



Set up with essential sulphur

Sulphur is a critical component of productive pasture systems and should not be overlooked. Incitec Pivot Fertilisers' technical agronomists, Jim Laycock and Lee Menhenett explain the role of sulphur in your fertiliser program.

Whether you need to build soil sulphur levels or maintain fertility to sustain high levels of production, sulphur is likely to be a regular part of your fertiliser program.

Sulphur is one of the macronutrients, typically taken up by plants in slightly smaller amounts than phosphorus. It is a constituent of protein and plays an important role in both plant and animal nutrition.

Sulphur is needed to support legume species in the pasture and for the successful association between plant and rhizobium to fix atmospheric nitrogen.

Sulphur is absorbed by plant roots almost exclusively as sulphate sulphur. This can come from fertilisers or from the mineralisation of soil organic matter.

Mineralisation occurs through microbial decomposition of organic matter and is most rapid when soils are warm, moist and well aerated.

Fertilisers may contain elemental or sulphate sulphur. Elemental sulphur becomes available for plant uptake after it has been oxidised by soil micro-organisms. Elemental sulphur oxidation is greatest in warm and moist soils.

A key influence on the rate of elemental sulphur oxidation is particle size.

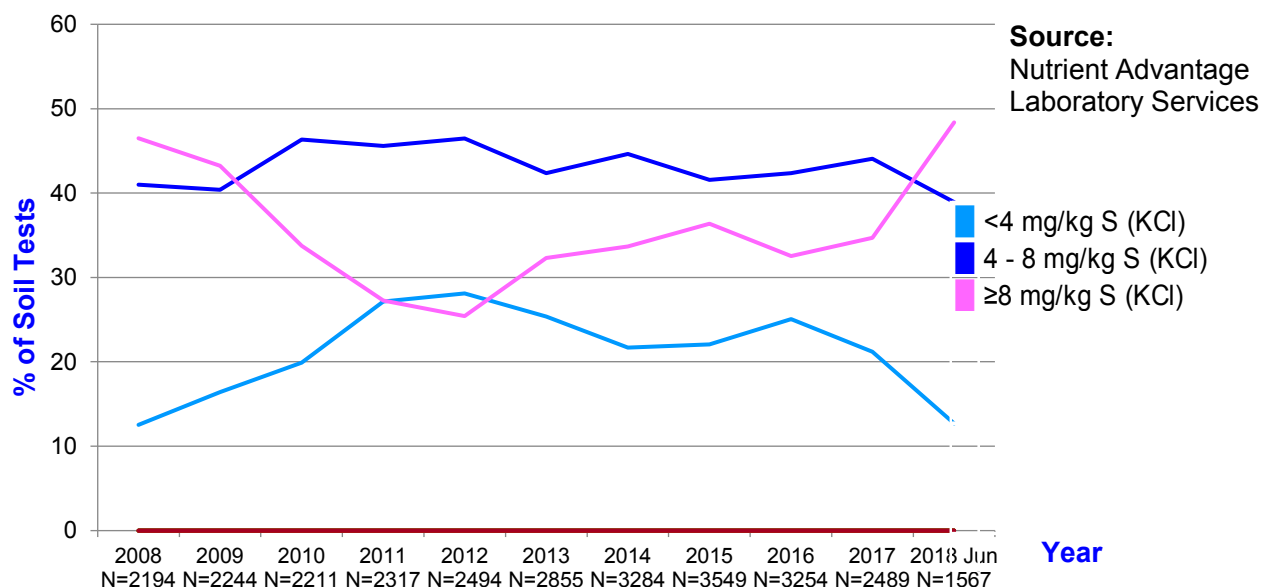
The greater the size of elemental sulphur particles, the smaller the surface area for micro-organisms to act on, therefore the slower the conversion to plant available sulphur.

Elemental sulphur is not prone to leaching, while sulphate sulphur is prone to leaching.

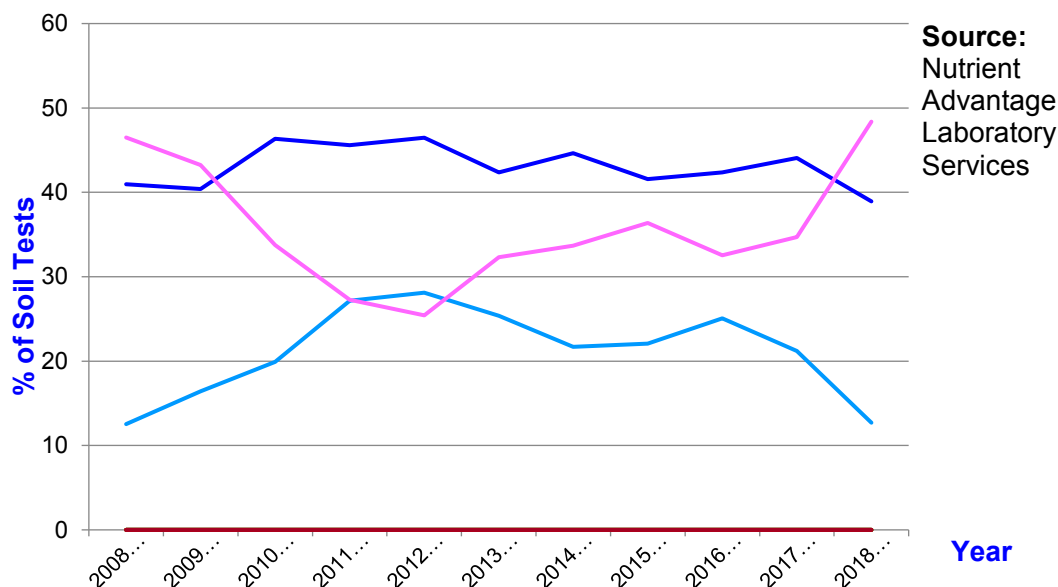
After wet years, we typically see a decrease in sulphur levels in 0-10 cm soil tests. Deep soil testing can reveal the position of this sulphur, which may be able to be recovered from deeper rooted pasture species.



Pasture Top-Soil S (KCl)
with sample depth ranges ≤ 10 cm. 65028 Samples
 Includes soil test results from VIC



Pasture Top-Soil S (KCl)
with sample depth ranges ≤ 10 cm. 28458 Samples
 Includes soil test results from NSW



Caption to graphs: Following the wet years of 2010 and 2016 soil sulphur levels in the top 10 cm decreased due to leaching.



It is a juggling act to keep available sulphur in the pasture system!

However, when choosing a pasture fertiliser, remember that:

- plant roots take up the sulphate form of sulphur
- the majority of soil sulphur is present as organic matter and will cycle under warm moist conditions
- responses to elemental sulphur may be delayed depending on the size of the particles (smaller size, quicker oxidation)
- elemental sulphur is not prone to leaching.

Where soil sulphur levels are below optimum, it is a good idea to use plant available sulphate sulphur for earlier dry matter responses. The ratio of sulphate sulphur and phosphorus in SuPerfect® is ideal for boosting pasture growth.

In the longer term, a fertiliser with a combination of fine grade elemental and sulphate sulphur will give pastures access to the nutrient immediately and feed the sulphur cycle.

Sulphur can also be supplied in spring pasture blends with nitrogen and other nutrients to set paddocks up for the additional seasonal growth.

Applying sulphur regularly will help ensure the pasture system continues to produce high quality, productive feed for your stock.

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