ravensdown

ARL
analytical research laboratories

Testing

Soil, plant and feed testing

Getting the measure of your soil, crops and animal feed

ARL is one of New Zealand's leading soil, plant, feed, and water analytical laboratories.

About ARL

ARL is an IANZ (International Accreditation New Zealand) accredited laboratory (ISO 17025) and a member of the New Zealand Association of Consulting Laboratories and ASPAC (Australasian Soil and Plant Analysis Council).

- Our work is constantly monitored to make sure the highest standards are being achieved.
- We take pride in our modern laboratory, state-of-the-art instrumentation and well qualified staff.
- We'll provide you with accurate information allowing you to make the right decision for your farm and stock needs.

ACCREDITED
IANZ
TESTING LABORATORY

Test to know

Before you test, take a look through this brochure to make sure you get the best results from your soil, plant, or feed sample(s)

*Water testing.
For comprehensive water testing information, refer arllab.co.nz

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Soil testing

The first step in designing a fertiliser programme is to test your soil.

Why soil test?

Soil testing helps you establish the nutrient status ie "the reservoir" of your soil. It also means you are able to:

- more accurately assess fertiliser and lime requirements and maximise your fertiliser dollar
- make better informed management decisions
- monitor the effectiveness of previous fertiliser applications
- keep track of fertility trends over time
- establish a starting point for sustainability

Getting the best from your soil sample

The greater the variation in a sample area the more difficult it is to manage and fertilise it correctly. The key to taking a representative sample is to choose sample areas that have similar soil type, fertiliser history, productivity, topography (slope) and land use. Sample numbers should increase with greater variation in these factors.

You will get most value from your sample when the area it represents varies the least.

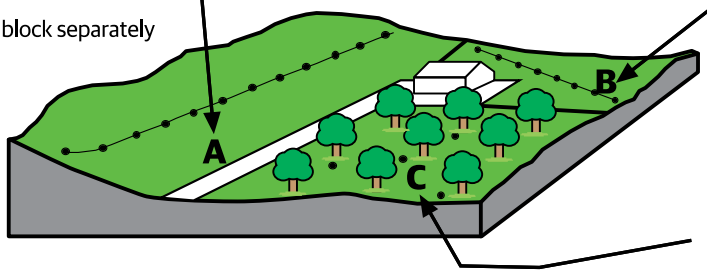
Do I need to do a plant analysis as well as a soil test?

Soil testing cannot tell you if your plants are capturing all of the nutrients available, and if the nutrients needed are in the correct proportions. So it's best practise to soil test in conjunction with plant analysis to give you the most accurate picture of your block and crop. This will enable you to make better informed decisions.

Sampling to cover different soils, slopes and management

Block A
Different slope
Productivity
Fertiliser history

Sample this block separately



Block B
Different slope
Productivity
Fertiliser history

Sample this block separately

Block C
Soil type
Different landuse (crop)
Fertiliser history

Sample this block separately

Sampling transect (line) and sampling points

Soil testing continued

The first step in designing a fertiliser programme is to test your soil.

How do I sample for soil analysis?

1. Select sites to take soil samples from. The samples should be representative of the whole area taken in a transect (line) or grid pattern and should be taken in a way which can be repeated from year to year. Painting fence posts, use of GPS or placing pegs under fences can permanently identify sampling lines. Avoid areas that are not typical of the block/paddock you are looking to sample from, such as, gateways, troughs, fence lines, unusually high or low fertility "spots" and manure or waste spots.

2. Make sure the core is taken at the appropriate depth. Core depth should be 7.5cm for pastoral soils and 15cm for cropping and horticultural soils. A soil auger can be borrowed or purchased from ARL or your local Ravensdown store. Alternatively, a clean spade can be used but it is essential to maintain core width ie not to sample in a wedge shape and that the core is sampled to the correct depth. Take a minimum 20 individual cores at 10m intervals.

3. These 20 cores make up one sample and can be placed in one sample bag.

4. Do not sample within three months of applying fertiliser or lime, as residual granules may distort your result.

5. Securely close the sample bags and label them clearly.

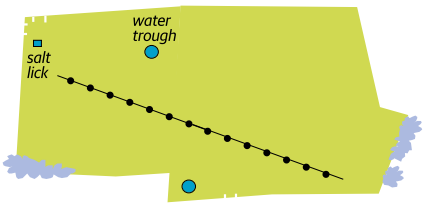
6. Fill in the submission form and put the samples plus the submission form in the pre-paid courier bag and send them to ARL immediately or store in refrigerator (any delay exposes the sample to excess heat and moisture and can affect the analysis).

How many soil samples and how often?

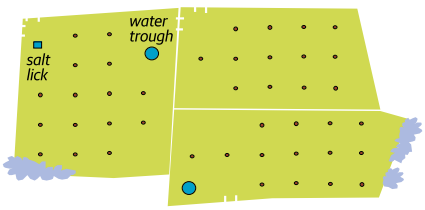
We recommend sampling as much of your farm as possible to assist in long-term planning and providing for the overall sustainability of your operation. It's a small investment to add science to your land management practises.

Maximum advantage from soil testing is best achieved by repeated testing on a regular and planned basis, rather than relying on a "snap shot" in time. For most situations an annual soil test, coupled with plant tissue testing (refer to the plant sampling guide at the end of this brochure) during the growing season is recommended.

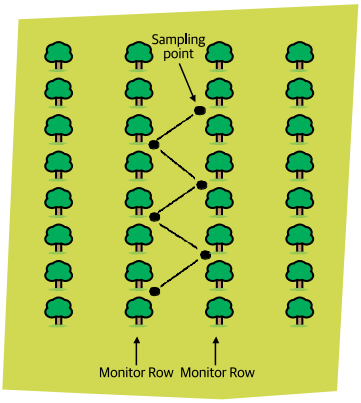
Soil sampling for your block



Sampling transect (line) through one block



Grid sampling of three separate blocks



Sampling using monitor rows in a horticultural crop

Choose the soil analysis that best suits your needs

TEST TYPE	DESCRIPTION
Basic Soil Analysis pH, Olsen Phosphorus, K, Mg, Ca, Na, CEC, % Base Saturation, Lab Bulk Density.	**Soil nutrient status suitable for cropping and horticulture enterprises if soil sulphate analysis is not required.**
Pasture Soil Analysis Basic Soil + Sulphate Sulphur + Organic Sulphur.	**Soil nutrient status suitable for pastoral, cropping and horticulture enterprises with sulphate and organic sulphur included. The recommended soil fertility suite for nutrient budget analysis.**
Potentially Mineralisable Nitrogen (PMN) Mineral Nitrogen + Mineralisable Nitrogen.	**Measures immediately plant available nitrogen (mineral N) and estimates plant available nitrogen from the mineralisation of organic matter.**
N Mineralisation Calculator – used in conjunction with PMN test Supplied with PMN test in regions where the calculator has been calibrated: Canterbury, Tasman/Marlborough, Manawatu-Whanganui, Hawke's Bay, Gisborne, Waikato and Auckland.	**Allows easy, region-specific interpretation of the PMN test, providing N mineralisation rates (kg N/ha) for four months after sampling.**
Mineral N Deep Nitrogen Test.	**A measure of readily plant available nitrogen (Ammonium-N and Nitrate-N) at the time of sampling, allows application decisions to take account of existing soil nitrogen.**

What are some of the additional tests available?

Anion storage capacity (also referred to as the phosphate retention test) - Measures the ability of the soil to store phosphate and sulphate. Soils with higher anion storage capacities will require larger amounts of fertiliser phosphate and sulphate to raise soil test levels or to overcome deficiencies. Recommended once for each block or paddock.

Reserve Potassium (TBK) - Measures the amount of reserve potassium available in some soils. Recommended every five to ten years on sedimentary soils only.

Organic Matter - Organic matter in soil has an important role in the supply of nutrients, improving soil structure, reducing the risk of erosion, increasing the water holding capacity of soils and providing a food source for earthworms and microbes. It generally declines under cropping and increases under pasture. Recommended once every 4-5 years.

Exchangeable Aluminium - One reason for poor plant growth in New Zealand on acid soils (those soils where pH< 5.6) can be aluminium toxicity. This test measures the exchangeable aluminium and confirms toxicity problems.

Hot Water Soluble Boron - Provides a measure of available boron in the soil. Recommended where crops have a high boron requirement such as avocados and olives or when changing to crops which are sensitive to boron toxicity.

Trace Element Testing - ARL offers a number of options for soil trace element testing. We recommend plant tissue testing in conjunction with animal liver/blood tests for determining trace element deficiencies in pasture.

For further tests and pricing go to www.arllab.co.nz

Plant testing

Plant analysis indicates whether your plants have the right amount and balance of nutrients.

Why plant test?

As well as indicating whether your plants have the right amount and balance of nutrients for optimal production, plant testing is also a useful tool for:

- providing a guide on the critical nutrient concentrations required for maximum production and optimal crop quality for individual crop types at particular stages of growth
- being more reliable than soil testing for determining trace element nutritional status and fertiliser requirements of annual and perennial crops
- determining the mineral concentrations of animal feed, particularly herbage, helping ensure maximum animal production
- diagnosis of plant health problems, including trace element deficiencies and nutrient toxicities
- monitoring the effectiveness of your fertiliser programme

What plant part do I sample?

1. Follow the crop sampling guide, because the critical nutrient concentrations for the different crop types are specific to plant part and stage of growth. Failure to do so may lead to misleading results and advice.

2. Collect the appropriate plant part in sufficient quantity to make up the sample (refer to the plant sampling guide at the end of this brochure for guidelines on size of sample to collect).

How do I sample for plant analysis?

1. Ensure your hands are clean or if using shears or scissors ensure these are also clean as rust or soil can contaminate samples. Recent applications of fertiliser, foliar feeds and certain pesticides may affect the results.

2. When sampling take plant tissue from a representative number of different sampling sites or plants (more than 15 is desirable, if unsure refer to the plant sampling guide).

3a. For pasture samples walk along your chosen transects (lines) taking a handful of pasture every 10-20 metres. Each sample should be made up of 15 or more handfuls of pasture. Please provide enough sample by filling the sample bag provided (equivalent of 2 litres for a mixed pasture or ½ litre for a clover only sample). Take the sample at animal grazing height.

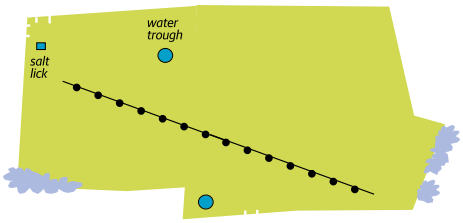
Pasture samples are normally taken during periods of active growth (such as during spring or autumn flush). For arable and horticultural crops refer to the plant sampling guide for appropriate sampling time or growth stage.

3b. In the case of fruit trees and vines it is recommended to mark the trees or vines that you have sampled from, so that you can return to these same trees for future sampling.

4. Avoid soil in plant samples where possible because soil can easily contaminate and compromise the accuracy of the test results.

5. Squeeze the air out of the sample bag before sealing it tightly.

6. Fill in the submission form and put the samples plus the submission form in the pre-paid courier bag and send them to ARL immediately or store in refrigerator (any delay exposes the sample to excess heat and moisture and can affect the analysis).



It is recommended to take pasture samples from the same sampling transects (lines) as previous soil samples

Plant testing continued

Choose the plant analysis that best suits your needs.

TEST TYPE	DESCRIPTION
Basic Plant Analysis (Nitrogen, Phosphorus, Potassium, Sulphur, Magnesium, Sodium, Iron, Manganese, Copper, Zinc, Boron, Calcium)	Analysis of the major nutrients and trace elements required for arable and horticultural crops.
Standard Pasture Analysis (Basic Plant Analysis + Cobalt, Selenium, Molybdenum)	Analysis of the major nutrients and trace elements required for plant growth and animal health.
Clover / Brassica / Legume Analysis (Basic Plant Analysis + Molybdenum)	Analysis of the major nutrients and trace elements required for clover, brassica or legume plant growth.
Comprehensive Pasture Analysis (Standard Pasture Analysis on whole sample and Clover Analysis on clover only)	Analysis of the major nutrients and trace elements required for plant growth and animal health. The sample is split into two with a Standard Pasture Analysis carried out on half of the sample and a Clover Analysis on the clover portion of the other half of the sample. ARL will separate the clover from the sample for the Clover Analysis. This ensures the complete picture for optimum mixed pasture performance.
Plant Petiole Analysis (Basic Plant Analysis + Nitrate-Nitrogen)	For grapes at flowering and potatoes during early season development (50 days after emergence) Petiole Analysis is recommended. Refer to the plant sampling guide for the appropriate sampling time or growth stage and the quantity of plant petioles to collect.
Potato Petiole Analysis (Phosphorus, Potassium, Magnesium, Nitrate-Nitrogen)	Test suite tailored for potato.
Specific Crop Package	Specific crop packages such as whole fruit analysis of apple and kiwifruit - contact for more information.

What additional tests are available?

Nitrate - levels in pasture and crops under certain conditions can accumulate to toxic levels and in these instances that can lead to stock death. ARL offers urgent nitrate testing for diagnosing at-risk crops.

Iodine - is essential for animal growth and development. Plant tissue iodine testing is useful in the same way that other trace element plant testing is used.

Chloride - this test should be used on plants which have a higher chloride requirement such as Kiwifruit or when chloride levels can indicate plant health problems such as in avocado.

What if I'm trying to diagnose a plant health problem?

If testing because a plant or crop is poorly performing, it is a good idea to take two representative samples, one from each of the good and poor performing areas, and send for analysis.

For specific crops refer to the crop sampling guide for recommended extra tests.

For further tests and pricing go to www.arllab.co.nz

International Accreditation New Zealand

ARL is an IANZ accredited laboratory (to ISO 17025). So you can be assured of:

- Competent people
- Appropriate resources
- Calibrated equipment
- Robust processes
- Effective systems and procedures

ACCREDITED IANZ TESTING LABORATORY

Choose the feed analysis that best suits your needs.

ARL offers discounts where mineral and feed analysis are carried out on the same sample.

Feed quality testing

Feed quality testing assists in determining the amount of feed to give your animals.

Why feed test?

To work out the amount of feed to give your animals, for maximum animal performance and the conservation of your valuable feed stocks. It will also help you to:

- **achieve your targeted milk solid production**, live weight gains and animal reproductive performance
- **determine the quality** of the feed you buy in or conserve

How do I sample for feed analysis?

To help ARL provide you with accurate information on the quality of your pasture, silage and other feedstuffs it is vital to take a representative sample of the test material.

Sampling fresh pasture for feed quality analysis should follow the same sampling procedure as sampling pasture for nutrient analysis. When sampling from conserved feed such as silage or baleage, combining a number of sub-samples will give you an "average" or representative sample.

If you are sampling at harvest particularly if you are buying or selling maize silage on a dry weight basis, ARL recommends that you consult with the 'Maize Forage Trading Code of Practice'. The code outlines best practice for weighing, sampling and testing. ARL's dry matter assessment is IANZ accredited with fully traceable standards as recommended by the code of practice.

For silage samples, the silage should be ensiled for a week for maize and at least 4 weeks and preferably 6 weeks for pasture before sampling.

In the case of stacks/pits or bales cut a small hole in the plastic cover and after taking samples ensure that you tape over holes in the plastic using silage tape to minimise deterioration in the areas the samples have come from.

Core samples are recommended because the edges of the silage pit or bales are likely to have deteriorated to a significant degree in comparison to the core. Take a series of cores with a long silage auger and discard the top portions. If a silage auger is not available take at least 6-10 grab samples of about 200 grams each from various parts of the pit, again avoiding any samples from the edge. These can then be combined into the ARL sampling bag provided.

If you are sampling bales take the grab samples from the centre of 6 bales. Ensure that the grab samples are taken at least 30 cm into the centre of the pit or bale.

If you are sampling from a silage stack once it has been opened, take at least 6-10 grab samples of about 200 grams each from various parts of the stack face ensuring they are at least 30cm deep avoiding any material that may have deteriorated.

If the sample is from silage currently being fed-out collect at least 6-10 samples from silage that has only just been taken out of the stack or from a bale that has just been opened.

Press or squeeze the sample bag to remove as much of the entrapped air as possible, label and seal the bag tightly.

Complete the submission form provided and put the samples plus the submission form in the pre-paid courier bag and send them to ARL immediately (store in cool place before dispatch, any delay exposes the sample to excess heat and moisture and will affect the analysis.

Samples should be sent to the laboratory no later than Thursday to ensure they arrive at ARL on a working day.

TEST TYPE	DESCRIPTION
1. Fresh Pasture, Cereal, Maize and Brassica	Dry matter, crude protein, fat, ash, acid detergent fibre, neutral detergent fibre, soluble sugars and starch, organic matter digestibility, metabolisable energy
2. Pasture and Cereal Silage	Fresh pasture + pH, ammonical-N, total nitrogen, lactic acid
3. Maize Silage	Same as pasture and cereal silage but without organic matter digestibility
4. Wet Chemistry	For feed concentrates, swede and turnip bulbs, compound feeds, vegetables and fruit

Crop sampling guide

CROP TYPE	RECOMMENDED SAMPLE PERIOD	PART TO SAMPLE	QUANTITY	RECOMMENDED EXTRA TESTS
Almond	January-February	Youngest mature leaf blade + petiole from the mid portion of current seasons non-fruiting extension growth	40-60 leaves	
Alstroemeria	Pre-flowering	Youngest mature leaf from the mid portion of non-budding stems	25-30 leaves	
Apple	January-February	Youngest mature leaf blade + petiole from the mid portion of current seasons non-fruiting extension growth	40-60 leaves	
Apricot	January-February	Youngest mature leaf blade + petiole from the mid portion of current seasons non-fruiting extension growth	40-60 leaves	Chloride
Arrow-leafed clover	Spring	Top 15cm of actively growing plants	20–30 plants	
Asparagus (fern)	February-March	Fern from the upper 30cm portion of the plant	10-15 ferns	
Asparagus (spear)	At spear emergence	Upper 9cm of emerged spear	20-30 spears	
Avocado	April-May	2nd-4th fully expanded young leaf + petiole from bud on non-fruiting terminals	40-50 leaves	Chloride
Barley (tillering)	Late tillering – start of stem elongation (Zadoks scale: 30, Feekes score: 5)	Whole above ground plant	30-40 plants	
Barley (ear emergence)	When head just emerges from the boot (Zadoks scale: 51, Feekes score: 10.1)	Whole above ground plant	20-30 plants	
Bean	Early flowering	Youngest mature leaf	20-30 leaves	Molybdenum
Beetroot	Mid growth to early maturity	Youngest mature leaf blade + petiole from fully developed leaves of current seasons non-fruiting canes	20-30 leaves	
Blackberry	During fruit set	Youngest mature leaf blade + petiole from the mid portion	40-60 leaves	
Blackcurrant	2-3 weeks prior to fruit ripening	Youngest mature leaf blade + petiole from the mid portion of current season's growth	40-60 leaves	
Blueberry	Early harvest	Youngest mature leaf blade + petiole from current season's fruiting shoots.	40-60 leaves	
Boysenberry	During fruit set	Youngest mature leaf blade + petiole from the mid shoot of current season's non-fruiting canes	40-60 leaves	
Brassica	Mid growth	Youngest mature leaf	20-30 leaves	Molybdenum
Broccoli	Early heading	Youngest mature wrapper leaf	20-30 leaves	Molybdenum
Brussel sprout	Sprout initiation	Youngest mature leaf from upper plant	20-30 leaves	Molybdenum
Cabbage	Mid growth	Youngest mature wrapper leaf	20-30 leaves	Molybdenum
Calla lily	Early flowering	Youngest mature leaf	30-50 leaves	

CROP TYPE	RECOMMENDED SAMPLE PERIOD	PART TO SAMPLE	QUANTITY	RECOMMENDED EXTRA TESTS
Capsicum	At flowering or early fruiting	Youngest mature leaf blade + petiole from upper third of plant	20-30 leaves	
Carnation	6-8 weeks after planting	4th and 5th pair of leaves from the base of non-flowering stems	40-60 leaves	Molybdenum
Carrot	When root is 1-3cm diameter	Youngest mature leaf with extended petiole removed	30 leaves	Molybdenum
Cauliflower	Mid growth to early heading	Youngest mature wrapper leaf	20-30 leaves	Molybdenum
Celery	Mid growth	Youngest mature leaf blade + petiole	20-30 leaves	Molybdenum
Cereal (tillering)	Late tillering – start of stem elongation (Zadoks scale: 30, Feekes score: 5)	Whole above ground plant	30-40 plants	
Cereal (ear emergence)	When head just emerges from the boot (Zadoks scale: 51, Feekes score: 10.1)	Whole above ground plant	20-30 plants	
Chicory	Mid season	Leaf blades at grazing height	40-60 leaves	
Cherry	January-February	Youngest mature leaf blade + petiole from the mid portion of current season's extension growth	40-60 leaves	Chloride
Chestnut	January-February	Youngest mature leaf blade + petiole from the current season's non-fruiting shoots	40-60 leaves	
Choumoellier	Mid growth to early bloom	Youngest mature leaf	20-30 leaves	Molybdenum
Chrysanthemum	Early to mid flowering	5th or 6th leaf from tip of flowering stem	20-30 leaves	
Citrus	February-March	Youngest mature leaf blade + petiole from non-fruiting spring extension growth	40-60 leaves	
Courgette	Early flowering	Youngest mature leaf blade + petiole	15-20 leaves	Molybdenum
Cucumber (glasshouse)	Early flowering	Youngest mature leaf blade + petiole taken 30-45cm from growth tip of plant	20 leaves	Molybdenum
Cymbidium	Unpinched plant	Mature 5th or 6th leaf pair from stem tip	20-30 leaves	
Egg plant	Mid growth or full bloom	Youngest mature leaf blade without petiole	20-30 leaves	
Feijoa	February-March	Youngest mature leaf blade + petiole from mid portion of current season's non-fruiting extension growth	40-60 leaves	
Fodder Beet	50–60 days after sowing or half-grown bulb	Youngest mature leaf blade + petiole	20–30 leaves	
Garlic	Bulbing	Youngest mature leaf from upper third of plant	30-50 leaves	
Gooseberry	During fruit set	Youngest mature leaf blade + petiole from current season's non-fruiting canes	40-60 leaves	
Grape (leaf blade)	Veraison	Mid shoot leaves without petiole	30-40 leaves	
Grape (petiole)	Flowering November-December	Petiole taken from opposite the basal cluster	70 petioles	

Crop sampling guide

CROP TYPE	RECOMMENDED SAMPLE PERIOD	PART TO SAMPLE	QUANTITY	RECOMMENDED EXTRA TESTS
Grapefruit	February-March	Youngest mature leaf blade + petiole from non-fruiting spring extension growth	40-60 leaves	
Gypsophila	Mid season	Youngest mature leaf	40-60 leaves	
Hazelnut	February-March	Leaf blade + petiole from mid-shoot leaves from current season's growth	40-60 leaves	Chloride
Hop	Mid season	Youngest mature leaf blade taken from mid season's growth	20-30 leaves	Molybdenum, Chloride
Kale	Mid growth	Youngest mature leaf	20-30 leaves	Molybdenum
Kiwifruit	Spring (before fruitset) Autumn (after fruitset)	Before fruitset, youngest fully expanded leaf + petiole from current season's cane. After fruitset, second youngest mature leaf blade + petiole past final fruit cluster on fruiting cane	20-30 leaves	Molybdenum (2-3 years), Chloride
Kumara	Early to mid tuber development	Youngest mature leaf blade plus petiole	20-30 leaves	
Lemon	February-March	Youngest mature leaf blade + petiole from non-fruiting spring extension growth	40-60 leaves	
Lettuce (glasshouse)	Early heading	Wrapper leaf	20-30 leaves	
Lisianthus	Early flowering	Youngest mature leaf	30-50 leaves	
Lucerne	Active growth period	Top 15cm of plant	20-30 plant tops	Iodine
Macadamia	April-May	Youngest mature leaf + petiole below non-fruiting or flushing growth terminals	40-60 leaves	Chloride
Maize (50% silking)	At 50% silking	Ear leaf (leaf directly at base of cob)	20-25 leaves	
Maize (at 30cm)	Seedling (if nutrient disorder suspected)	Whole shoot	30-40 plants	
Maize (at 40cm)	Seedling (if nutrient disorder suspected)	Youngest fully expanded leaf	20-25 leaves	
Mandarin	February-March	Youngest mature leaf blade + petiole from non-fruiting spring extension growth	40-60 leaves	
Mixed pasture	Active growth period –spring and autumn	Cut representative sample of pasture at grazing height	500g	Iodine
Nashi	January-February	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	
Nectarine	January-February	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	Chloride
Oat (tillering)	Late tillering – start of stem elongation (Zadoks scale: 30, Feekes score: 5)	Whole above ground plant	20-30 plants	
Oat (ear emergence)	When head just emerges from the boot (Zadoks scale: 51, Feekes score: 10.1)	Whole above ground plant	30-40 plants	
Oat (ear emergence)	When head just emerges from the boot (Zadoks scale: 51, Feekes score: 10.1)	Whole above ground plant	30-40 plants	

CROP TYPE	RECOMMENDED SAMPLE PERIOD	PART TO SAMPLE	QUANTITY	RECOMMENDED EXTRA TESTS
Olive	January-February	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	Chloride
Onion	Mid growth	Youngest mature leaf	30-50 leaves	Molybdenum
Orange	February-March	Youngest mature leaf blade + petiole from non-fruiting spring extension growth	40-60 leaves	
Oriental lily	Early flowering	Youngest mature leaf	30-40 leaves	
Parsnip	Mid growth - root is 1-3cm in diameter	Youngest mature leaf	20-30 leaves	Molybdenum
Passionfruit	September	Youngest mature leaf blade + petiole from actively growing laterals	20-30 leaves	
Pea	Between late flowering and harvest	Youngest mature compound leaf	20-30 leaves	Molybdenum
Peach	January-February	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	Chloride
Pear	January-February	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	
Persimmon	February-March	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	
Plantain	Early to mid season	Leaf blades at grazing height	40-60 leaves	
Radiata pine	February-March	Current season's full length foliage from second order branches taken from the tree crown (top third)	15-20 tips	
Plum	January-February	Youngest mature leaf blade + petiole from mid portion of current non-fruiting extension growth	40-60 leaves	
Potato (petiole)	Beginning early season approximately 50 days after emergence (Russet Burbank)	Petiole from the fourth or fifth leaf from tip	30 petioles	Molybdenum
Potato (leaf and petiole)	Early flowering to full bloom	Youngest mature leaf blade + petiole taken from growing tips	20-30 leaves	Molybdenum
Protea	Mid season	Youngest mature leaf	40-50 leaves	
Pumpkin/squash	During fruit set	Youngest mature leaf blade + petiole	20-30 leaves	Molybdenum
Radish	When tuber is half-grown	Youngest mature leaf blade + petiole	20-30 leaves	
Rape	Mid growth	Youngest mature leaf blade + petiole	20-30 leaves	
Raspberry	2-3 weeks post harvest	Youngest mature leaf blade + petiole from the terminal 15cm of non-fruiting canes	40-50 leaves	
Rose	Flowering	Youngest mature leaf blade + petiole from upper part of the flowering stem	20-30 leaves	
Ryegrass	Active growth period	Leaf blades cut at grazing height	500g	Iodine

Crop sampling guide

CROP TYPE	RECOMMENDED SAMPLE PERIOD	PART TO SAMPLE	QUANTITY	RECOMMENDED EXTRA TESTS
Sandersonia (early season)	At bud formation	Youngest mature leaf taken from 3-4 leaf from tip	40-50 leaves	
Sandersonia (mid season)	After bud formation	Youngest mature leaf taken from 3-4 leaf from tip	40-50 leaves	
Silverbeet	Half-grown	Youngest mature leaf blade + petiole	20-30 leaves	Molybdenum
Spinach	4-6 weeks old	Youngest mature leaf blade + petiole	20-30 leaves	Molybdenum
Strawberry	Early maturity November-December	Youngest mature leaf	30-50 leaves	Chloride
Swede	When root is half-grown	Youngest mature leaf	20-30 leaves	Molybdenum
Sweet corn	Seedling (if nutrient disorder suspected)	5th leaf from plant tip taken when plants are between 30 and 70cm tall	20-25 leaves	
Tamarillo	February–March	Youngest mature leaf blade plus petiole taken from well developed, actively growing laterals	20-30 leaves	
Tomato (field)	Early fruit maturity	Youngest mature compound leaf + petiole taken from the top third of the plant	20-30 leaves	
Tomato (glasshouse)	Early fruit maturity	Youngest mature compound leaf + petiole taken from the top third of the plant	20-30 leaves	
Turnip	When root is half-grown	Youngest mature leaf	20-30 leaves	Molybdenum
Walnut	December-January	Terminal leaflet of basal leaves from shoots of average vigour taken at mid season growth	60-100 leaves	Chloride
Wheat (tillering)	Late tillering – start of stem elongation (Zadoks scale: 30, Feekes score: 5)	Whole above ground plant	30-40 plants	
Wheat (ear emergence)	When head just emerges from the boot (Zadoks scale: 51, Feekes score: 10.1)	Whole above ground plant	20-30 plants	
White clover	Active growth period	Leaf plus petiole	50 leaves	
Brassica	Current diet	Whole plant	2 kg	Feed Quality
Compound feed/ Meal	When purchased	Representative sample	500g	Feed Quality
Hay	Mature	Representative sample of hay comprising at least 6 grab samples from at least 6 bales	500g	Feed Quality
Mixed pasture	Current diet	Representative sample of pasture taken at grazing height	500g	Feed Quality
Silage/Baleage	Pre-harvest, ensiled, at feed out	Representative sample of silage comprising at least 6 grab samples from the stack or bale	1 kg	Feed Quality

Ready to send?

Follow these simple steps for sending your samples.

1. Take your sample, place into the sampling bag and seal (each bag represents one sample and is charged as such).

2. Fill out the details on the submission form.
Sample Name (This is essential to identify your sample).
Crop type and Soil type (We need this to give you the correct optimums to interpret your results against).
Tick analysis and any extra tests required.

3. Place the completed submission form, along with your soil or plant samples in the freepost courier envelope and drop at your nearest courier post depot or arrange for pick up with your RD service.

IMPORTANT

Keep samples in the fridge if they are not going to be picked up that day.

Your results are normally available within four days of sample receipt at ARL.

Samples should be sent to the laboratory no later than Thursday to ensure they arrive at ARL on a working day.

What are my payment options?

If you are a Ravensdown customer, your ARL testing can be charged to your Ravensdown credit account. Ravensdown shareholders receive a 10% discount on all ARL testing, and a further 1.5% discount is available to customers who pay by direct debit.

Credit application

If you wish to apply for credit please contact the Ravensdown Customer Centre 0800 100 123 for a credit application form to be sent to you. Please complete and sign this form to confirm that you have read and understand the terms and conditions of credit.

Direct debit

To arrange payment by direct debit, complete both the direct debit form and sample submission form enclosed and send them with your sample(s). Please sign both forms to confirm that you have read and understood the payment terms and ARL Terms of Engagement.

Eftpos

Eftpos facilities are available at reception for customers that bring their samples direct to the laboratory. - we are unable to accept credit cards.

Here to help

For any enquiries, call us on 0800 100 668 or email arl.lab@ravensdown.co.nz

ARL is located at 890 Waitangi Road, Awatoto, Napier.

ARL
analytical research laboratories

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0800 100 668
arllab.co.nz

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