

Liming (soil)

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Liming is the application of calcium- and magnesium-rich materials to soil in various forms, including marl, chalk, limestone, or hydrated lime. This neutralises soil acidity and increases activity of soil bacteria. However, oversupply may result in harm to plant life. Lime is a basic chemical, the effect of it makes the soil more basic thus making acidic soils neutral.

The degree to which a given amount of lime per unit of soil volume will increase soil pH depends on the cation exchange capacity (CEC). Soils with low CEC will show a more marked pH increase than soils with high CEC. But the low-CEC soils will witness more rapid leaching of the added bases, and so will see a quicker return to original acidity unless additional liming is done.

Over-liming is most likely to occur on soil which has low CEC, such as sand which is deficient in buffering agents such as organic matter and clay.^[1]

Most acid soils are saturated with aluminium rather than hydrogen ions. The acidity of the soil is therefore a result of hydrolysis of aluminium.^[2] This concept of "corrected lime potential"^[3] to define the degree of base saturation in soils became the basis for procedures now used in soil testing laboratories to determine the "lime requirement" of soils.^[4]

An agricultural study at the Faculty of Forestry in Freising, Germany that compared tree stocks 2 and 20 years after liming found that liming promotes nitrate leaching and decreases the phosphorus content of some leaves.^[5]

See also

- Alkali soils
- Soil conservation
- Soil pH
- Agricultural lime
- Aluminium
- Md Sanaul islam, khuna university

References

1. Soil Acidity and Liming (Overview) (http://hubcap.clemson.edu/~blprrt/acidity2_review.html)
2. Turner, R.C. and Clark J.S., 1966, Lime potential in acid clay and soil suspensions. *Trans. Comm. II & IV Int. Soc. Soil Science*, pp. 208-215
3. "corrected lime potential (formula)". *Sis.agr.gc.ca*. 2008-11-27. Retrieved 2010-05-03.
4. "One Hundred Harvests Research Branch Agriculture Canada 1886-1986". *Historical series / Agriculture Canada - Série historique / Agriculture Canada*. Government of Canada. Retrieved 2008-12-22. Note this link loads slowly



Liming of a field in Devon

5. Huber C, Baier R, Gottlein A, Weis W. Changes in soil, seepage water and needle chemistry between 1984 and 2004 after liming an N-saturated Norway

spruce stand at the Höglwald, Germany. *Forest Ecology and Management*, 2006; 233; 11-20.

Further reading

- "A Study of the Lime Potential, R.C. Turner, Research Branch, Department Of Agriculture, 1965" (http://journals.lww.com/soilsci/Citation/1965/07000/A_Study_of_the_Lime_Potential__5__Significance_of.3.aspx)

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