

CASE STUDY

HELPING THE NETHERLANDS' FORESTS TO THRIVE

When a project to protect green spaces across the Netherlands highlighted problems with forest soils, Bosgroepen turned to Sibelco's SOILFEED SILVA for help.

Soil is a vital element of any natural ecosystem, helping to regulate important processes such as nutrient uptake, decomposition and water availability. But forest and heathland soils are particularly susceptible to the effects of acid rain caused by atmospheric pollution, and many of these habitats are found on naturally-acidic sandy soils.

If a soil is too acidic it becomes deficient in essential macronutrients, leaving trees and plants less healthy and more vulnerable to disease. Also, higher levels of acidity cause aluminium and heavy metals present in the soil to become more mobile, significantly increasing their toxic impact on plant roots and microflora. All of this substantially reduces flora, a problem faced by many forests in the Netherlands and Belgium.

Forest conservation specialists, Bosgroepen, led a number of government-funded projects to protect the Netherlands' forests by improving soil quality. Previously, calcium carbonate had been used to replenish the soil, however this caused a rapid and strong increase in pH levels with a detrimental impact on the forest's delicate ecosystem. Additionally, the benefits of calcium carbonate are short-lived, which means that frequent applications are necessary. A new solution was needed.

Field trials conducted by Bosgroepen, together with leading experts in geochemistry and mineralogy, compared the performance of various soil improvement products. SOILFEED SILVA delivered the best results, steadily increasing pH levels to reduce acidity whilst adding new mineral nutrients, similar in composition to the depleted minerals. And unlike

calcium carbonate, the effects of SOILFEED SILVA are predicted to last for many years.

With SOILFEED SILVA selected as the best solution, our customer service and logistics team set to work, coordinating on-time delivery from our operation in Norway to the project's sites in the Netherlands via a local warehouse in Terneuzen where the product was stored. As a natural, safe to use product, SOILFEED SILVA was spread quickly, accurately and efficiently onto the forest floor via helicopter.

The first results showed an increase in soil pH, soil buffering and root growth within the treated areas. It is expected that the positive impact on flora and fauna will soon follow, demonstrating the positive role of SOILFEED SILVA in protecting our planet's precious forests.



SOILFEED SILVA is the first commercial remineralizer product in Europe that contains the mineral nepheline. For almost 100 years it has been known that nepheline reacts rapidly in soils, providing K required for plant growth, and more nutrients are derived from other minerals with the product, stimulating the microbial community within the soil

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About SOILFEED SILVA

SOILFEED SILVA is a slow-release treatment made from processed volcanic rock, formed through the cooling and solidification of magma or lava. Scientific studies show that volcanic ash has created the world's most fertile soils.

Generated during the mining of nepheline syenite rock at Sibelco's operations in Norway, SOILFEED SILVA is 100% natural with no chemical additives – it is created by nature and returned to nature in a 'cradle to cradle' cycle. As a naturally-occurring mineral, SOILFEED SILVA has a low carbon footprint. Its slow-release properties and long-lasting effects means that less material is required, providing both cost savings and environmental benefits.



only around **10% of land** in the Netherlands is forested, making it one of the least forested countries in Europe



the Dutch government established a goal in 1994 of increasing forested land by **3,000 hectares** per year until 2020



nepheline syenite is only found in Canada, India, Norway and Russia



there are over **60,000** different tree species in the world