Nutrient Advantage®
AGRONOMY COMMUNITY

Agronomic Insight
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Could your pastures need molybdenum?

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Trace elements like molybdenum play a critical role in helping maintain a productive, sustainable pasture system.

If it has been five years or more since you have applied molybdenum, take a moment to consider whether it could be a useful addition to your fertiliser program this year.

Firstly, consider whether your soils and pastures are prone to molybdenum deficiency.

For example, we know that molybdenum is less available to pastures when the soil is acidic. Molybdenum deficiency is also more likely to occur on highly weathered limestone soils that are low in native phosphorus, potassium and calcium.

If it is considered that there is a need for molybdenum, then testing with a leaf tissue test through the Nutrient Advantage® laboratory is a very good starting point.

Tissue testing measures the availability of molybdenum to your pastures. It is the most reliable method for diagnosing molybdenum deficiency.

If you are looking for a deficiency, you'll probably see it first in legumes such as clovers, medic and lucerne, with stunted growth and a general paleness, similar to nitrogen deficiency. Rhizobium nodules may become pale and colourless too.

In non-legume pasture species, molybdenum deficient leaves may have a mottled pale appearance, stunted growth and burn on the margins of mature leaves.

Again, these symptoms are similar to nitrogen deficiency, except for the burn, which is due to the accumulation of nitrates.

The reason it looks a bit like nitrogen deficiency is because two of the most important functions of molybdenum in legume-based pasture systems are linked with nitrogen.

1. Molybdenum is required by Rhizobia bacteria for efficient nitrogen fixation in the root nodules of legumes.
2. In grasses, molybdenum is used in the process of reducing nitrate back to ammonium within the plant as a first step to forming proteins. It helps in the efficient use of nitrates for plant growth.

While molybdenum is required in very small amounts, it can be just as important as the macronutrients, so if molybdenum is limited it's a bit like driving with the handbrake on.

In pastures grown on acid soils, 50-100 g/ha of molybdenum should be applied every five to ten years.

This can be easily added to your annual fertiliser application, either as a SuPerfect® Mo blend, or as a trace element coating.

Incitec Pivot Fertilisers is currently working to install liquid applicators at Geelong and Adelaide to allow sodium molybdate to be coated onto any pasture fertiliser on despatch. In Newcastle and Port Kembla, SuPerfect is already available with a sodium molybdate spray coating.

Three rates are available for the molybdenum coatings – 0.015%, 0.025% or 0.05%.

As a word of warning, avoid applying molybdenum in the same year as lime, as the availability of molybdenum increases with increasing pH.

Also, only small amounts of molybdenum are needed, even when correcting a deficiency. This is important because applying excessive rates of molybdenum may induce copper deficiency in livestock. In some soils, such as acidic sandy loams in high rainfall areas, copper should be applied with molybdenum.

For more information or advice about molybdenum, please contact me on 0412 565 176 or lee.menhenett@incitecpivot.com.au.

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