

GJØDSLING I JORDBÆR – EFFEKT PÅ AVLING OG KVALITET

Tomasz Woznicki

STRATEGISK SATSING I NIBIO: TEKNOBÆR



TEKNOBÆR PROSJEKT

STRAWBERRIES IN TUNNEL:
SONATA, KORONA



DUALEX SPAD + HORIBA LAQUA TWIN

Dualux[®] 4

SCIENTIFIC

FLAVONOLS & CHLOROPHYLL-METER



- ⦿ REAL-TIME
- ⦿ GEOLOCATED
- ⦿ NON-DESTRUCTIVE
- ⦿ ANY PLANTS & LEAVES
- ⦿ MEASUREMENTS REGISTERED & CLASSIFIED

Force A
SEE TO ACT

HORIBA's flat sensor enables easy measurement with only a few drops of sample

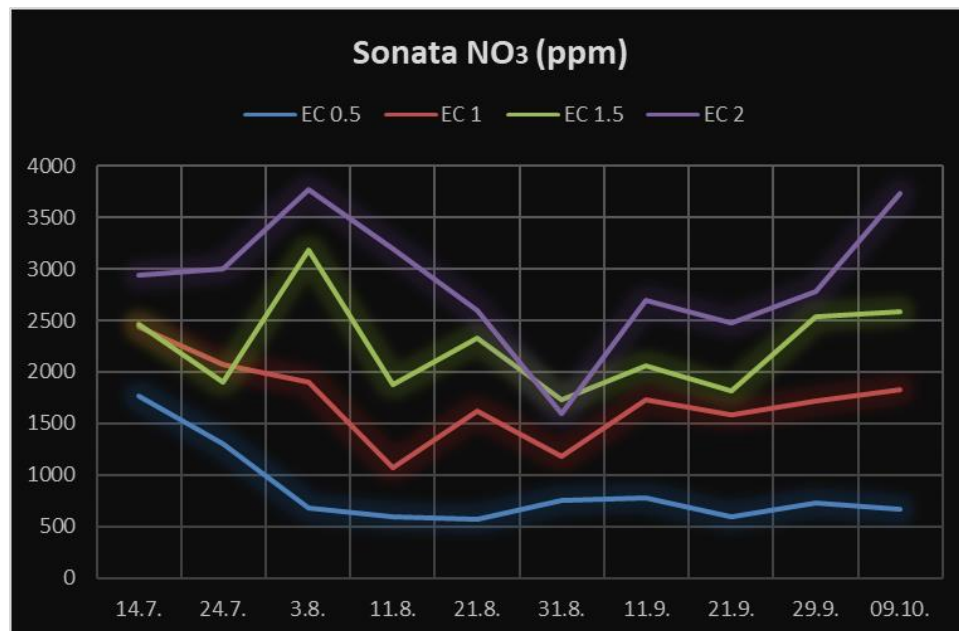


The B-340 series is a compact and robust nitrate ion meter using HORIBA's revolutionary flat sensor technology. This technology allows very small sample sizes to be measured (minimum sample size 0.3mL). The instrument is simple to calibrate and easy to use. Combine this with its compact pocket size and you have an instrument that can be used for various applications in the lab or out in the field.

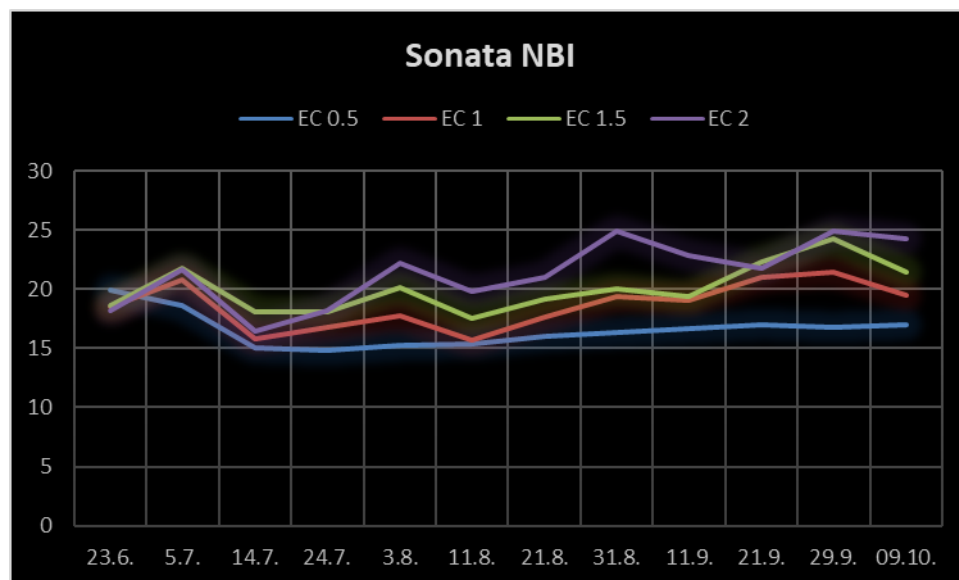
- Waterproof*
- Automatic calibration function (selection of 1-point, 2-point calibration)
- Wide measuring range
- Flat sensor enables measurements of small sample volumes (0.3mL)
- Special setting modes
(temperature measurement, voltage measurement, compensation function etc)
- Selectable analysis of NO₃⁻ or NO₂⁻-N
- Selectable units (ppm, mg/L, kg/100g)

* The instrument may not be used when fully submerged underwater

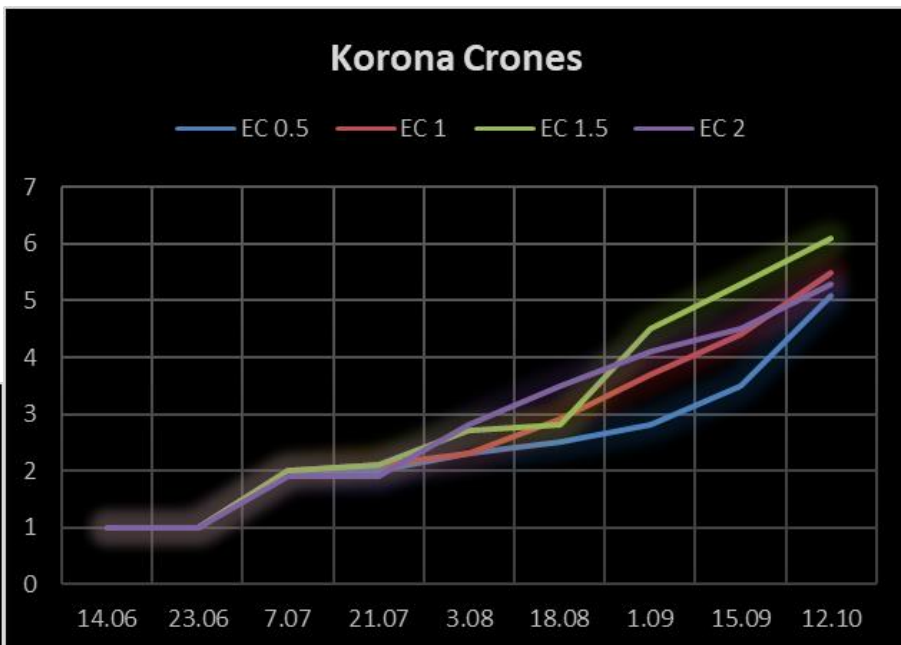
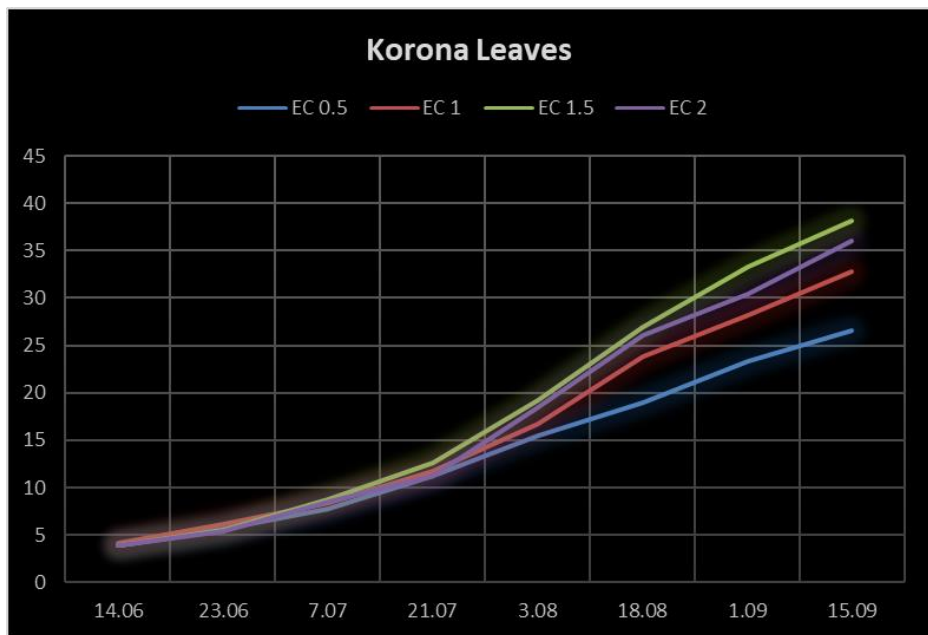
LAQUA TWIN NITRATE IN PETIOLES (STILK) - SONATA



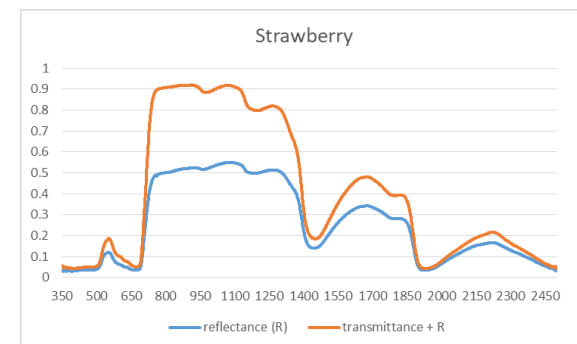
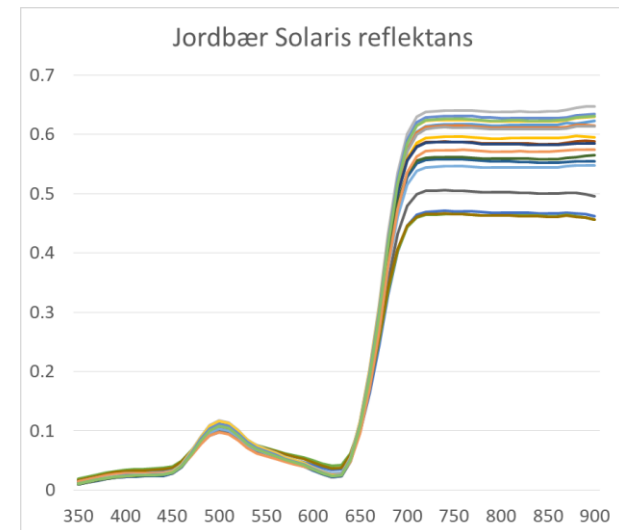
SPAD CHLOROPHYLL/FLAVONOLS RATIO (NBI - Nitrogen Balance Index) - SONATA



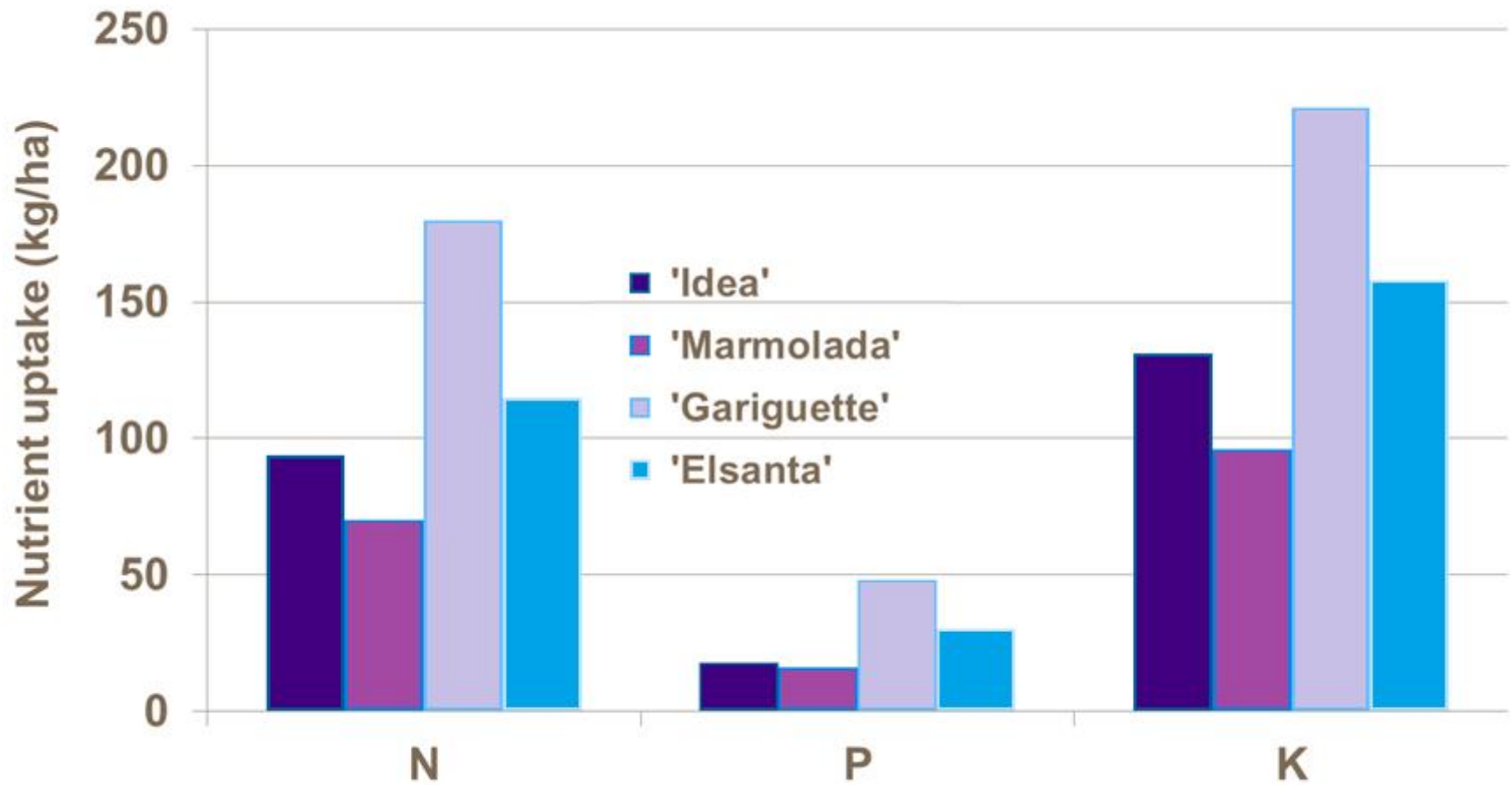
KORONA – BLAD OG KRONER



SENSORER - LEAF MEASUREMENTS IN STRAWBERRIES – LIGHT REFLECTANCE AND TRANSMITTANCE

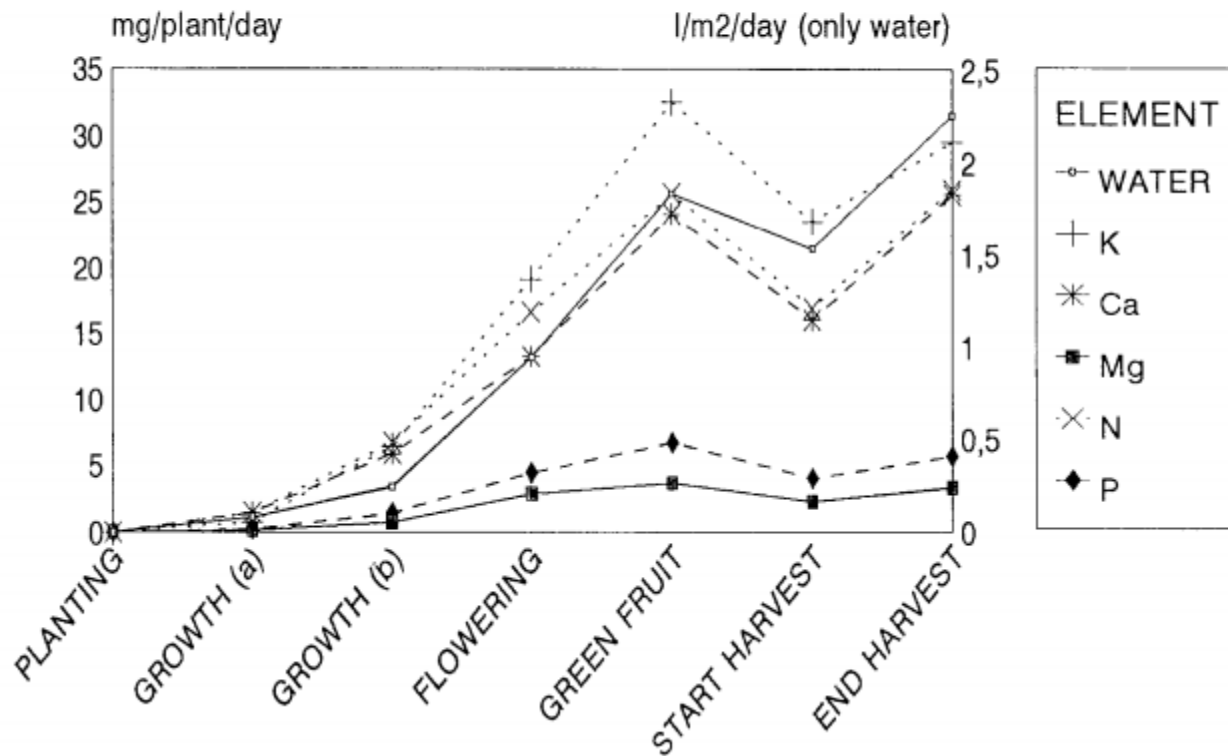


NPK uptake



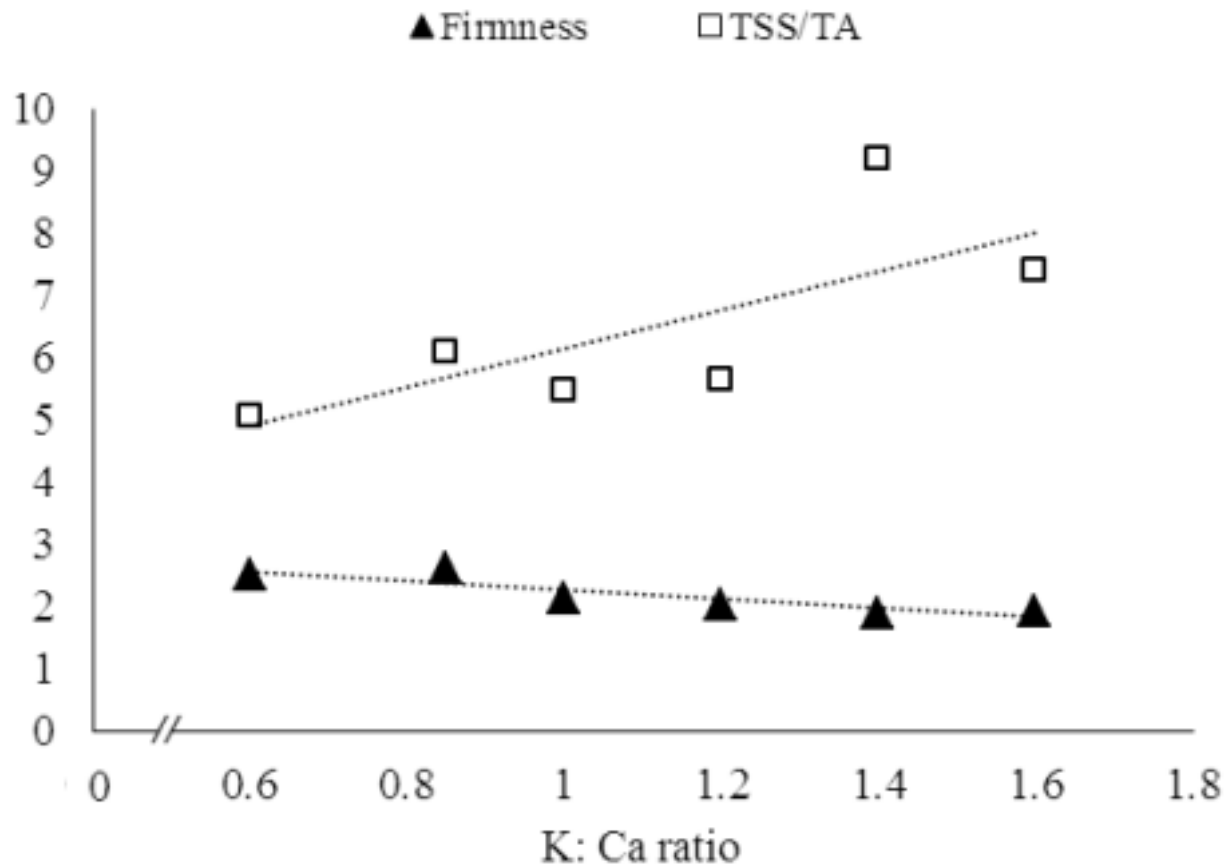
TAGLIAVINI – 2004

Elsanta UPTAKE



Lieten and Misotten 1993

K:Ca ratio (Selva)



Haghshenas et al. 2017



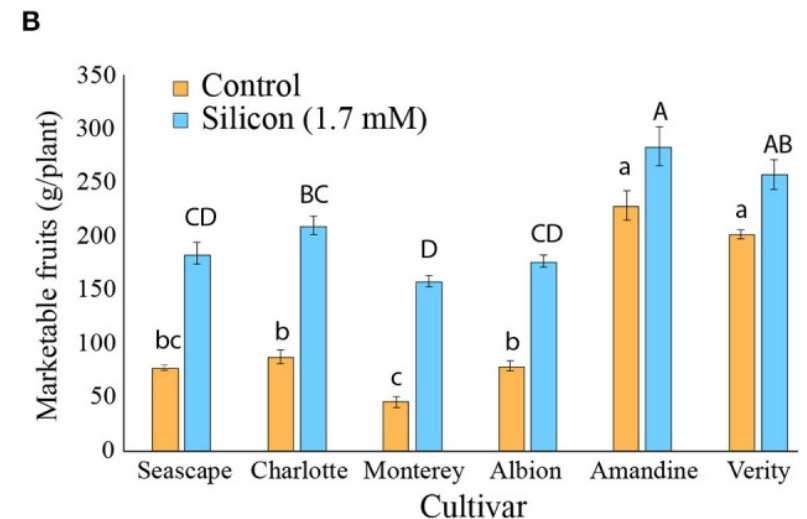
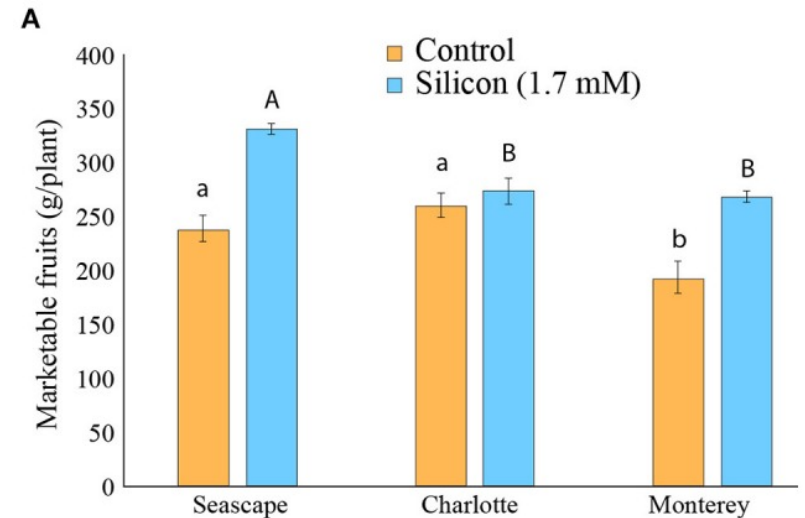
Precise fertigation



Multi ion sensor

Testing different fertigation strategies, timing, amount and ratio between elements.
Substrates.

Quality and yield improvement strawberry and raspberry – (Si) silicon?



Ouellette et al. 2017

Takk!

