

**Key words:**

Silicon, soil, acidification, aluminium, conifer

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## Silicon alleviates acidification effects

**Acidified forests benefit from silicon. In the form of calcium silicate the nutrient neutralizes the excess of acids in the soil. Furthermore silicon protects trees against toxic amounts of aluminium in acidified soil, the scientific newsletter *Beneficial nutrients news* reports.**

Silicon protects conifers against aluminium toxicity. In both the roots and the needles the nutrient deposits at the same locations as aluminium. This phenomenon is called co-deposition and is observed in conifers and in cereals as well. Results from British experiments with Norway spruce seedlings have shown that silicon indeed is involved in the alleviation of aluminium toxicity in conifers. Aluminium toxicity is a frequently observed symptom in acidified forests, because of the high aluminium concentration in the soil solution. On research of the scientific newsletter *Beneficial nutrients news* (see [www.silicon-nutrition.info](http://www.silicon-nutrition.info)) it appeared that forest managers hardly utilize the alleviating effect of silicon, if at all. On a modest scale however some biologists conduct experiments in order to get an idea of the beneficial effects for coniferous and broad-leaved trees on acidified soils.

Silicate lime is suitable for the amelioration of acidified forest soils. Silicates neutralize the excess of acids in the soil, through which the pH rises to the desired level and the burdening with the toxic aluminium drastically decreases. In order to ameliorate acidified forest soils, forest managers generally use limestone (calcium carbonate). These lime fertilisers however contain little or no silicon. Also the water that is absorbed by the roots usually lacks silicon. Especially sandy soils contain little silicon in a form that can be taken up by the roots. Sandy soils indeed are composed of quartz, but this material is so inert, that hardly if any becomes available for the trees.

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