

Determination of soil pH

pH measurements are affected by the soil:solution ratio and the solution type. Although the pH of a soil is more closely related to a pure water:soil solution, due to extracted ion buffering effects more consistent and reliable measurements are obtained when taken in dilute salt solutions. The common solution is 0.01M CaCl₂ in a 1:2.5 soil solution ratio.

Both pH(water) and pH(Calcium Chloride) measurements are usually required.

1. Make 0.01 M CaCl₂ by dissolving 219.08 g calcium chloride hexahydrate in 600 ml distilled water. dilute to 1000 ml and mix well
2. Weigh 10 g of air-dried and sieved (< 2 mm) soil into a plastic beaker.
3. Add 25 ml distilled water or salt solution and stir for ca. 1 minute (soil:CaCl₂ = 1:2.5).
4. The pH is measured in the supernatant after 1 h of standing and a second short stirring.