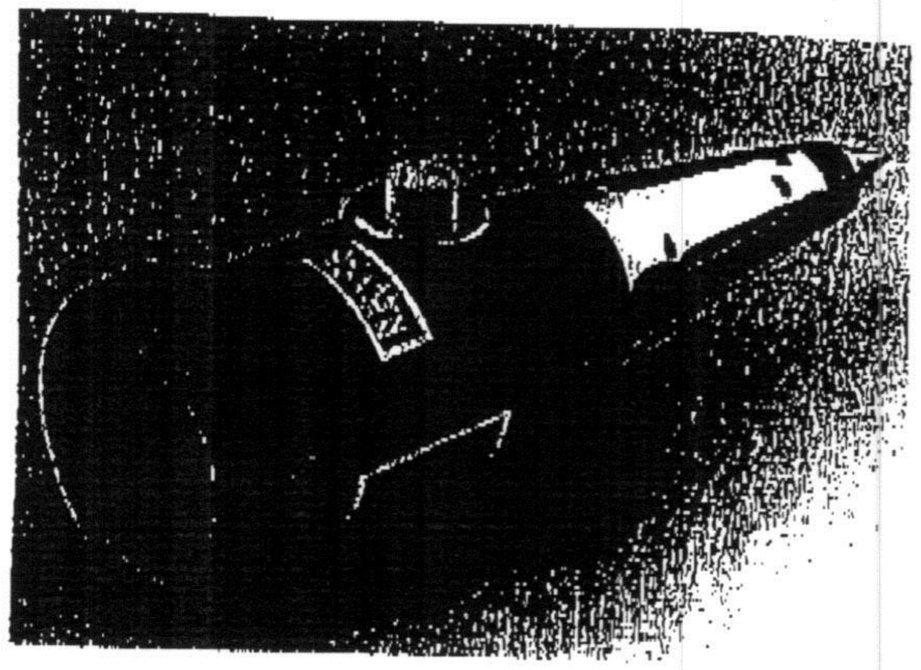
PH-TESTER FOR SOIL DM-5



Purpose of the pH-meter

To make the soil suitable for the absorption of fertiliser, acidic soil must be neutralised with lime or a lime-based fertiliser. However, if too much lime or lime fertiliser is used, the result will be a manganese deficiency causing complete infertility of the soil. Therefore, if a lime treatment of the soil is required, it is recommended first to determine the degree of acidity, i.e. the pH of the soil to have a basis on which to decide how much lime must be added. This can be simply done with the pH-meter which has already been successfully used by many market gardened. A perfectly neutral soil has a pH = 7; the instrument should always indicate this value before taking any readings.

How to use the pH-meter

1. Take the instrument out of its case and check that the needle indicates pH 7 (fig.1). If this is not the case it can be very simple adjusted. Remove the cover and glass window from the instrument and carefully turn the adjusting screw clockwise or counter-clockwise, as the case may be.
2. The electrode is very vulnerable and should carefully cleaned with water and dried with a clean cloth before and after use (fig.2). This is very important since otherwise the reading are not correct. After cleaning, the electrodes should not get in contact with anything, not even with your hands since these always give off some transpiration, however slight, and this would adversely affect the readings.
3. Fill the soil holder with the soil under test and pack the soil so as to be sure that the complete electrode surface will be in contact with it. Insert the instrument into the soil until the silver-coloured electrodes are completely covered with soil. Then turn the instrument two or three times about its longitudinal axis to ensure good contact between soil and electrodes (fig.3).
Black earth, clay. loam etc. should have a moisture content (shown on the meter) between 50 and 70%.
If the soil is too wet, the water should be pressed out until the moisture content is at a minimum 50%. Humus-rich soil may have a higher moisture content, even exceeding 100% as is often the case. If the soil is too dry, the pH cannot be measured; in that case it should first be moistened with distilled water; readings can then be taken after abt. 2 hours.
4. To measure the moisture content in the soil, press the white button; the moisture content can be read off immediately. After use, clean the electrodes thoroughly with water and wipe off with a dry cloth (fig.2). Normal soil used for cultivation will seldom have a moisture content below 30% as is the case e.g. with dry sand.
5. It takes the needle about three minutes to get stabilised. Next the pH can be read off (fig.4). DO NOT allow the meter to stay in the soil for more than 5 minutes. This will prevent undue corrosion of the electrodes .

Fig.2

Fig.3

Fig.4

Fig.5

Plus points of the pH-meter

1. Since the instrument generates its own current when in contact with the soil, no chemicals, distilled water and/or external source of current, such as a battery, are required .
2. Measuring is extremely simple: just insert the electrode into the soil and the pH can be read off a few minutes later (clean instrument with water before and after use).
3. The instrument is compact, of attractive design and easy to carry along.

Practical hints

1. A fluctuating needle may have any of the following causes:
The soil does not completely cover the electrodes. High salt content in the soil. High iron, magnesium content etc. The soil has recently been manured so that you actually measure the manure.
2. Rust on the electrodes clean and free from rust. Surface corrosion will detrimentally affect the sensitivity of the instrument which in that case will no longer indicate reliable pH and moisture values may be removed with sand. After cleaning, wait at least half an hour before taking readings.
3. H.T. masts or other sources of stray currents in the neighbourhood of the soil to be measured are likely to cause the instrument to give too high pH and moisture readings. Accurate readings are impossible in places such as these.
4. The operation of the instrument being based on current generation through contact with the soil, the readings will depend to some extent on degree in which the soil has been packed down, and on the moisture content of the soil. It is recommended therefore to take the average of 5 or 6 readings.
5. The instrument should be handled with the utmost care. Do not drop it, do not expose it to strong vibrations, impact etc. We wish to emphasise that the pH-meter is meant to test whether the soil has the correct pH value so that in case of deviation you can protect your crop from damage in time.
If the result is negative, you can take action immediately and this save yourself quite a bit of trouble. The moisture tester incorporated in the instrument is NOT intended for determining the exact moisture content in the soil but ONLY to determine whether the soil has the right moisture content for taking pH readings.

Specification:

Scale	: pH 3½ - 8/moisture 0-100%
Accuracy	: 10%
Size/weight	: 160 x 50 mm/170grams

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