# platemeters®
pasture measurement made easy

**G1000**

# Platemeter User Manual

# Welcome ...

## Thank you for choosing the G1000 Bluetooth Platemeter.

The G1000 Bluetooth electronic rising platemeter provides farmers with an easy, accurate and reliable way to measure and record pasture health and share that information.

It provides a valuable tool for maintaining consistency in the measurement of pasture providing a benchmark to reduce variations in visual assessments, truth automated/remote sensing solutions and provide data to other digital support tools.

## Getting started is easy.

Further information about assembling and using your platemeter contact us at:

www.platemeters.co.nz | info@platemeters.co.nz | 0800 577 505

facebook.com/platemeters

Platemeters Limited, 275 Cameron Road, Tauranga 3110, New Zealand

# Contents

# Assembling the Rising Platemeter

Your G1000 Platemeter will come pre-assembled and only requires two steps to be ready for use:

1. Attach the lower handle to the grooved rod by screwing the two parts together.
2. Attach the plastic plate to the bottom of the slide tube by screwing to the thread at the base of the slide tube.

**Note:** If you are retro-fitting an electronic counter to a Manual Platemeter, then follow the steps outlined in Retrofitting an Electronic Counter to a Manual Platemeter.

# Your Platemeter



Upper Handle

Lower Handle

Grooved Rod

Electronic Counter

Slide Tube

Rising Plate
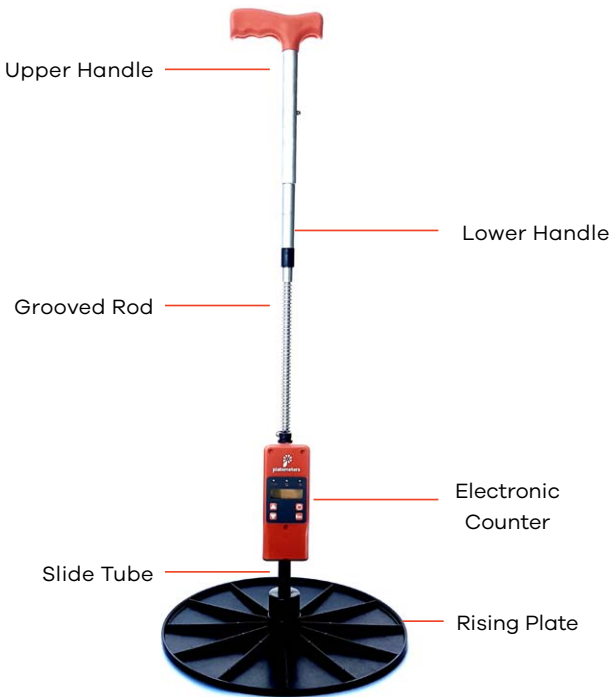
# Platemeter Parts

The G1000 is designed with breakaway components, meaning if it is damaged in an accident the parts are cost effective and easy to replace and in most cases the part can be replaced by the user.

If your Platemeter is damaged or you require a part, please refer to the below diagram to identify the correct part. If you need to replace or repair components for the potentiometer, membrane or within the counter, you'll need to send your Platemeter or the counter to us for assessment.

Visit *https://platemeters.co.nz/collections/parts-for-sale* to purchase replacement parts.

# What's Included



Electronic Counter



Upper Handle



Lower Handle



Grooved Rod



Slide Tube



USB Charger Cable



Rising Plate



Bracket and Screws

# Retrofitting an Electronic Counter to a Manual Platemeter

To purchase retrofitting kits please visit www.platemeters.co.nz

A Platemeters Bluetooth™ enabled electronic counter can be attached to most (Aghub, Jenquip and Trutest and Farmworks) manual plate meters with little or no modification.

However, it is essential that care be taken to ensure it is correctly attached and aligned to ensure smooth operation.

1.  Remove all existing mechanical counters from the Platemeter (if applicable).
2.  Check that a cog is attached to the small shank on the back of the counter. To attach a cog to the shank of the counter - NOTE: DO NOT USE EXCESSIVE PRESSURE. It is best to heat the cog in a hot cup of water prior to pressing onto the shaft.
3.  Lay the Electronic Plate Counter face down on a flat surface so that the cog is to your left.
4.  Turn the cog on the counter anti-clockwise (to the left) until it stops.
5.  Hold the Platemeter with the handle to the left. The hole in the slide tube where the cog fits should face toward you.
6.  Make sure the grooved rod is fully closed to the bottom end of the black slide tube. If you have difficulty keeping the plate closed we suggest that you bind some tape around the large washer and the bulb of the slide tube.
7.  Place the slide tube with the grooved rod inserted onto the back of the counter, fitting the cog into the slit of the tube. The cog should be situated in the middle of the hole in the slide tube.

8.  Place the plastic bracket onto the slide tube, aligning the raised ridge in the bracket with the hole in the slide tube and the screw holes on back of the counter. Place a screw and washer in each side of the bracket and half-tighten; making sure that the cog meets the middle of the grooved rod. Tighten the four screws.

**TEST:** The grooved rod should move freely inside the slide tube. Turn it to make sure it moves easily in all positions. If it sticks then either the slide tube or grooved rod may be damaged, bent or corroded and may need replacing, or it is not correctly aligned on the counter.

9.  Attach the plastic plate by screwing on to the bulb of the slide tube.

**TEST:** Place the Platemeter in an upright position on a hard surface to check the plate closes fully.

# Caring for Your Platemeter

### Avoid getting the counter wet

The counter is in a robust case which is splash proof, however, as it is an electronic device, try to avoid getting the counter saturated.

Immersion in water will result in the circuitry getting wet and damaged, reducing the life of your Platemeter.

### Keep the grooved rod clean

The grooved rod can get a build-up of dirt that affects the accuracy of the Platemeter, as the shaft will not run smoothly, and more force is required to take a reading.

Clean the grooved rod with a poly pad or similar.

**Note:** Do not use lubricant as this will build up inside the black slide tube.

# The Battery

Your Platemeter's counter is powered by a single recharge-able battery, which should give 24 - 26 hours continuous use between charges.

A low battery warning is built in to the counter and might be displayed when switched on. You can continue to take readings; however, it is recommended the battery be recharged before using the Platemeter for an extended period.

Charging the Platemeter can only be done using a Mini USB cable. A standard 2 meter "Mini USB cable" is provided. Connect the larger USB plug on the other end of the USB cable into a USB socket on your computer.

The unit will beep and switch ON automatically and the red LED on the front of the unit will light up if the USB cable is connected correctly. When the battery is fully recharged the unit will give 2 long beeps and display **'Charging Complete'.**

For best results, occasionally allow the Platemeter to remain on charge overnight.

Disconnect the Mini USB cable from the Platemeter switch the unit **'ON'.** There should not be any low battery warning.

### Replacing the Rechargeable Battery

The rechargeable battery can be recharged hundreds of times, but eventually the serviceable time between charges will shorten. When this happens, a replacement battery should be fitted.

To replace the rechargeable battery please visit www.platemeters.co.nz

# Servicing and Repairs

Should an electronic fault develop with your Platemeter, please refer to the www.platemeters.co.nz website for a fault diagnostic and actions to take.
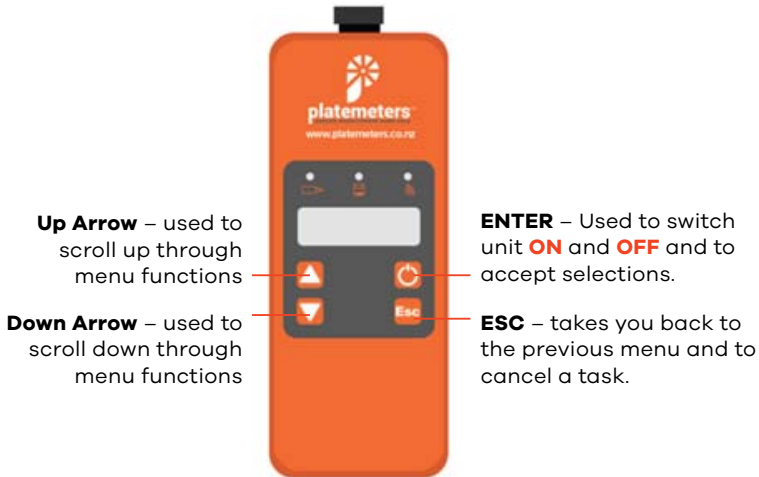
# Operating the Electronic Counter

### Switching Unit On and Off

The Electronic Counter is switched on and off by pressing the ENTER key on the front of the unit for 1 second. When the unit is off there are no numbers displayed on the LCD screen and all of the LED's should be off.

The 5 minute auto-shut off function means that the Platemeter will switch itself off if there is no activity for 5 minutes

### The Front Display Buttons

The six buttons on the front of the unit access the various functions of the Platemeter:



**Up Arrow** – used to scroll up through menu functions

**Down Arrow** – used to scroll down through menu functions

**ENTER** – Used to switch unit **ON** and **OFF** and to accept selections.

**ESC** – takes you back to the previous menu and to cancel a task.

When the unit is first switched on the display will show the model number and the version number.

The menu options will then be displayed for selection, with Bluetooth™ being the first option to be displayed.

## Navigating menus

This platemeter comes with three inbuilt menu functions. Use the ▲▼ arrow buttons to scroll through menu options. Here Below are descriptions of each menu option:

### 1. -Bluetooth

This menu option allows you to connect the platemeter to your smartphone or tablet. When the platemeter is turned on, it will automatically start searching for a smartphone that is running the platemeter app.

### 2.-Manual measure

The Manual Measure option allows you to use your platemeter without the app. You can take pasture measurements and the platemeter will calculate your dry-matter.

### 3.-Calibrate

The calibrate option enables you to fine-tune the mechanical components of the platemeter if any of the components lose accuracy. Calibrating resets the mechanical components, like the way taring reset scales.

# Things to do before you start your first pasture walk

## Download and set up of the App

Download the Platemeters app to your phone or device (Tablet etc).

**In the settings on the mobile app:**

**Once installed opening the app will land you on the Splash page;**



① **Takes you to the page to set up a new Farm**

② **Find information on the App including version, and links to the web site which has the EULA and privacy policy**

③ **Settings page has controls on notifications (sounds and vibrations per reading) and the ability to delete stored information**
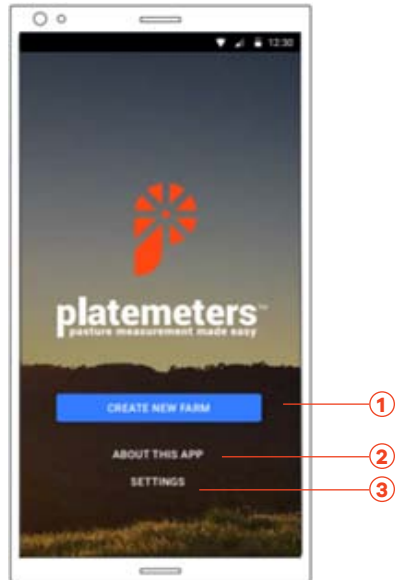
The first time you open the app you will be required to accept:

- The Terms and Conditions also known as the End User Licencing Agreement (EULA)
- that the app can use your GPS, so it can store the locations of the readings
- That the app can store data locally on your device

Declining any of these elements would result in the app not working properly and therefore the app will close.

## Setting up a Farm

This operation needs to be completed just once per user per farm. To create a new farm, click the blue 'CREATE NEW FARM' button on the Splash page (see picture above). To edit the details of the currently active farm, you can click the Pen icon in the top right of the Farm Home Page.



- The app is designed to accommodate multiple farms or farm blocks if they are run as separate units. The "Farm" is the key unit and reporting is based on these,  you cannot split or combine "farms" for reporting.

- The Key attributes of a farm are:
  o Farm Name – Name the Farm or Discrete farm block.
  o Dry Matter Equation – This is the equation(s) that are used to translate the platemeter readings into kgDM/ha. You can choose to change the default set of equations. See the section of Equations for more information.
  o Stock Count –default Stock Count for each Pasture walk. This is important for calculating the feed demand line in the resulting feed Wedge. This field becomes the default setting but can be adjusted per farm walk.
  o Daily Consumption Rate – the targeted per animal feed amount in kilograms of Dry Matter. This combined with the Stock count gives you the Feed demand line. This field becomes the default setting but can be adjusted per farm walk.

o Rotation Days – the target number of days between grazing events (per paddock). This helps determine the slope of the demand line in the feed wedge. This field becomes the default setting but can be adjusted per farm walk.

o Residual – the target post grazing residual in kilograms of Dry Matter per ha. This is used to determine the available feed on hand. This field becomes the default setting but can be adjusted per farm walk.

## Equations

A platemeter records a height measurement of your pasture and this height is then passed through a formula to calculate the kilograms of dry matter per hectare. Research has shown that choosing a set of variables that suit your location, grass type, soil type and other similar factors can be beneficial to producing more accurate reports.

The Platemeters App comes bundled with several alternative sets of formula variables that can you choose from. Each set of formulas includes changing annual variables which the app then smooths out on a daily basis. It is also possible to create your own custom formula.

## Changing the Formula (Equations)

| | |
|---|---|
| To change the active formula for a given farm, go to the **Edit Farm** page and click the blue button **( Platemeter Default )** ( underneath the Dry Matter Equation heading ). |  |

Choose a folder, then tick the actual formula set you wish to use. Click **DONE** to return to the Edit Farm page, and make sure you click **SAVE** to save the change back to the farm record.

If you want to view the actual table data that makes up a particular formula, click the **arrow button** on the right-hand side and you will be shown the monthly variables for that formula.
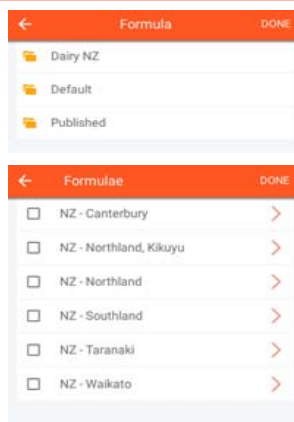


To create a custom formula, go to the **Settings** page and click the **'Custom Formulae'** button and then click the three dots in the top right corner and select **"New Formula"** from the menu.
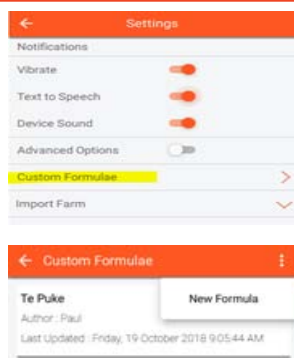


Enter a formula name and author, then enter a default adder and multiplier. The defaults are mandatory and are used in place of any missing monthly formulas.

Optionally, enter an adder and multiplier value for each individual month.

Click **save**.

Your custom formula will now be available as one of the formulas you can select for a farm, in a folder called 'Custom Formulae'.

As an example, the following table illustrates the equations promoted by DairyNZ for dairy pastures since May 2001.

| Month | Multiplier | Adder |
|---|---|---|
| Winter (April – Sept) Default | 140 | 500 |
| October | 115 | 850 |
| November | 120 | 1000 |
| December | 140 | 1250 |
| January | 165 | 1250 |
| February | 185 | 1200 |
| March | 170 | 1100 |

## Create paddocks

This only needs to be completed once per Farm

- The effective size of each paddock is pivotal in all the decision making on farm. If you have had your farm accurately mapped, find the paddock listing and transfer the data as accurately as possible. A 10% variation in paddock size can be the difference between doing 180 MS per animal and 200 MS per animal.
- If you would like to get your farm mapped (or remapped) the please visit www.gpsit.co.nz New Zealand's preeminent Farm Mapping specialists
- The Key Attributes for each Paddock

  The number/name of each paddock
  o  The size of each paddock in Hectares (to 0.00HA)
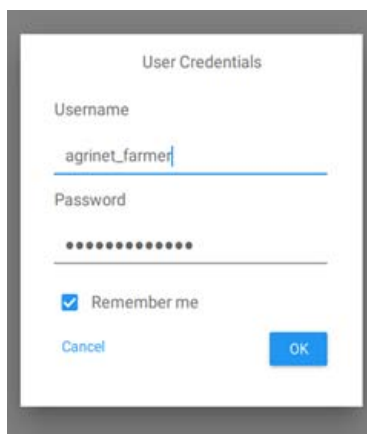
| **AgriNet:** |  |
|---|---|
| If you have paddocks already set up in an AgriNet account, the Platemeters App will allow you to import those paddocks into your app. | |

| | |
|---|---|
| In the popup, enter your AgriNet username and password and click **OK.**<br><br>On the confirmation screen, click Yes to confirm you wish to import the paddocks.<br><br>The App will retrieve the paddocks from AgriNet and update the list of paddocks within the app.<br><br>If you make changes to the paddocks in AgriNet, you can run this again. The app will compare the downloaded list from AgriNet with the local list based on the paddock code from AgriNet matched to the paddock abbreviation in the app. | User Credentials<br><br>Username<br><br>agrinet_farmer<br><br>Password<br><br>••••••••••••<br><br>☑ Remember me<br><br>Cancel        OK |
| **NOTE:** If you are using AgriNet as the source of your paddock list, it is recommended that you do not make any local changes to the paddock names or areas. Instead, make the changes in AgriNet and redownload them to refresh the list locally in your app.<br><br>To help with this, whenever you use this function to download your paddock list from AgriNet, the farm is 'locked for editing' to prevent accidental edits. See the section on the Farm Lock feature for more information on this topic. | |

**Congratulations! You have completed the farm set up.**

# Sharing Farm Information

If you want to copy the same farm information across multiple devices, it is possible to set up the farm once on one source device, then share that farm information. If you choose to use this method, it is recommended that you always perform any edits or changes to the farm and paddock information on that one source device, and re-share it from there.

| | |
|---|---|
| After you have created the farm and entered all the paddock information, from the main farm page, select the three dots in the top right and choose the 'Share Farm' menu option. |  |
| The app will upload the farm information into a temporary online database and return you a code which can be entered into the Platemeters app on another device.<br><br>The app helps you share this code by providing options to email, share via text or social media (note that the options here depend on what applications are already configured on your device) or copy to clipboard. You can also just write it down and tell it to someone.<br><br>The code is valid for one month only.<br><br>Any changes you make to the farm information on any device do not automatically propagate across to any other device. If you make changes, you should generate and share a new code. |  |

To import the farm information into another device, go to the **Settings** page and look for the **'Import Farm'** section.

Click on it to expand this section, then enter the code and click the 'IMPORT' button.

The app will create the farm and import the information for you. It will detect if this farm already exists on the device based on an internal unique identifier and update the information for that farm accordingly.

| Settings |
| --- |
| Notifications |
| Vibrate |
| Text to Speech |
| Device Sound |
| Advanced Options |
| Custom Formulae |
| Import Farm |
| Enter shared code    IMPORT |
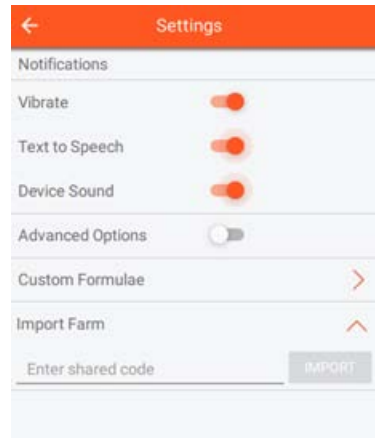
Note that the information transferred includes the farm information such as farm name, stock count, active formula, etc, and the paddock information. It does not include actual walk data or readings.

## Farm Lock

In situations where the source of farm and paddock information for your device is coming from another source device or platform such as AgriNet, the recommendation is to refrain from making any local edits to information such as farm name and paddock names or areas. Instead, you should make the changes at the source, and refresh your device using the same method each time.

For example, if you received a share code to set up a farm on your device, then whenever the source device gets updated, that person should forward you a new share code to update your device too. If you downloaded your paddocks from AgriNet, then after making changes in AgriNet, you should redownload the paddock list to refresh your local data.

To help prevent you from accidentally making local edits, the Platemeters app has a 'Farm Lock' feature that, when enabled, prevents you from making edits. This lock is automatically enabled if you enter a share farm code, or if you import paddock information from AgriNet. However, it is possible to manually toggle the farm lock feature off for a particular farm at any time on your device.

| | |
|---|---|
| From the menu in the top right of the main page, select the "Change Farm" option. |  |
| From the list of available farms, open the menu for the farm you want to lock, and select the 'Edit farm' option. |  |
| Toggle the **"Lock Paddock Editing"** switch on or off. |  |

# Completing a farm Walk

## In App Navigation

The App will automatically open the "Farm Page" (see screenshot below)  of the most recently last active farm.
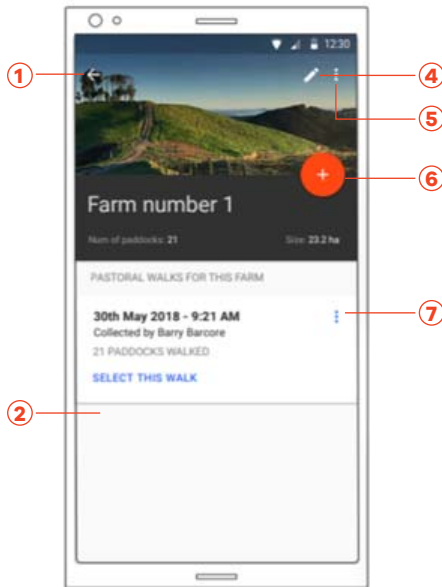


① **Back to Splash page**

② **Past Walks in date order below here**
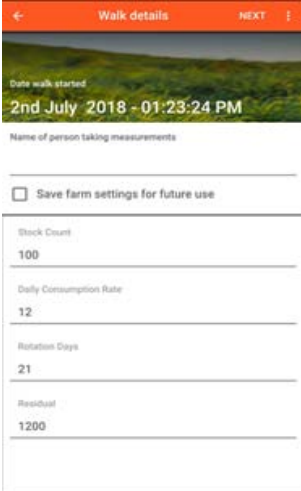
③ **Edit Current farm Change default settings**

④ **Edit Farms Change Farm: (Multi farms) Delete Farm: Paddocks:**

⑤ **Create New Walk**

⑥ **Edit walks View Map: Export data: Delete Walk:**

## Create a new walk

| | |
|---|---|
| From the "Farm Page" select the "Create new Walk Button" |  |
| A new walk will be created with the current time and date stamp and the default settings from the Farm level.<br><br>You can override these settings especially for the farm walk or save them as the defaults going forward.<br><br>There is also a field to record who is conducting the farm walk.<br><br>Clicking the dots in the Top right-hand corner will enable you to save the empty walk and return to the main Farm Page.<br><br>To progress select Next" in the top panel. |  |

## Zero Calibrating your Platemeter

The G1000 platemeter uses mechanical parts to take pasture measurement readings. Your new platemeter comes pre-calibrated so that you can begin using it straight away. However, with regular use of the platemeter some parts can become untuned.

### Use the in-built calibration option

1. Power on the device and ensure that the plate is at the base of the grooved rod.
2. Use the arrow buttons to navigate to *3-Calibrate* and press power button  to enter.

3. This screen will display the height measurement offset in millimetres. Ideally the offset should read zero, in which case you are fully calibrated. If the reading is not zero, ensure the plate is still at the base of the grooved rod and press power button ⏻ to confirm. This will reset the height measurement to zero.

4. Press ESC button to exit the calibration menu and you are ready to go.

**Manually adjust the cog on the back of platemeter counter**

If the above methods are unsuccessful, you can manually adjust the cog on the back of the platemeter counter using a flathead screwdriver (or a thin knife, wire, or other sturdy driving tool).

1) Lay the platemeter face-down on a table or bench and ensure the plate is positioned firmly at the base of the grooved rod.

2) Using a flathead screwdriver (or similar tool) firmly but gently wind the metal cog fitting anti-clockwise. The metal fitting should move while the gear stays still in position.

**Important:** Be careful not to over-wind the metal cog fitting. Over winding can damage the unit. Use a firm but gentle amount of force to wind the fitting anti-clockwise.

For more information about calibrating your platemeter visit www.platemeters.co.nz

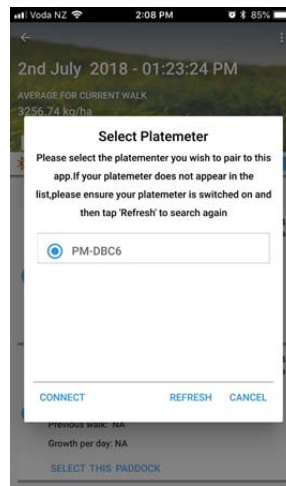## Connecting the Bluetooth™ Platemeter to the Platemeter APP

Switch on the Platemeter (or navigate to "Bluetooth" on the main menu of the Platemeter). The unit will beep and display "1- BLUETOOTH" and a "PM-####" number

**In the App**
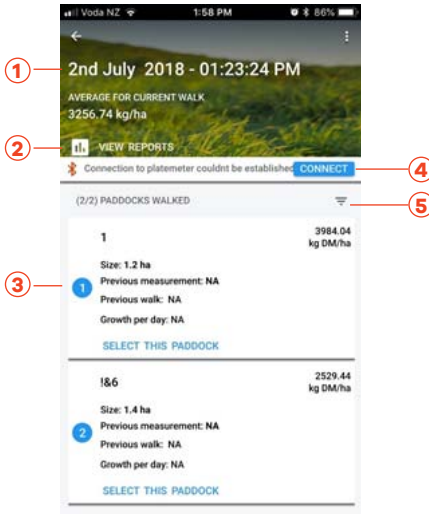


① Walk summary

② Reports (finish walk)

③ Paddock walk order

④ Connect to the Platemeter

⑤ Sort Paddocks By

**Select the "Connect" button**

The App will look for all Bluetooth connections available and display a list of devices. If it does not pick it up first time select "REFRESH"

Once your Platemeter appears select it and select "CONNECT" The Platemeter will beep and the Bluetooth light on the platemeter counter will show continuous blue.

You will be returned to your walk and the connected Bluetooth Platemeter will display underneath "VIEW REPORTS".

## Recording Measurements

Set up the Walk and then connect the Platemeter.

Select the paddock that you would like to walk and commence readings.

The default settings will mean the App will beep per reading and call out the count of readings every five (5) readings.



① Platemeter connection information

② Individual readings

③ Manual input option

④ Average height reading

⑤ Delete individual reading

DairyNZ recommend at least 30 readings per page. Refer to www.platemeters.co.nz for video tutorials on the best way to approach a paddock.

When you have sufficient readings click the back arrow in the Top Left-hand corner of the page and select the next paddock to walk.

# Using the Correct Measuring Technique

Differences in measuring techniques can alter measured covers by as much as 600 kgDM/ha resulting in a significant effect on the decisions made off the data.

### Correct Technique

1) Place the plate on top of the pasture with as little pressure as possible.

2) Push the shaft down to ground level ensuring the shaft remains vertical.

3) The Platemeter will need to read the highest point the plate lifts before descending

Taking measurements by forcefully plunging the plate onto the pasture will give lower  readings because of the increased downward force of the plate.

**IMPORTANT**: Please ensure that you wait for the Platemeter/app to beep at each measurement – not doing so can result in missed readings.
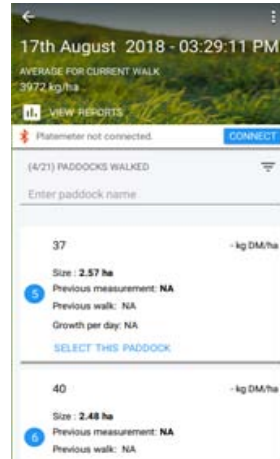
# Best Practice for measuring a paddock

1) Survey the paddock on entry and choose a path (not necessarily straight) across the paddock that will avoid passing through ;

   i) Areas of high stock movement such as gates, feeding/ water trough's, shading etc

   ii) Sloping areas which may have lower covers

   iii) Wetter areas which may have higher covers (esp. in high summer) Avoid stock camps which are bare earth. The greater the variability the greater the number of plonks you should take.

2) Walk along the chosen path taking readings on a regular basis e.g. every three to five paces

   i) The individual kgDM/ha per reading is immediately calculated and displayed in the App (or the screen of the Platemeter in manual mode)

   ii) The Average Cover is also calculated and displays in the "Paddock Information" panel

   iii) The number of measurements to be taken should range between 20 and 40 per paddock however this will be determined by the variance existing in the cover. The number of measurements is displayed in the "Paddock Information" panel.

   iv) The Platemeter app will give audio cues at every five readings, this can be managed in "Settings" which is access from the Splash page. (The Platemeter will beep twice at 30 readings in Manual Mode)

3) At the end of the paddock quickly review the individual readings and delete any that are suspected of being an error (or write down the Average Coverage if you are using Manual Mode).

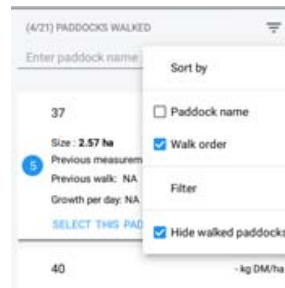## Changing Paddock

To change paddocks

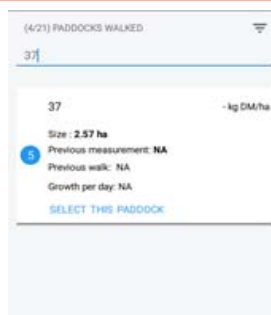| | |
|---|---|
| • Navigate back (using the arrow in the top left-hand side) to the Walk Page where all the paddocks are listed.<br><br>• Select from the list the next paddock to be entered. |  |
| Clicking the sort button will present a drop-down menu that allows you to change how the paddock list is sorted or filtered.<br><br>You can choose to sort the list by either Paddock name or the Walk Order.<br><br>You can also choose to hide from the list paddocks that have readings already for this particular walk. This means that as soon as you finish a particular paddock and return to this page, the list will refresh and the paddock you just walked will disappear. |  |

| | |
|---|---|
| Alternatively, you can search for a particular paddock using the search box situated above the list.<br><br>Note that the search results are also filtered depending on whether you have chosen to hide walked paddocks. E.g. if you are hiding walked paddocks then the search results will only display unwalked paddocks. |  |
| Note that the Platemeters App will only record readings from a connected platemeter when the app is on the Paddock page for a particular paddock. |  |
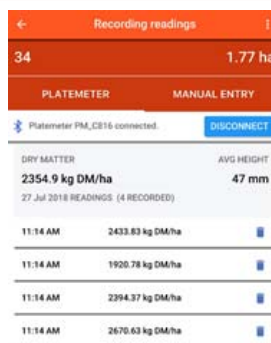
If you need to negotiate an obstacle (e.g. fence or creek) switch the unit off or navigate out of the "Paddock page" so that no readings are taken if the plate moves.

# Exporting Data

Repeat the prior process until you have completed every paddock you would like to measure.

You do not have to walk every paddock; the App will adjust the average cover and feed on hand calculations for just the paddocks measured.

Switch the unit off by holding down the Enter key for 5 seconds.

**NB:** If there is no activity for 5 minutes the unit will beep as a warning that the unit will power off in 5 seconds.

**From the Pasture Walk screen:**

Select the "VIEW REPORTS" link (can also be access from the "Farm Screen" via the three dots on each walk)
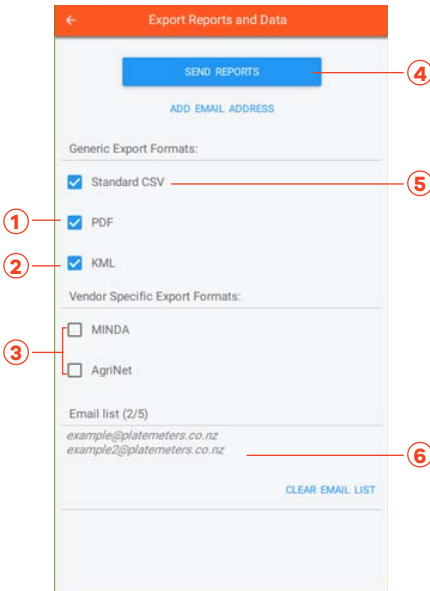


① **PDF is the main report which has the Feed Wedge and the paddock ranking report**

② **KML Files are for viewing readings on a map.**

③ **Use these options to export data to specific third-party vendors.**

④ **Click this button to request the selected reports to send to the email addresses entered.**

⑤ **This will export to .CSV for importing into other apps.**

⑥ **Add up to five email addresses which the reports will be sent directly to.**

# Viewing the Reports

The reports will be emailed directly to the specified email addresses and can be viewed directly on your phone or on any other device.
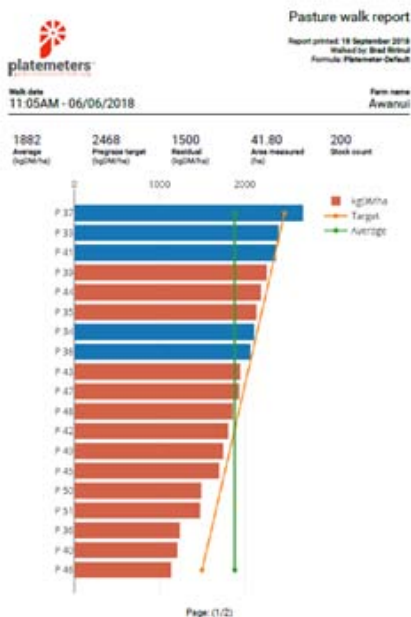
The generic reports include:

- CSV – this is a generic spreadsheet of all the paddock summary information.

- PDF – this document includes a Feed Wedge chart and a table of the most relevant paddock summary information.

- KML – This generic spatial format can be opened in many online and desktop programmes such as Google Earth, and show the paddock summaries and readings located spatially on a map. Note that this is only useful if the data has been collected in the Platemeters App using a platemeter with GPS on the device enabled.

## The advanced export options include:

MINDA – this is a spreadsheet of the paddock summary data formatted especially so it can be directly uploaded to MINDA Land & Feed in the Pasture Cover tab. Any questions on this process should be directed to MINDA. You can find more information about MINDA online at https://www.lic.co.nz/products-and-services/minda

AgriNet – ticking this option in the app will prompt the user for their AgriNet username, password and the email address associated with their AgriNet login. The Platemeters app will upload the walk data into AgriNet ready for the user to use next time they log into AgriNet. To access the data, select the Grass Covers section, then New Grass Cover, and look for the button labelled "Platemeters G1000". Any questions on this process should be directed to AgriNet at the following link:

https://www.agrinet.ie/Support/Contact-Us

Example screenshots of the PDF report

# Frequently Asked Questions

**Q:  Can I use my G1000 without the App?**

A:  Yes – the Platemeter will operate out of the box and provide dry matter metric for the paddock.

**Q   Why use the G1000 with the Platemeter App?**

A:  o   It's free and easy to use.

o   The app removes the need to write any information down.

o   Automated reporting for each farm walk including the feed wedge and the paddock ranking report.

o   You can choose from a number of DairyNZ recommended regional specific dry matter correction factors which will significantly add to the accuracy of your metrics.

**Q:  Why won't my G1000 take readings?**

A:  In most cases it needs to be calibrated. See **"Zero Calibrating your Platemeter"** for instructions on how to do this.

**Q:  What should I do if I need help using my Platemeter or the app, or if I require extra parts?**

A:  o   Call us on **0800 505 577, +64 7 573 6077**, or email us at platemeters@gpsit.co.nz

o   You can also order parts online at www.platemeters.co.nz

# Thank you.

**THANKS AGAIN FOR CHOOSING TO MAKE YOUR PASTURE
MANAGEMENT SIMPLE
WITH THE G1000 BLUETOOTH PLATEMETER**

If you need any further information or support,
please contact us.

**platemeters**®
pasture measurement made easy

www.platemeters.co.nz