

Determination of Total Lime (CaCO₃)

Methods of Total Lime (CaCO₃) determination:-

1- Field method:-

By adding a few HCl 0.01N to the soil .The acid reaction with soil refers to amount of CaCO₃ in the soil.

2-Laboratory method:-

a- *Calcimeter method.*

b- *Titration method.*

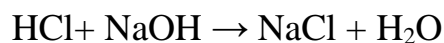
Titration method.

The principle of titration method

The soil carbonates are reacted with hydrochloric acid (HCl).



The amount of (HCl) non - reacted with CaCO₃ titrated by NaOH



The procedure of titration method:-

- 1- Weight 5 gm of oven dry soil and transfer to 250 ml conical flask.
- 2- Add 50 ml of HCl 1N and stir it for 30-45 minute and let them stand for (1-2) hours (to complete the reaction).
- 3- Filter the suspension by filter paper
- 4- Pipette 10 ml of extract put to 250 ml conical flask.
- 5- Add (2-3) drops of phenolphthalein indicator.
- 6- Titration with 1N NaOH till to give pink color.
- 7- Calculation:-

$$\text{CaCO}_3 \% = (\text{ml HCl} * N \text{HCl}) - (\text{ml NaOH} * N \text{NaOH}) * 5 / \text{wt}$$