Hill Laboratories
BETTER TESTING BETTER RESULTS

Crop Guide
Ryegrass

KB Item: 3494v2

Sampling Notes

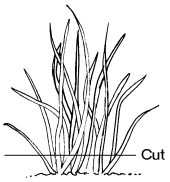
Ryegrass is often the principal component in high producing pastures, and as such, arguably New Zealand's most important crop.

From an analytical testing perspective, ryegrass is of lesser importance than the associated clover component in the pasture. This is because ryegrass is a more efficient harvester of nutrients than clover, often taking up luxury levels while adjacent clover plants may have marginal levels of the same elements. Nutritional problems therefore appear first in the clover plants, making them the preferred plant to be analysed to identify nutrient disorders.

Soil information is given here for ryegrass seed crops.

Leaf

Sampling Time:	At a vegetative growth stage, usually late spring or autumn flush.
Plant Part	Leaf blades.
Collect From:	Cut at grazing height.
Quantity per Sample:	500g.
Recommended Tests:	Basic Plant (BP).
Comments:	It is not common to collect ryegrass only samples. Either a mixed herbage sample (to evaluate feed value for grazing animals), or a clover only sample (to identify nutrients limiting dry matter production) are more common. Possibly if symptoms appeared in ryegrass and a nutritional problem was suspected, then a mixed herbage analysis should be undertaken.



Soil

Sampling Time:	Prior to crop establishment.
Core Depth	15 cm.
Collect From:	Random sites throughout the sampling area.
Quantity per Sample:	12 - 20 cores.
Recommended Tests:	Basic Soil (BS), Sulphate Sulphur (SO4), Available Nitrogen (AN)
Comments:	Soil samples are usually collected for analysis prior to planting the crop. If trying to diagnose a problem with crop growth and yield, samples should be collected from the rooting zones of the worst affected areas. In these circumstances, a second sample taken for comparative purposes from the rooting zones of normal areas may be useful.

Interpretation

Interpertation of the laboratory's results is possible by comparison with normal levels expected for the crop in question.
The interpretation given is based on the best information available and relate specifically to the sampling instructions given.

Leaf

Analyte	Unit	Range
Nitrogen	%	4.5 - 5.0
Phosphorus	%	0.35 - 0.40
Potassium	%	2.0 - 2.5
Sulphur	%	0.27 - 0.32
Calcium	%	0.25 - 0.30
Magnesium	%	0.16 - 0.20
Sodium	%	0.15 - 0.25
Iron	mg/kg	50 - 60
Manganese	mg/kg	25 - 30
Zinc	mg/kg	14 - 20
Copper	mg/kg	6.0 - 7.0
Boron	mg/kg	7.0 - 15
Molybdenum	mg/kg	0.30 - 0.40

Soil

Analyte	Unit	Range
pH	pH	5.7 - 6.2
Olsen Phosphorus	mg/L	20 - 30
Potassium	me/100	0.30 - 0.60
Calcium	me/100	5.0 - 12
Magnesium	me/100	0.60 - 1.2
Sodium	me/100	0.0 - 0.30
CEC	me/100	12 - 25
Volume Weight	g/mL	0.60 - 1.0
Sulphate Sulphur	mg/kg	10 - 20
Available Nitrogen	kg/ha	100 - 150

Comments

Nitrogen is the nutrient most likely to be deficient in ryegrass under normal pasture production conditions. Other deficiencies may occur, but generally they will appear in the clover plants first, and therefore analysis of clover tissue is recommended to diagnose these deficiencies.

References

Cornforth, I.S. and Sinclair, A.G. 1984. Fertiliser recommendations for pastures and crops in New Zealand. MAF Publication, Wellington.

Disclaimer

Normal Range levels quoted relate specifically to the sampling procedure given. The Normal Range levels and Comments provided are the most up to date levels available, but may be altered without notification. Such alterations are implemented immediately in the laboratory histogram reports. It is recommended that a consultant or crop specialist be involved with interpretations and recommendations.