

NPK Nutrient Testing



The Nitrogen Phosphorus and Potassium (NPK) Meter for EDT directION offers an instant and accurate way to measure these vital parameters in aqueous samples. For soft fruit growers this means that the Drip and Drain samples can be tested daily without the need for sending samples back to the Laboratory.

For vertical farmers the Prepared Nutrient Feed can be checked accurately along with the output prior to use, recycling or disposal.

It is also possible to measure Soil samples with some sample preparation. This adds time to the test and it is important not to place the probes directly in the soil.

The Development of the NPK Meter

The NPK Meter was developed specifically for the soft fruit industry in conjunction with the National Institute of Agricultural Botany (NIAB) and Innovate UK.

This project had the aim to drastically reduce both water and Nitrogen use during the soft fruit growing season. To reduce Nitrate you will need to be able to measure it quickly and accurately and make appropriate decisions in real time. You cannot wait 5-10 days for a lab result!!

Over three years EDT directION developed a new and novel Phosphate ISE test and maintenance free Reference Electrodes. When used in conjunction with our solid state miniature Nitrate and potassium ISE's it was possible to produce a robust 30mm Sonde containing replaceable solid state sensors. The dedicated NPK Meter was then trialled with NIAB and commercial growers and modified in accordance with their specific requirements.

The NPK meter has many features ensuring that the measurement is simple and robust with on-screen instructions and clear displays of results. The probes are maintenance free and replaceable and the accessory kit allows for multiple sample measurements in quick time.

The meter is portable and allows for the quick on-site testing at any point in the irrigation or drainage system.

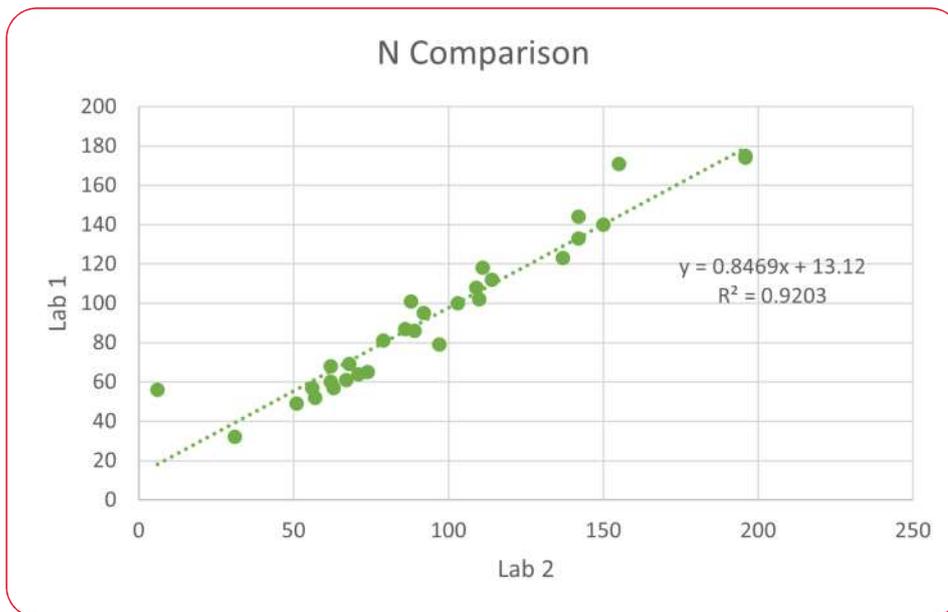


Laboratory Data:

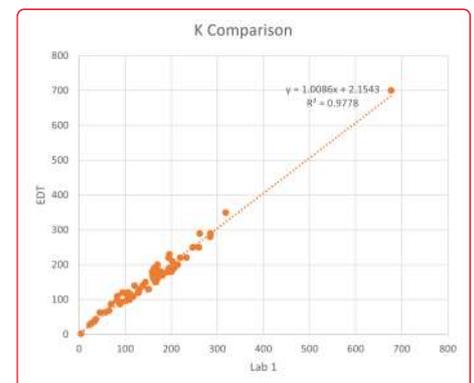
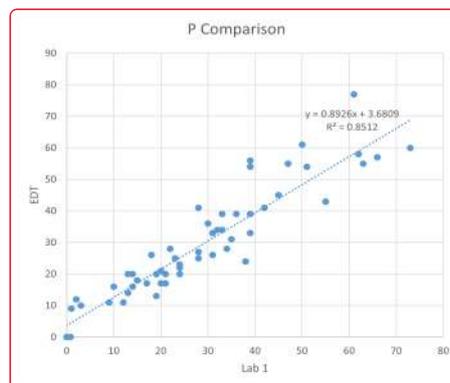
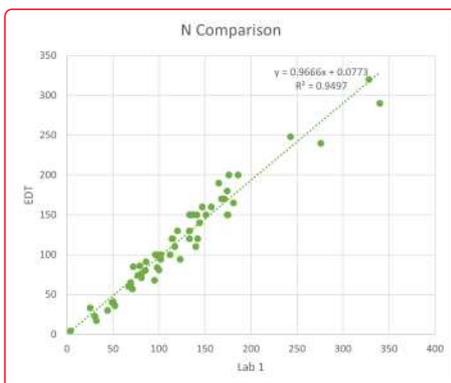
It is important for the growers to have confidence in the results provided. Over the course of two growing seasons nutrient feed (Drip) and run off (Drain) samples were tested on site using the NPK Meter and the same samples sent to three different UK Laboratory test houses.

A summary of the comparative data is given below. The main conclusions are as follows:

1. Laboratory to Laboratory comparisons show that the average variance between the Lab houses themselves is around 9ppm for N. K values around 4ppm and P values around 2ppm



2. NPK Meter to Laboratory comparison shows average variance in N to be around 12ppm, K to be around 9ppm and P around 4ppm.



3. To achieve these results it is important to calibrate the NPK meter and ensure probes are conditioned on a regular basis.

The NPK Meter Kit and Accessories



The Kit contains everything you need for running tests on site. The Kit comprises the following:

- ***NPK Meter***
- ***Multiparameter Sonde With Replaceable N, P, K and Reference Electrodes***
- ***MultiCal 1 and MultiCal 2 Calibration Solutions (500ml)***
- ***Phosphate Reagents A and B (100ml)***
- ***Measuring Cylinder (50ml)***
- ***Syringes (5ml) for Reagent A and Reagent B***
- ***Sample Beaker (100ml)***
- ***Stirrer***
- ***Portable Robust Carry Case***

The NPK meter is portable so can be used to carry out immediate spot-tests on site. If you just need to measure N or N and K it is possible to miss the Phosphate test which means that there is no need for any additional reagent additions.

If however you are collecting multiple samples and measuring them in batches we strongly recommend using the Accessory sample Rack with a set of 100ml beakers.

This speeds up the test and allows the probe to be easily calibrated and then rinsed between samples which can be organised in convenient rows.

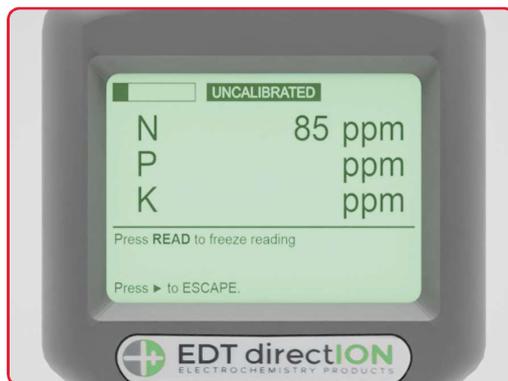
Operating the NPK Meter

The NPK Meter is simple to use and is designed to be used by both laboratory and non-skilled personnel.

The user is guided through each step with simple on-screen instructions. The results for all three parameters are displayed on the same screen and can be stored in the internal memory and exported to Excel.

Some Features of the NPK Meter Kit:

- Fast test for Nitrogen, Potassium and Phosphorus in 50ml of sample.
- Results displayed in ppm units on one screen in minutes.
- One probe houses all 4 replaceable sensors (N,P,K & Ref)
- Low cost per test. Saves hundreds of £ per year on Lab tests.
- Data storage via Micro USB. Download to Excel.
- One or two point Calibration.
- Auto End-point for standards and samples.
- Diagnostics for sensor performance.
- Ideal for Field and Lab work - Simple to use.
- Rugged solid state sensors - Maintenance free.
- Made in the UK.



For further details scan the QR codes below for Training Videos, Manuals and Support articles for NPK testing from EDT directION Limited.



NPK Calibration Video



NPK Meter Kit



EDT TV