Rising plate meter

> **Rising plate meters provide a convenient way of assessing field cover through measurements of the sward height.**

The most convenient models have a sliding central plate which rotates a counter to provide the height measurement (**Figure 1**).

Having placed the probe on the ground, the plate is slid down the stem and positioned on the grass surface, compressing the sward a little.

It is the plate moving down the central probe that causes the counter to register readings.

The meter should always be placed vertically as the plate needs to be parallel to the ground for the most accurate reading.

There are two types of plate meter, firstly the mechanical and secondly the electronic, both measure grass cover in terms of kg of dry matter per hectare.

Figure 1: A Mechanical Rising Plate Meter

Electronic Plate Meter

This plate meter works on exactly the same principle as a mechanical one, in that the plate rises up and down the shaft taking measurements. But this model does the calculations for you, so at the beginning you turn the unit on and after you have walked the field and done 50 'plonks' you press cover and it displays the field's cover. This model comes with preset factory calculations, but these can be changed if you wish.

Measuring Field Cover with a Mechanical Plate Meter

An accurate assessment of cover across the field can be obtained using a simple seven-step process:

Step 1. Record the start reading on the counter (say, 15,000)

Step 2. Take at least 50 readings across the field, including all different patches of growth to get a representative sample of the sward

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Step 3. Record the final reading on the counter (15,750)

Step 4. Calculate the difference between the first and last reading(15,750 –15,000 = 750)

Step 5. Divide this difference by the number of readings taken to obtain the average (750 ÷ 50 = 15)

Step 6. Convert the reading into field cover using a conversion formula or ready reckoner.

Plate Meter Conversion Formula

A number of equations can be used to relate sward height measured with a plate meter to sward cover.

The most widely used equation is:

Field cover (kg DM/ha) = Average Rising Plate Meter reading (RPM units) x 125 + 640

A 6.68 RPM reading indicates a cover of (6.68 x 125 + 640) or 1475kg DM/ha

NB: Because there are other equations which may work differently it is important to take specialist advice when first making plate meter conversions.

Mechanical Plate Meter Ready Reckoner

Based on the same equation, total plate meter readings taken over 50 locations equate to the following field covers:

Plate Meter Reading Final – initial (50 measurements)	Field Cover (kg DM/ha)
224	1200
244	1250
264	1300
284	1350
304	1400
324	1450
344	1500
364	1550
384	1600
404	1650
424	1700
444	1750
464	1800
484	1850
504	1900
524	1950
544	2000
564	2050
584	2100
604	2150
624	2200
644	2250
664	2300
684	2350
704	2400
724	2450
744	2500
764	2550
784	2600
804	2650
824	2700
844	2750
864	2800
884	2850
904	2900
924	2950