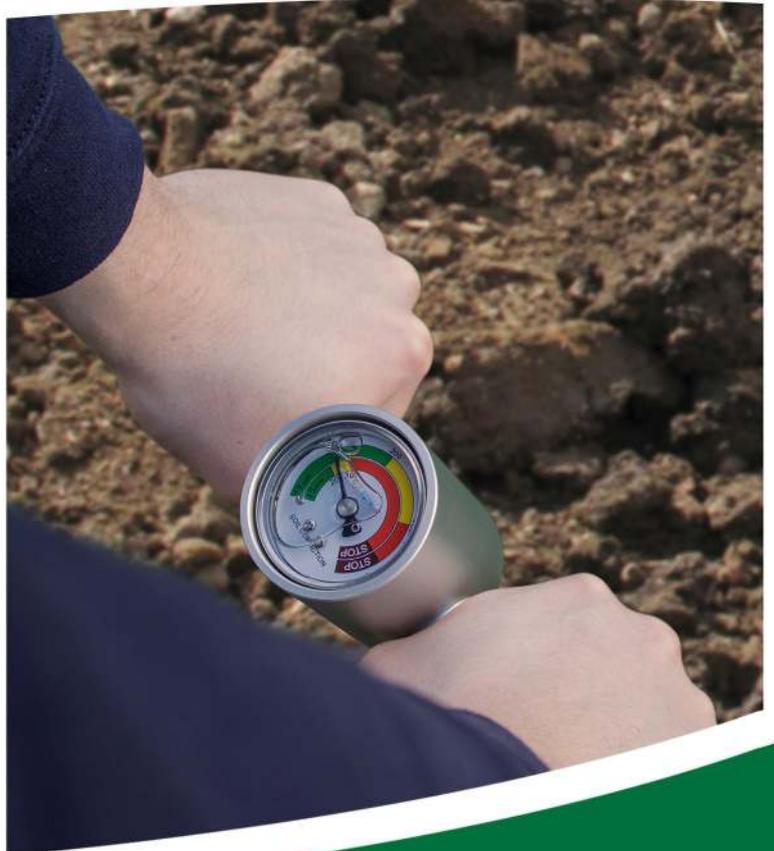


# Martin Lishman

# Soil Testing



*Soil Quality Testing and Sampling*

## Palintest Soil Testing Kits

Palintest Soil Test Kits are reliable testing tools for optimising crop yields and preventing inefficient fertilizer use. They allow in-field testing of soil samples comparable to standard laboratory methods but in a fraction of the time.



### SK100 Soil pH and Lime Requirement

pH tests plus test to calculate lime requirement (CaCO<sub>3</sub>), using visual colour comparison.



### SK200 Soil Fertility

As for the SK100 plus tests for nitrogen, phosphorus and potassium (N/P/K).



### SK300 Soil Management

As for the SK200 plus magnesium (Mg) and calcium (Ca) and pocket sensor for EC and soluble salts.

### Key Features

- **Portable** - for agronomists, farmers and fertiliser professionals.
- **Simple to use** soil reagent tablets give reliable results - without soil analysis training.
- **Visual testing** - a colour comparison block in the SK100, SK200 and SK300 kits gives clear results.
- **Digital testing** - the Soiltest 10 Bluetooth Photometer in the SKW400 and SKW500 kits allows high accuracy testing and data download.
- **50 tests** - sufficient consumables for 50 tests of each parameter.

Choose Your Soil Kit					
	SK100	SK200	SK300	SKW400	SKW500
pH	✓	✓	✓	✓	✓
Lime	✓	✓	✓	✓	✓
N,P,K		✓	✓	✓	✓
Mg			✓	✓	✓
Ca			✓	✓	✓
EC			✓	✓	✓
Salts				✓	✓
Al					✓
NH <sub>3</sub>					✓
Cu					✓
Fe					✓
Mn					✓
S					✓



### SKW400 Professional Soil Management

Digital testing of nitrogen, phosphorus and potassium (N/P/K), magnesium (Mg) and calcium (Ca), plus pocket sensor for pH, lime requirement (CaCO<sub>3</sub>), EC, TDS and salinity - supplied in a robust carry case.



### SKW500 Complete Portable Laboratory

for agronomists, soil scientists and farming professionals to digitally test a full range of soil macronutrients and micronutrients. As for the SKW400 plus aluminium (Al), ammonia nitrogen (NH<sub>3</sub>), copper (Cu), iron (Fe), sulphur (S) and manganese (Mn).

## Palintest Water Quality and Sewage Effluent Testing Kits

With increased focus on protecting water quality from agricultural pollution caused by nitrates from run-off or sewage and slurry sludge disposal it has become more important to test water quality to assist with delivering measurable reductions in pollutants.

### Water Quality Kit

For run-off, waste, drinking and extracted water, based on Multiparameter photometers combined with reagent packs for a wide range of tests such as nitrate, iron etc.

The photometers use digital colour analysis to provide repeatable and accurate results even at low concentrations.



Photometer 7100  
- standard kit



Photometer 7500  
- Bluetooth kit

### Water Quality Kit Test Reagents

Build your own test kit with easy-to-use tablet reagents available in pack sizes to carry out 50 to 250 tests.

Tests include Nitrate, Phosphate, Potassium, Chlorine, Calcium, Iron, Sulphate, Zinc and many more.

Please enquire for details of the test kit options.

### Sewage Effluent Kit

To carry out essential quality control checks of sewage and slurry effluent discharges, to ensure compliance with quality standards. Includes testing for Permanganate Value, pH, Turbidity, suspended solids (TSS) and organic pollution (BOD, COD, TOC). Does not require water analysis training. Contains reagents and equipment for 50 tests of each parameter.



## Soil Compaction



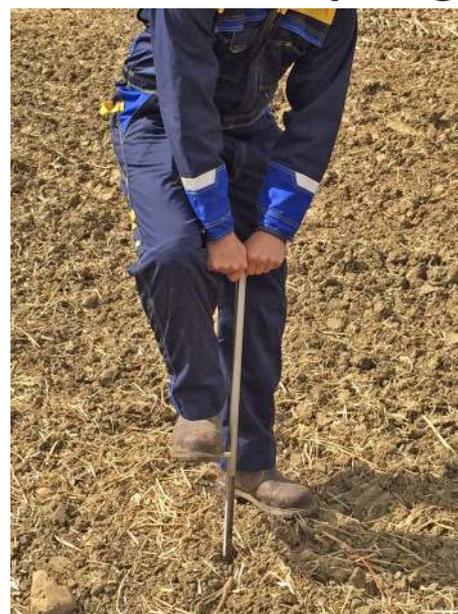
### SOIL COMPACTION TESTER

The Martin Lishman soil compaction tester is a robust, stainless steel penetrometer with pressure gauge. It helps identify compaction layers, measure soil firmness and contributes to essential soil management decisions.

#### Key Features

- **Built-in pressure gauge** - colour coded to give compaction pressure readings at different depths. Re-fillable oil chamber.
- **Stainless steel probe** - 75cm long with 10cm graduation marks. Supplied with two tips for firm and soft soil and integral tip storage device.
- **Strong**, anodised aluminium housing and ergonomic handle.

## Soil Sampling



### SOIL SAMPLING AUGERS

A wide range of sampling solutions for all soil types and depths, from simple pot plant samplers to heavy duty augers with reinforced hammering heads. The most widely used in agriculture is the footrest soil sampler.

#### Key Features

- **Stainless steel** - with titanium components
- **20cm pot plant sampler** - for container plants, with 10ml scale for defined soil samples
- **30cm footrest sampler** - with foot rest for crops with dense root zones
- **60cm hammer head sampler** - detachable rubber sheathed grip with notch for removing soil samples. With 10cm scale. Use for outdoor vegetables.

## Compost Temperature Packages

Stainless steel push-in sensors for compost production temperature monitoring can be combined in a package with a MiniTemp Monitor, supplied as a complete Bluetooth unit or as part of our Barn Owl Wireless System.

### Soil and Compost Thermometer

32.5mm long, 12mm diameter temperature probe, supplied with protective sleeve.



#### MiniTemp Monitor

with 600mm or 2m stainless steel compost temperature sensor

#### MiniTemp Blue with 2m stainless steel sensor

- compost temperature monitoring with data logging

- Instant crop temperature readings with Android or iOS app
- Avoids walking over compost to take readings
- Logs temperature data for up to 6 months
- Download stored data for long-term record keeping



#### Wireless Compost Temperature Monitoring



#### Barn Owl Wireless

Wireless and remote compost temperature monitoring using 2m stainless steel sensors with data storage and management - please ask for further details or visit our website.



# Soil Quality Details and Specifications

## Soil and Water Test Kits

### SK100 Soil pH and Lime (Product Code: SOIL/ST/SK100)

Soiltester, reagents for 50 of each test, sample preparation accessories, hard carry case

### SK200 Soil pH, Lime, NPK (Product Code: SOIL/ST/SK200)

Soiltesters, reagents for 50 of each test, sample preparation accessories, shoulder bag

### SK300 Soil pH, Lime, NPK, Mg, Ca, EC (Product Code: SOIL/ST/SK300)

Soiltesters, reagents for 50 of each test, pocket conductivity sensor, calibration standard, sample preparation accessories, shoulder bag and hard carry case

### SKW400 Soil pH, Lime, NPK, Mg, Ca, EC, Salinity (Product Code: SOIL/ST/SKW400)

Bluetooth Soiltest 10 photometer with check standards, downloadable Aqua Pal app, reagents for 50 of each test, multi-parameter pocket sensor, calibration solutions, sample preparation accessories, IP67 lockable carry case with integrated work surface

### SKW500 Soil pH, Lime, NPK, Mg, Ca, EC, Salinity, Al, NH<sub>3</sub>, Cl, Cu, Fe, Mn, S (Product Code: SOIL/ST/SKW500)

Contents as for SKW500, plus reagents to suit the additional tests

Replacement Reagent Tablets Available in 50 test packs as follows:

Product Code	Description	SK100	SK200	SK300	SKW400	SKW500
SOIL/ST/ST2200	pH	✓	✓	✓		
SOIL/ST/ST2210	Lime	✓	✓	✓	✓	✓
SOIL/ST/SKR001	Nitrate		✓	✓	✓	✓
SOIL/ST/SKR002	Phosphate		✓	✓		
SOIL/ST/SKR003	Phosphate 2				✓	✓
SOIL/ST/SKR004	Potassium		✓	✓	✓	✓
SOIL/ST/SKR005	Magnesium/Calcium			✓	✓	✓
SOIL/ST/SKR006	Aluminium					✓
SOIL/ST/SKR007	Ammonia					✓
SOIL/ST/SKR008	Copper					✓
SOIL/ST/SKR009	Iron					✓
SOIL/ST/SKR010	Manganese					✓

### Water Quality Kit - Photometer 7100 (Product Code: SOIL/WATER/7100)

Photometer, sample preparation accessories, hard carry case

### Water Quality Kit - Photometer 7500 (Product Code: SOIL/WATER/7500)

Bluetooth photometer, sample preparation accessories, hard carry case

### Sewage Effluent Kit (Product Code: SOIL/SEWAGE)

Reagents and sample preparation accessories for 50 tests of Permanganate Value, pH, Turbidity, TSS, Temperature, BOD, COD, TOC, hard carry case

### Soil Compaction Tester (Product Code: SOILCOMPACT)

Stainless steel probe, anodized aluminium handle, analogue manometer, with two tips for firm and soft soil and integral tip storage device.

### Soil Sampling Spears

20cm pot plant sampler (Product Code: SOILSMPLR5001)

30cm footrest sampler (Product Code: SOILSMPLR5006)

60cm hammer head sampler (Product Code: SOILSMPLR5012)

Many other sizes and designs of soil sampler, including compost and profile samplers, are available - please ask for further details.

### Soil Temperature (Product Code: SOTT) - 32.5mm long, 12mm diameter, with protective sleeve

### Compost Temperature Packages

**Portable Measurement Package:** MiniTemp hand-held temperature monitor and stainless steel temperature sensor with T-handle grip (Product Code: with 600mm sensor CQ/MTM/PS600; with 2m sensor CQ/MTM/PS2) Max, Min, Auto-off,

**Static Measurement Packages:** MiniTemp Blue Waterproof temperature monitor and data logger with iOS/Android App and 2m stainless steel compost temperature sensor with T-handle grip (Product Code: CQ/MTM10BLUE/CP)

2m stainless steel compost sensor with Barn Owl Wireless waterproof transmitter (Product Code: BOW/ST/2/COMPOST)

## Martin Lishman Ltd is the sole UK distributor of Palintest soil testing products for agriculture

Palintest is a registered trademark of Palintest Ltd. Bluetooth is a registered trade mark of the Bluetooth Special Interest Group. MiniTemp and MiniTemp Blue are trade marks of Martin Lishman Ltd. Martin Lishman Ltd reserves the right to alter product specifications at any time without notice.

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### Specifications:

#### Soil Test Reagents:

Tablet format, stable for up to 10 years, in 50-test packs. Spare packs available individually for each test.

#### Test Ranges:

Soil pH	0 - 14
Lime Requirement (CaCO <sub>3</sub> )	0 - 34 tonne/ha
Conductivity	0 - 19.9 mS/cm
Salinity	0 - 1%
Nitrate Nitrogen (N)	0 - 25 mg/L N
Phosphate Phosphorus (P)	0 - 150 mg/L P
Potassium (K)	0 - 450 mg/L K
Magnesium (Mg)	0 - 500 mg/L Mg
Calcium (Ca)	0 - 2500 mg/L Ca
Aluminium (Al)	0 - 50 mg/L Al
Ammonia (NH <sub>3</sub> )	0 - 75 mg/L N
Copper (Cu)	0 - 25 mg/L Cu
Iron (Fe)	0 - 25 mg/L Fe
Manganese (Mn)	0 - 25 mg/L Mn
Sulphur (S)	0 - 300 mg/L S

#### Soiltest 10 Photometer:

Dual light source, 450-650nm wavelengths, backlight LCD screen, Bluetooth and USB download to iOS or Android devices, 500 data point memory, multi-language screen prompts (En, Fr, Sp, De, It, Tu, Cn), battery (3 x AA) or mains power, IP67, 15 x 25 x 7cm, 0.975 kg, accuracy +/- 1% T

**Weights:** SK100 0.6kg; SK200 2.6kg; SK300 5kg; SKW400 9.5kg; SKW500 10.5kg

**Dimensions:** SK100 23 x 28 x 7cm; SK200 34 x 23 x 16cm; SK300 34 x 23 x 16cm (bag), 34 x 46 x 14cm (case); SKW400 & SKW500 56 x 43 x 21cm

**Replacement components:** All hardware accessories and reagents from each kit are available as replacements. The reagents required are shown in the table on the left.

### Specifications:

**Photometer: 7100** - as for Soiltest 10 above, with programmed water quality tests; **7500** - as for 7100, plus Bluetooth connectivity. **Test packs:** a wide range of tablet reagents are available in packs for 50 to 250 tests - please enquire for details.

#### Sewage Kit Test Ranges:

Permanganate Value: 0-30+, pH: 4-10, Turbidity & TSS: 0-500 JTU, Temperature: -10 to +50°C, BOD, COD, TOC: 0-45 mg/l

### Specifications:

**Range:** 0 - 400 psi; **Weight:** 2.15kg

**Dimensions:** 920 x 290 x 60mm (970 x 330 x 70mm packed)

**Probe:** 12mm diameter; Usable length 750mm

Specifications:	Pot Plant	Footrest	Hammer head
Length (cm)	35	81	81
Sample depth (cm)	20	30	60
Outer diameter (mm)	16	20	20
Inner diameter (mm)	14	14	13
Weight (Kg)	0.15	1.5	2.4

### Specifications:

**Soil Thermometer:** Range: 0 - 80°C

**MiniTemp:** Accuracy: +/- 0.4°C over range -10°C to 70°C; range with sensor: -40°C - 125°C; Power: 3 x AAA battery

**MiniTemp Blue:** Accuracy +/- 0.5°C; range -25 to 75°C; Power: ½ AA battery, life c.6 months; logging interval 1s - 24h; Bluetooth range up to 50m

**Barn Owl Wireless compost sensor:** requires other components in a wireless monitoring system - please ask for details.