

Silage pH



Paper pH test strips can be used to estimate silage pH.

The degree of acidity in silage is measured as pH. Pure distilled water with no dissolved gases or other ions (charged atoms) has a pH of 7. Strong acid will have a pH of 2 to 3; a strong base will have a pH of 11 to 12. Before fermentation begins, the pH of wet forage is usually in the 6.0-6.5 range. As bacteria in the forage ferment soluble sugars to produce acid, pH falls. Ideally, silage will have a pH in the 3.8-5.0 range. At this level of acidity, the silage will not be subject to the growth of moulds which can impair its feed quality.

Corn and small cereal silages generally reach a low pH with little difficulty thanks to their high sugar content. Legume silages seldom reach pH levels below 5.0 because of their low sugar content and high *buffering capacity* (buffers are chemicals that resist pH changes). Grasses have intermediate levels of both sugar and buffers, usually producing silages with pH levels in the upper end of the ideal range.

Silage pH can be measured relatively easily in the field using either a pH test strip or a portable pH metre. A 100 gram sample of silage is thoroughly mixed with 100 millilitres of water and the liquid is poured into a test vial. The pH metre or test strip is simply dipped into the liquid sample to determine the pH of the silage.