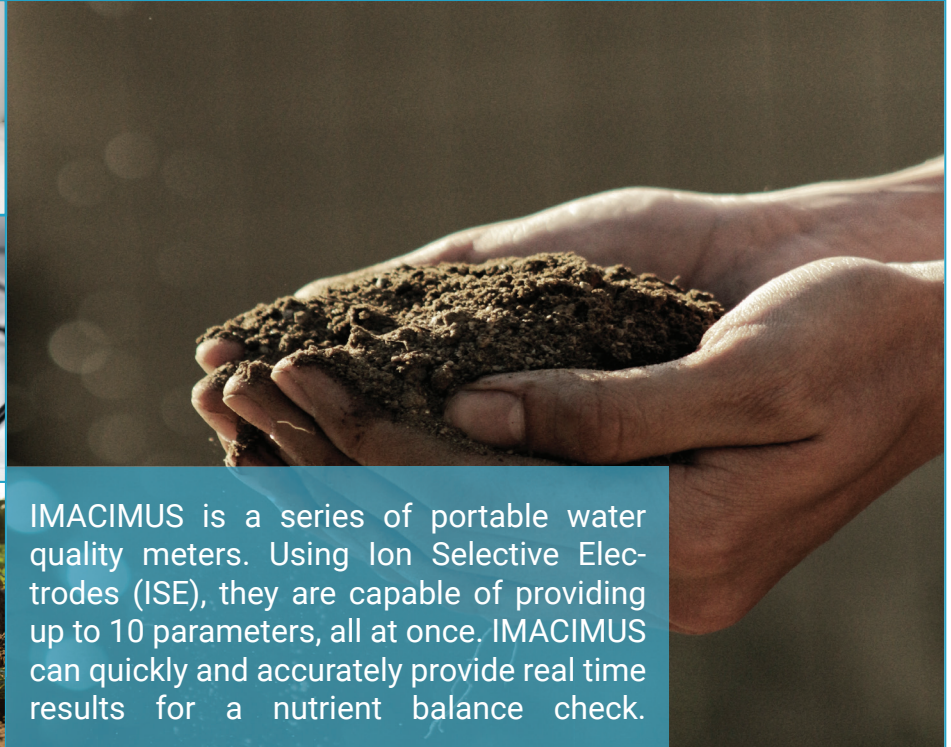


## Measurement of Nutrients in Soil



IMACIMUS is a series of portable water quality meters. Using Ion Selective Electrodes (ISE), they are capable of providing up to 10 parameters, all at once. IMACIMUS can quickly and accurately provide real time results for a nutrient balance check.

## Introduction

Typically, Atomic Absorption (AA) or Inductivity Coupled Plasma-Optical Emission Spectrometry (ICP-OES) is used to measure ions in soil. These are the methods performed in laboratories.

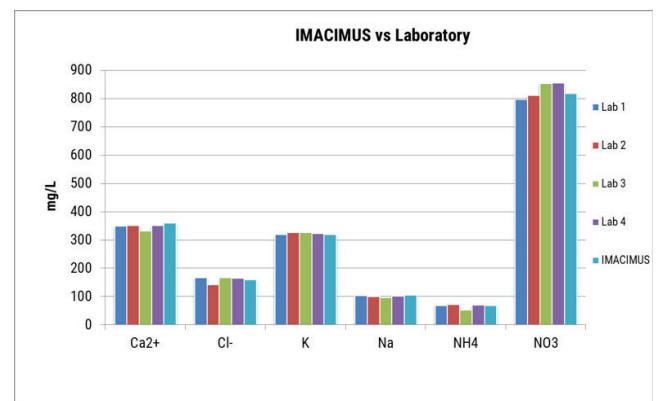
A simpler method for a rapid measurement of ions in soil uses the IMACIMUS Multi-Ion Meter. The following procedure explains how you can measure nutrients with good correlation to analytical lab tests.

## Method

1. Select a representative sample of soil, homogenize and dry it. Sample should not have moisture.
2. Weigh an exact quantity of the sample. E.g. 10g.
3. Take a known volume of deionized water with the help of volumetric material. E.g. 250 ml. (0.25 liters).
4. Mix soil sample with deionized water and shake vigorously.
5. Decant the liquid resulting from the extraction. (Separation of sample and soil).
6. Analyze sample with IMACIMUS.
7. The resulting measurement of mg/l corresponds to the concentration of the prepared extract. To relate the concentration obtained with the concentration of ions in the soil, the relationship between the weight and the volume of solution must be applied.
8. Multiply the value obtained on the screen by 0.25 and divide by 10, resulting in milligrams of nutrients divided by gram of soil. Repeat the calculation for each ion/nutrient available.

## Results & Benefits

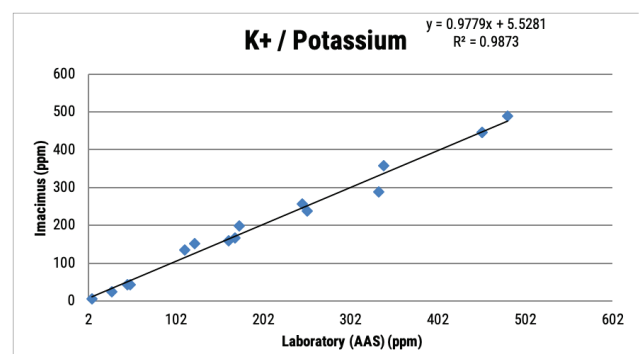
Comparative report from IMACIMUS technique to other related laboratory techniques when analyzing different agro samples. Nutritive solution. Data of n=2, same sample sent to 4 independent laboratories and test against IMACIMUS.



Results show that different analysis from the same sample can have variation within different laboratories. IMACIMUS analysis can be compared to other laboratory reports for overall parameters.

### Potassium analysis

The IMACIMUS equipment is validated against a third-laboratory. Two different techniques (Ion Selective Electrode – IMACIMUS), and Atomic Absorption are compared. N=15. The data shows the correlation obtained between two techniques.



# Portable Multi ION Meter Imacimus<sup>®</sup>

**1** ONLY  
DEVICE

**10** SIMULTANEOUS  
PARAMETERS

**60** SECOND  
RESULTS

$\text{Ca}^{2+}$

$\text{NH}_4^+$

EC

$\text{Cl}^-$

$\text{Mg}^{2+}$

$\text{K}^+$

pH

Hardness

$\text{Na}^+$

$\text{NO}_3^-$

IMACIMUS brings Carbon  
Nanotube patented technology.



NT Sensors' Ion Selective Electrodes with carbon nanotubes allows for new possibilities of sampling in situ, with laboratory correlation.

Featuring seven replaceable electrodes, you can replace individually in just two easy steps.

Calibrate in only 5 minutes -  
measure as many samples  
necessary.

Using our free software, calibrate with just a few clicks. Our standard solutions reassures you of your measurement accuracy. One point re-calibration option available for best accuracy.



The IMACIMUS portable case,  
brings the lab, to your hands.

The portable carry case, has everything you need to get started. Includes additional space for spare electrodes, so nothing can stop you on the field.

## Imacimus SERIES

Imacimus 3  
2 ions & pH Meter

Imacimus 5  
4 ions & pH Meter

Imacimus 10  
7 ions, pH, EC\* & WH Meter

**1300 768 887**  
**onetemp.com.au**

**OneTemp<sup>®</sup>** pty Ltd  
measure | control | record