

ANALYSIS REQUEST



Hill Laboratories

BETTER TESTING BETTER RESULTS

RJ Hill Laboratories Limited
1 Clyde Street Hamilton 3216
Private Bag 3205
Hamilton 3240 New Zealand

T +64 7 858 2000
F +64 7 858 2001
E mail@hill-labs.co.nz
W www.hill-labs.co.nz

Accredited by International Accreditation NZ

CLIENT

Name _____

Address _____

Postcode _____

Primary Contact _____

Email _____

Submitter (if different from above) _____

Phone _____ Fax _____

Company _____

Client Ref. _____

Address _____

Additional Ref. _____

Quote No. _____ Order No. _____

Date Sampled _____

RESULTS TO

- CHARGE TO**
- Client Mail Client Mail Submitter
- Submitter (company) Fax Client Fax Submitter Other _____
- Other Email Client Email Submitter Other _____

SOIL SAMPLE DETAILS

Recommended Profiles are outlined below, and on the reverse of this sheet.

Please indicate your requested tests with a

Sample Identification	Sample Depth (mm)	Land Use eg Dairy, Drystock, Crop (Specify)	Soil Code*	Rec. Profile	Basic Soil BS	Sulphate Sulphur SO4	Organic Sulphur OS	Anion Storage Capacity ASC	Total Sulphur tS	Resin P RP	Organic Soil Profile OrgSP	Organic Matter OM	Amal Nitrogen AN	Boron B	Trace Metals EDTA	Mehlich 3 M ³	Other	Lab#

* Soil Code: Ash (A), Pumice (Pu), Peat (Pt), Sedimentary (Sed), Glasshouse (GH)

Recommended Soil Profiles: Pasture (Basic Soil + Sulphate-S), Arable Crops (Basic Soil + Sulphate-S + Available N), Vegetables (Basic Soil + Sulphate S + Available N), Avocado (Basic Soil + M3)

PLANT SAMPLE DETAILS

Recommended Profiles are outlined below, and on the reverse of this sheet.

Please indicate your requested tests with a

Sample Identification	Crop Grown / Variety	Plant Part / Growth Stage	Rec. Profile	Basic Plant BP	Molybdenum MO	Cobalt CO	Selenium SE	Iodine I	Chloride CL	Nitrate NO3	Complete Pasture CPP	Spring Pasture SpPast	Basic Plant CGP	Other	Lab#

Recommended Plant Profiles: Mixed Pasture (Basic Plant + Molybdenum + Cobalt + Selenium), Clover Only (Basic Plant + Molybdenum), Kiwifruit (Basic Plant + Chloride), Avocado (Basic Plant + Chloride), Brassica (Basic Plant + Molybdenum), Pumpkin/Squash (Basic Plant + Molybdenum), Complete Pasture (Mixed Pasture + Clover Only Profiles), Lucerne (Basic Plant + Molybdenum), Spring Pasture (Mixed Pasture + Cl + ME)

OTHER SAMPLE DETAILS

(Refer to Notes below)

Sample Identification	Crop Grown	Description	Tests (See Below)	Lab#

Soil: DDT* – DDT only MRT – Multi Residue Test (for a range of pesticide residues) AHT – Acid Herb Test (for a range of acidic herbicide residues)
*Contact the laboratory for DDT Kit that covers all pesticide testing. N.B. Please identify land use.

Nutrient Solutions: BN – Basic NFT: nitrate-N, phosphorus, potassium, sulphur, calcium, magnesium, sodium, chloride, iron, manganese, zinc, copper, boron, pH, conductivity
MO – molybdenum SiO₂ – silica NH₄ – ammonium-N N.B. Please identify stock solutions.

Potting Media: BM – Basic Media: pH, conductivity, nitrate-N, ammonium-N, phosphorus, potassium, calcium, magnesium, sodium TE – trace elements Fe, Mn, Zn, Cu, B NDI – nitrogen draw-down index

Feedstuff: Feed – dry matter, protein, fibre, metabolisable energy, digestibility, soluble sugars, starch DM – dry matter only

Silage: Silage – pH, dry matter, protein, soluble sugars, starch, fibre, metabolisable energy, digestibility, ammonium N/Total N

Compost: BC – dry matter, nitrogen, phosphorus, potassium, calcium, magnesium, sodium, organic matter, C/N ratio, manganese, copper, iron, zinc, boron

ADDITIONAL INSTRUCTIONS

NB. Please advise laboratory if hazardous substances possibly present in samples.

PLEASE SIGN

refer to terms of trade overleaf

Signature _____ Date _____

Please supply more of:

Request Forms

Quantities:

Plant Bags

Quantities:

Soil Bags

Quantities:

Feed Bags

Other _____

Total Number of Samples Sent Please note: If more than one courier bag being sent for one farm, please indicate eg. 1 of 2, 2 of 3 etc on outside of courier bag so that samples are reported in one job.

SAMPLING INSTRUCTIONS

Interpretation of test data depends on the sample being taken (sampled) in the recommended manner. These notes will help to ensure that this is done. More detailed guides for specific crops are available on request. Please advise laboratory if hazardous substances possibly present in/on samples

Soil:

to determine the nutrient status of soils

- Take samples from sites representative of the greater part of the area. Avoid sampling unusual areas such as around hedges, fences, troughs, gates etc.
- Sample to the correct depth: Pasture 7.5cm, Arable land and orchards 15cm, Turf 7.5cm.
- Sample on a grid or zig-zag pattern, taking at least 20 cores.
Note: only 500cc (0.5 kg) is required for analysis
- Avoid contamination of samples, e.g. fertiliser. Use clean equipment and plastic sample bags.

- Clearly label samples with a permanent marker or ballpoint pen.
- Soils from horticultural, intensive cropping sites and turf areas should be analysed annually, at the same time of year. Arable and pasture paddocks also warrant sampling every year, especially if withholding or reducing fertiliser inputs when more regular data on nutrient depletion is essential.
- Carefully check you have filled in the request form.
- Send sample to laboratory as soon after collection as possible.

Plant:

for diagnosis of nutrient imbalance

- Collect the sample from plants that are representative of the crop. Avoid sampling from plants adjacent to shelter, headlands or other unusual areas.
- Take approximately **100grams (25-30 leaves for larger plants)**.
- Take care to avoid contamination of samples, particularly with soil and fertilisers.
- Identify the sample bags with permanent marker pen. Use plastic sample bags with breather holes or paper bags, to minimise sample deterioration in transit.
- For diagnosis of nutritional disorders, sample plants showing signs of abnormality.
- Carefully check that you have filled in the request form, then promptly despatch to the laboratory.

Plant Sampling Procedures*

Most crops – youngest mature (fully expanded) leaves

Avocado – Select 5-7 month old spring cycle terminal leaves from non-flushing, non-fruiting shoots

Citrus – Fully expanded, spring flush leaves from non-fruiting terminals in Feb/March
Grapes – Select leaf petioles situated opposite the basal cluster during the bloom period. *Specific Analysis Request Form available for Combined Grape Profile (CGP)*

Pasture – Vegetative growth from normal grazing height

Pipfruit & stonefruit – Fully expanded mature leaves from current season's non-fruiting laterals

Tomatoes – Youngest mature leaf, about 20cm from growing tip, including the petiole
* For crops not listed, please contact Hill Laboratories for detailed sampling procedures.

Water:

for diagnosis of suitability for drinking, stock and irrigation

Please supply at least 1-litre of water, in a container without any air. Rinse the bottle (eg plastic soft drink bottle) several times in the water being sampled, before filling it to the top.

Identify the sample bottle with permanent marker pen.

If you want a written assessment, please request **ASS** on the request form. N.B. State intended water use.

RECOMMENDED TEST SELECTIONS

Hill Laboratories offers a wide range of tests for soil and plant testing. To assist you with selecting the tests to suit your particular needs, we have supplied the guide below. This shows which tests are strongly recommended, recommended, or applicable for special investigations only.

Recommendation Legend:

- Strongly recommended
- Recommended
- For special investigations

Note: Soil and Plant testing will incur a sample preparation fee if the basic test is not requested.

Soils

Crop Grown	Basic Soil	Organic Soil	Soluble Salts	Anion Storage Capacity	Organic Matter	Avail. Nitrogen	Sulphate Sulphur	Reserve Mg	Resin P	Organic Sulphur	Boron	Other
	BS	OrgSP	SS	ASC	OM	AN	SO4	rMg	RP	OS	B	
Pasture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		RK
Arable Crop	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Forestry	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	RK
Sports Turf	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
Hort. Tree Crops	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Hort. Field Crops	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
Hort. Protected/Glasshouse	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	

Basic Soil Profile: volume weight, pH, Olsen phosphorus, potassium, calcium, magnesium, sodium, C.E.C., base saturation

Organic Soil Profile: Organic matter, Total N, Available N

Other soil tests available:

SS – soluble salts ASC – Anion Storage Capacity pH – pH only

OM – organic matter AN/AMN – available nitrogen (anaerobic mineralisable N)

SO4 – sulphate sulphur rMg – reserve magnesium TMO – Total Molybdenum

RP – resin phosphorus OS – organic sulphur B – boron

AL – aluminium rK – reserve potassium TN – total nitrogen

EDTA – EDTA manganese, zinc, copper, cobalt TSe – Total Selenium

TP – total phosphorus CN – C:N ratio TS – total sulphur

M3*(mehlich 3) – (P,Mn,Zn,Cu,Co,Fe,Al,B)

M3Ext – (P,Mn,Zn,Cu,Co,Fe,Al,B, Ca, Mg,K,Na)

MinN – NO3N, NH4-N (soils to be frozen before sending)

Plants

Crop Grown	Basic Plant	Molybdenum	Cobalt	Selenium	Iodine	Chloride	Sulphate Sulphur	Aluminium	Plant Nitrate	Other
	BP	MO	CO	SE	I	CL	SO4	AL	NO3	
Pasture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Fruit Crop	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>				
Vegetable Crop	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Kiwifruit	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>				
Arable Crop	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Flowers/Ornamental Crops	<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>	

Basic Plant Profile: nitrogen, phosphorus, potassium, sulphur, calcium, magnesium, sodium, iron, manganese, zinc, copper, boron

Complete Pasture Profile (CPP): The herbage samples is divided in half and the clover is separated out. These are then tested as two samples

Spring Pasture Profile (SpPast): Mixed pasture + Cl + ME

Combined Grape Profile (CGP): Tests are carried out on the petiole (N, NO3-N, P, K, Mg) and the blade (P, K, S, Mg, Ca, Na, Mn, Zn, Cu, Fe, B) of the same leaf sample.

Special plant tests:

MO – molybdenum CO – cobalt

SE – selenium I – iodine CL – chloride SO4 – sulphate sulphur

AL – aluminium NO3 – nitrate-N NI – nutrient indices

TERMS OF TRADE

The following terms and conditions apply for work done by R J Hill Laboratories Limited (henceforth referred to as "Hills"), unless otherwise arranged by the management.

All Customers

- An invoice detailing the charges for work undertaken will be forwarded by Hills with the results
- A monthly statement will be issued by Hills detailing all financial transactions in that month, showing any amount due for payment
- Payment to be made in NZ \$ for the amount as shown on the invoice
- Hills reserve the right to charge the customer for any bank charges associated with processing their payment (eg. foreign exchange charges, cheques drawn on non New Zealand banks, dishonoured cheques etc)

Casual Customers

- Payment to Hills is due within 7 days of date of invoice

Customers with credit approved

- Full payment to Hills is due by the 20th of the month following date of invoice.
- Payment is due immediately and Hills may take immediate action to recover such debt in the event of the following occurring:-
 - The customer is in default under any agreement with Hills
 - The customer commits an act of insolvency or bankruptcy
 - The customer goes into receivership or liquidation

New Customers

- Hills reserves the right to require payment to be made in advance for any work to be done and/or require the customer to fill in a credit application form prior to any information being released

Requests to invoice another customer/entity

Hills will:-

- Not release results until both customer and third party have signed an approval form for re-invoicing to occur
- Charge a \$25 re-invoicing fee to the customer

Overdue Accounts

If an account is overdue, Hills reserves the right to:-

- Withhold results until payment is received
- Charge interest on overdue accounts at the rate of 2% per month from the due date until payment
- Recover from the customer any debt collection charges including commission from Debt Collection Agencies

Poor Account History

Should a customer develop a history of poor account payment, Hills reserve the right to:-

- Require payment prior to release of results
- Refuse to undertake any further work without pre-payment
- Withdraw any special discounts or arrangements that may have been negotiated

Delivery

If Hills is unable to deliver the results or perform a service because of any cause beyond its control (including any force majeure event), it may suspend delivery or cancel the customer's order without incurring any liability for loss or damage suffered by the customer.

Delivery of results shall be deemed to be made to the customer when the results are first dispatched from Hills in Hamilton, New Zealand, or collected by the customer or the customer's agent. All carriers, including couriers, are deemed to be agents of the customer.

Warranties and Conditions

If Hills shall be under any liability whatsoever to the customer then, whether such liability be in contract, tort (including negligence and personal injury), or otherwise and notwithstanding any relief or remedy to which the customer may be entitled under the Contractual Remedies Act 1979 or at law or in equity, such liability shall be limited to the price at which the goods or services are supplied to the customer.

Under no circumstances will Hills be liable for any financial or economic loss or any indirect or consequential loss of any kind whatsoever.

Privacy

The customer agrees that Hills may obtain information about the customer from any person (including any Credit or Debt Collection Agency), for any purpose being in the course of Hills business, including credit assessment and debt collecting and the customer consents to any person providing Hills with such information.

The customer agrees that Hills may use for lawful purposes any information it has about the customer relating to the customer's creditworthiness for lawful purposes.

Jurisdiction

In the event of a dispute arising between Hills and the customer, such dispute shall be governed by New Zealand Law and the place of any hearing shall be Hamilton, New Zealand