

PCSM - Phil Callahan Soil Meter™

Professor Phil Callahan has suggested that paramagnetism represents "Light from Rocks to the Roots". His PCSM has effectively lifted an abstract concept into the realms of hard science.

The revolutionary new PCSM Meter (Paramagnetic Count Soil Meter or Phil Callahan Soil Meter) offers a new dimension in fertility monitoring. Developed by Dr Phil Callahan, the meter accurately measures the paramagnetism of soil and other materials. Paramagnetism has been termed "The Missing Link" in high production agriculture.

Benefits

- The PCSM can be used as a general fertility monitor - the higher the fertility the higher the CGS reading.
- The PCSM can be used to identify paramagnetic inputs for fertility building.
- This tool can often be used as a problem-solver when soil tests don't explain poor crop performance.
- The tool can be used to monitor the progress of nutrition programs. Note: A well-balanced, fertile soil will contain good levels of oxygen. Oxygen is a highly paramagnetic gas.

Features

- Fully enclosed in a shockproof high density plastic carry case.
- Lightweight and durable.



PACKAGING

Weight: 1.45 kg
Product Code: METPCSM



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Postage Information

The meter comes in its own carry case. Due to the value of this tool, it will be sent via registered post. Enquire about postage charges.

Calibration

- Switch the unit on and check to make sure the input well (situated near the bottom on the left-hand-side of the machine) is clean.
- Turn the tuning knob either clockwise or anti-clockwise until the LCD display reads zero (0).
- Switch the unit off, wait 5 seconds then turn the unit back on again - it should be reading 0 or very close to it.
- Place the standard sample (supplied with the unit) of 700 CGS into the well. The display will read 70 on the single range machine (this figure multiplied by 10 to give the actual reading). The reading on the dual range machine will either be 700 (on the 1 x scale) or 70 (on the 10 x scale). If the meter reads correctly then turn the machine off and remove the sample. Turn it on again if you wish to continue sampling.
- **Note:** It is a good idea to turn the machine off after each sample measurement and double-check that it is still reading 0 (the field value can drift over time).

Miscellaneous

- The unit relies on measuring the paramagnetic ability of the soil but can be influenced by other forces such as electric fields, magnetic fields and electromagnetic emissions. A general rule is that if the situation will affect a navigational compass it will most likely affect the PCSM.
- The unit is powered by a 9 volt battery. Symptoms of a flat battery include:
 - No displayed figure in the LCD with the unit is turned on.
 - Failure of the LED power light to become bright when the machine is turned on.
 - Failure of the unit to recognise the 700 standard.
 - Changing the battery should be the first remedial step if a problem is encountered.
- A high paramagnetic reading does not necessarily infer a high paramagnetic ability as iron can confound the machine. When determining the quality of a rock dust sample it should always be accompanied by a mineral analysis to ensure the measurement is due to paramagnetic influence rather than ferromagnetism from iron in the sample.
- If the sample does not read 700 the sample container should be gently tapped to ensure the sample is firmly packed as air spaces in the sample can affect the reading.
- Water is diamagnetic (negative paramagnetism) and a wet sample may read lower than it would read dry.

Mode of Action

The PCSM meter measures the paramagnetism of a given sample of soil or rock dust. Paramagnetism is a low level energy which can exert a tremendous impact upon plants and soil micro-organisms. Productive volcanic soils are invariably highly paramagnetic. This phenomenon is characterised by the capacity of these soils to intercept electromagnetic energy (usually derived from lightening) and to store, transform and transmit this energy to surrounding plants and micro-organisms.

Paramagnetic rock dust can be added to soils of non-volcanic origin to boost their fertility. Laboratory research has demonstrated a 300% increase in microbial cell division associated with paramagnetic influence from rock dust. Basalt (blue metal) is usually the most productive paramagnetic rock dust in Australia, and the PCSM can be used to determine the most beneficial basalt inputs. The PCSM measures CGS (centimetres / grams / seconds), and the following is a guideline:

0 - 100 CGS	Poor Soil
100 - 300 CGS	Good Soil
300+ CGS	Excellent Soil

A good basalt rock dust should read a minimum of 1500 CGS

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