath) for about 5 minutes and titrate while hot against standard alkali solution shaking vigorously during the titration.

Results and Calculations:

1. Determination of Milk Acidity:

$$\text{Lactic acid \%} = \frac{(0.1\text{M NaOH X vol. of NaOH (in liter)} \times 90.08) \times 100}{\text{Weight of the sample}}$$

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2. Determination of total acidity in juice:

I. Weight of citric acid = $\frac{0.1\text{M NaOH X vol. of NaOH (in liter)} \times 192.43}{3}$

II. % of total acidity = (wt. of acid / wt. of sample) X 100

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3. Determination of total acidity in vinegars:

I. Weight of acetic acid = (0.1M NaOH X volume of NaOH (in liter) X MW).

II. % of total acidity = (wt. of acid / wt. of sample) X 100

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4. Oil acid value:

$$\text{Acid value} = 39.997 \times (V \times N) / \text{weight of sample}$$

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