

PASTURE

What deficiency is this?

New Zealand agriculture is heavily dependent on healthy pasture crops, as they make up the majority of farm feed systems. Ryegrass and clover is the most common pasture mix in New Zealand conventional farming systems. Ryegrass provides a high-quality feed that is hardy and persistent in dry conditions, around insects and with moderate soil fertility, and clover provides available nitrogen to the other plant species through atmospheric nitrogen fixation and has a high nutritional value. In pasture, clover species are more sensitive to deficiencies as they have higher nutrient requirements than grasses, therefore clover will generally display nutrient deficiency symptoms earlier than grass species.

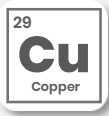
It is important for pastures to have adequate soil fertility, as insufficient nutrients in the soils can flow on to nutrient deficiencies in an animals diet – especially with Cobalt (Co), Copper (Cu), Magnesium (Mg), Molybdenum (Mo), Nitrogen (N), Phosphorus (P), Sulphur (S), Selenium (Se) and Zinc (Zn).

An A-Z on pasture nutrient deficiencies and how to spot them



Boron

Boron deficiencies are most likely to occur on sandy and/or free draining soils. Grasses in general are tolerant to boron deficiencies, but clover species are moderately susceptible. The roots of clover are the first to be affected by a Boron deficiency, so it may be difficult to initially recognise. The above ground symptoms include red-yellow discolouration of the leaf edges and necrosis nearer the centre of the leaf.



Copper

Copper deficiencies are usually found in soils such as peat, leached sandy soils, pumice soils and soils with high pH. Symptoms are mostly found in clover species before they can be seen in grasses, with symptoms including retarded growth, 'wither tip' (thin, white and twisted young leaves), inward rolling of leaves and discolouration of growing tips.



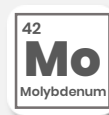
Iron

Iron deficiencies are not generally common on New Zealand soils and are most likely to be found in limestone based soil with high pH. Iron deficiencies can, however, be induced by excess Phosphorus, Manganese or Zinc. Symptoms will occur in the younger leaves first, with interveinal colour loss (chlorosis).



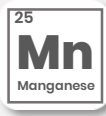
Magnesium

A Magnesium deficiency is most likely to occur on compacted and acidic soils or very sandy soils that are prone to leaching after heavy rainfall. Deficiencies are more easily spotted in clover, as the older leaves have symptoms of interveinal chlorosis with yellow patches and sometimes red/orange patterns. The older leaves may also show signs of necrosis on the inner leaf. Grasses may be pale and both will exhibit signs of reduced growth.



Molybdenum

Molybdenum deficiencies occur in acidic soils, as it is more available in higher pH. Molybdenum deficiency symptoms are similar to that of Nitrogen, where growth is reduced and chlorosis of leaves occur.



Manganese

Manganese deficiencies can be caused by over liming and is associated with high pH. There are a few symptoms that may occur in pastures if a Manganese deficiency is present. These are more obvious in clover and include;

- Interveinal chlorotic yellowing (mottling) of older leaves
- Stunted root growth and decreased overall growth
- Areas of necrotic tissue
- Young leaves fail to develop and are necrotic



Nitrogen

Nitrogen deficiencies are common in soils where there is low nitrogen availability, such as highly acidic or alkaline soils, and in waterlogged or leached sandy soils. Nitrogen deficiencies result in the older leaves becoming pale yellow/green leaves initially, with potential spread to younger leaves. Reduced growth and sparse ground cover may also be a symptom. Prominent urine patches in the field may also be a symptom of Nitrogen deficiency (although this could also indicate a Potassium deficiency).



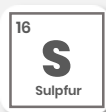
Phosphorus

Phosphorus deficiency is most common on highly acidic soils and temporary deficiencies may occur on cold, wet soils. Growth reduction as well as reduced tillering may be observed. Other symptoms of Phosphorus deficiency include purple discolouration and red/brown tips that die off. Phosphorus deficiencies are most likely to be found in older plants first.



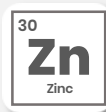
Potassium

Some New Zealand soils (Taranaki and Manawatu especially) have low potassium levels and are required to add through fertiliser applications. The worse cases of potassium deficiencies are on acidic sandy soils and can occur as a result of leaching. Older leaves on show symptoms first, with yellowing on leaf margins and die back of clover species. Symptoms of potassium deficiency in grasses include reduced length and yellowing and brown blotches across the blade. Prominent dung and urine patches in the field may also be a symptom of Potassium deficiency (although this could also indicate a Nitrogen deficiency).



Sulphur

Sulphur deficiencies most likely occur on acidic soils, light sandy soils, soil with low organic matter content and in high rainfall areas. In grasses, symptoms are mostly shown in younger grasses and include pale/yellow grass with reduced growth and retarded tillering. Clover shows symptoms in both young and old leaves, with chlorosis and (in severe deficiencies) folding leaves and erect stems.



Zinc

Zinc deficiencies in brassica may be induced by excessive applications of phosphate and is most common in highly alkaline soils. Symptoms of Zinc deficiency include stunted plants with small undeveloped leaves and interveinal chlorosis causing the plant to look almost bleached.

If you have any questions or concerns about nutrients or deficiencies in your pasture, give the team at Osflo Fertiliser a call

0800 467 356