Strongly Calcareous

(which means it has lime in it)

Calcium carbonate and calcium-magnesium carbonate (dolomite) are important constituents of many soils. Many soils formed in calcareous material. In humid regions, carbonates are removed by percolating water, but many soils that formed in calcareous material of late Pleistocene age or younger have carbonates in part of the soil or in the substratum. In arid regions, carbonates accumulate in various horizons if there is a source of divalent cations. Carbonates range from clay- and silt-sized particles in some soils to rocklike layers in other.

Dilute hydrochloric acid is used to test for carbonates in the field. Calcium carbonate effervesces when treated with a cold 10 percent (about 1N) solution of hydrochloric acid; dolomite reacts little or not at all and is commonly overlooked if only cold dilute acid is used. Dolomite can be detected by heating the sample, using concentrated acid, or thoroughly powdering the sample; the acid is then allowed to react for a few minutes. The effervescence of powdered dolomite with cold dilute acid is slow and frothy.

The amount and violence of effervescence are affected by many factors besides the amount of carbonates. Consequently, the violence of effervescence provides a qualitative description rather than a quantitative estimate of the amount of carbonates. Four classes of effervescence are used to describe the results of the test:

very slightly effervescent: few bubbles seen
slightly effervescent: bubbles readily seen
strongly effervescent: bubbles form low foam
violently effervescent: thick foam forms quickly