



Performance of wood fiber as a substrate in hydroponic strawberry production under different fertigation strategies

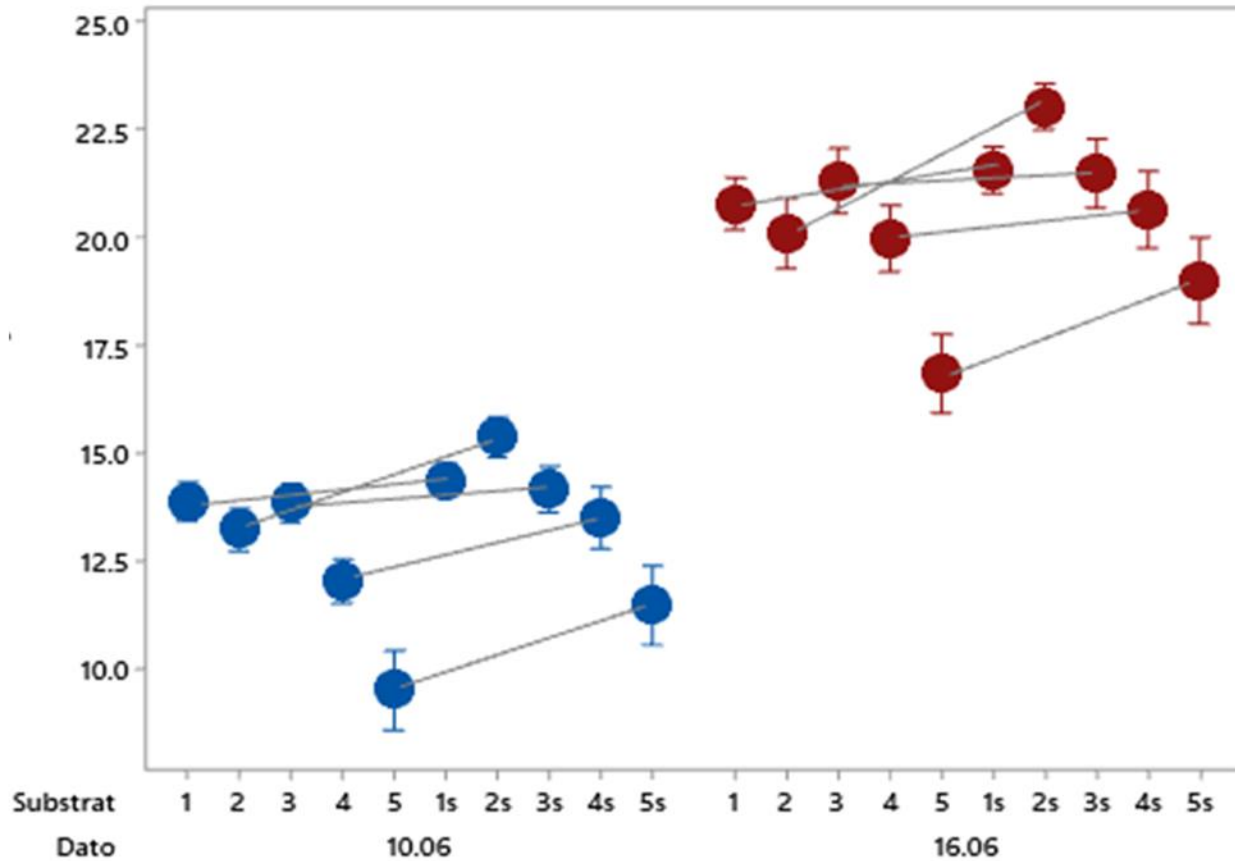
Tunnel Research Facility at NIBIO



'Malling Centenary' ('Tray').

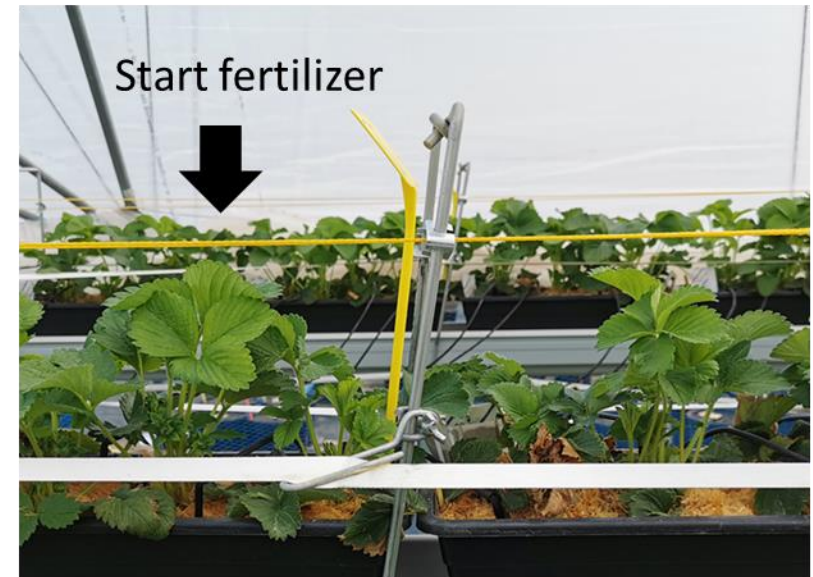
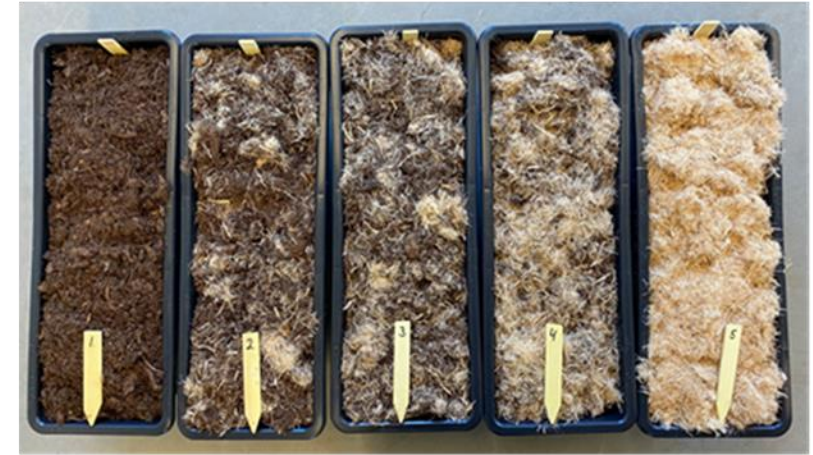
Start: 19th of May.

EC 0.8 until flowering, EC 1.2 until ripening, later EC 1.7

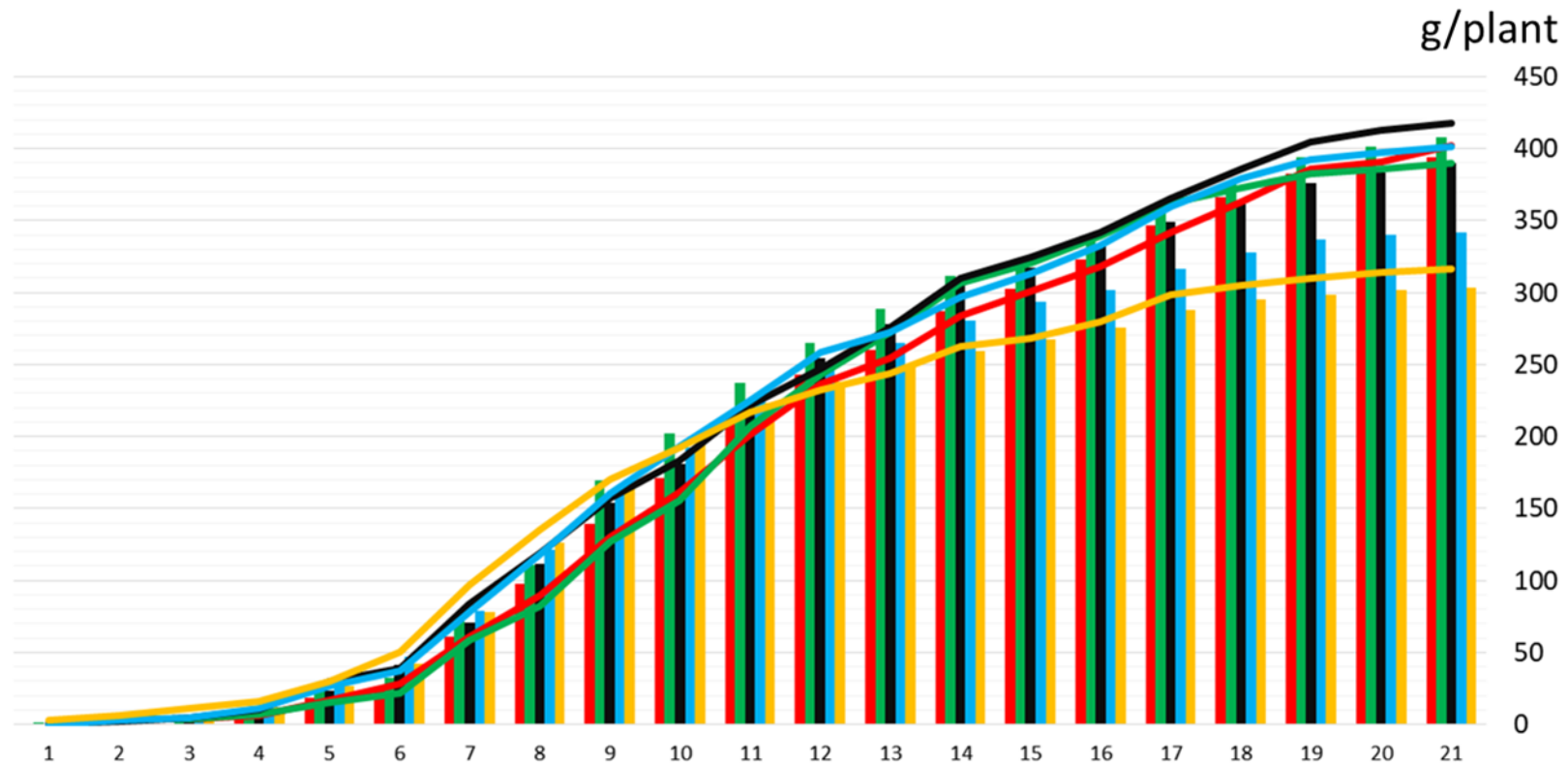
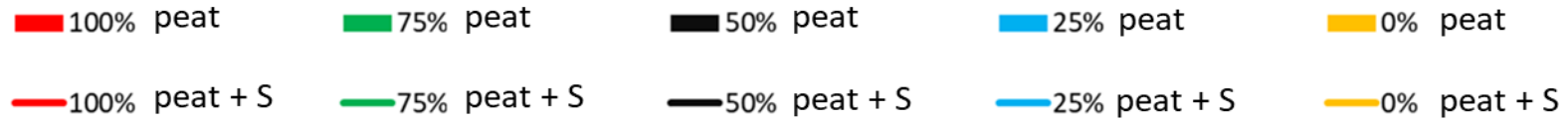


1: 100% peat, **2:** 75% peat, **3:** 50% peat, **4:** 25% peat, **5:** 0% peat
S - start fertilizer (struvite - $\text{NH}_4\text{MgPO}_4 \cdot 6\text{H}_2\text{O}$ + ammonium nitrate and sulphur)

Peat/wood fiber blends



Accumulative yield of berries >28mm (03.07-24.08)



Take Home Messages

- Better plant establishment in substrates with start fertilizer
- Substrate with up to 50 % wood fiber is a safe option under standard production strategy
- Pure wood fiber require higher EC and more frequent fertigation?

'Favori' (tray), substrates and watering

Substrates:

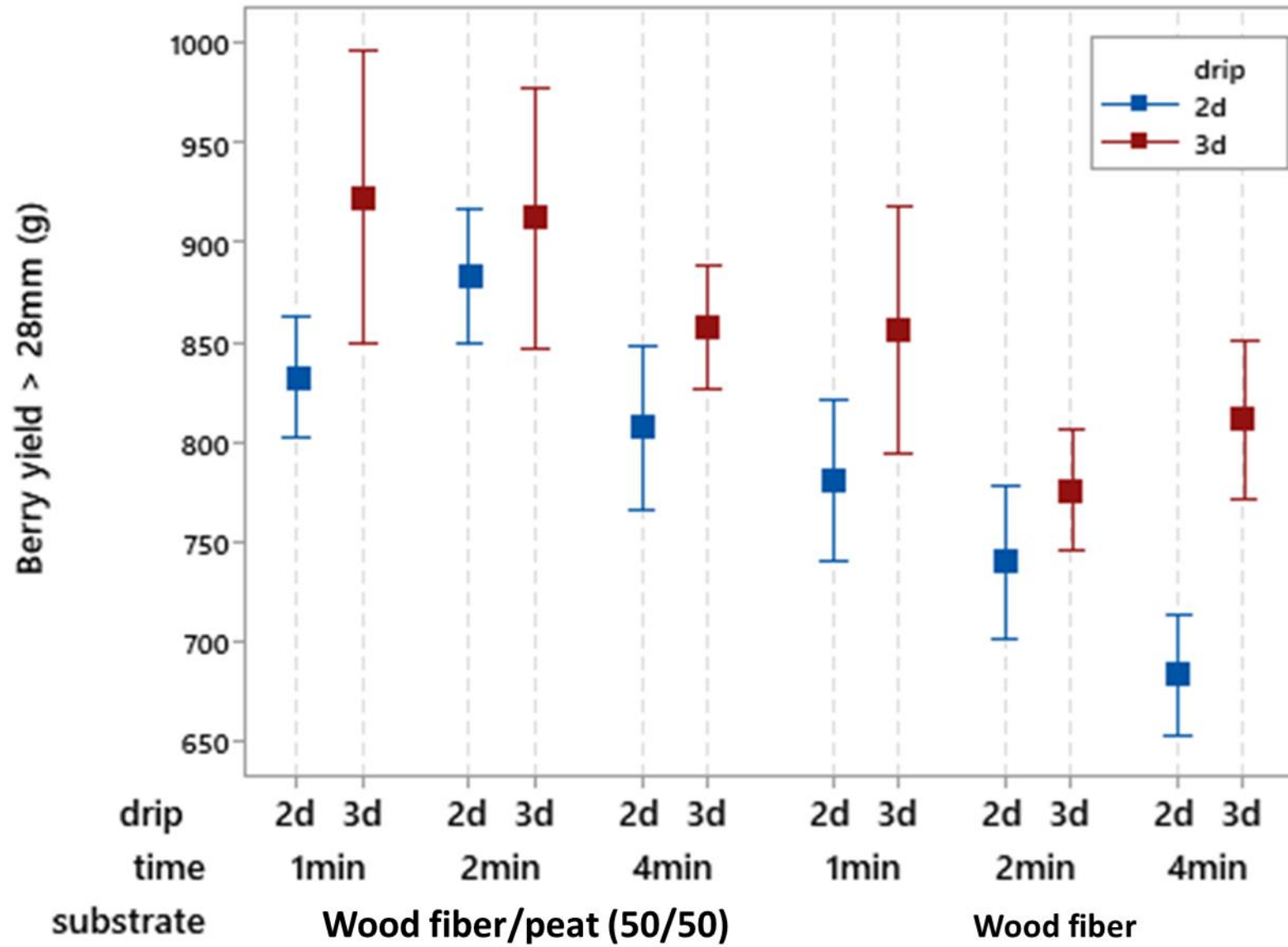
- 100% wood fiber (Fibergrow®, Norway spruce, disc-refined)
- Wood fiber/peat (50%/50%), NORGRO

Dripp:

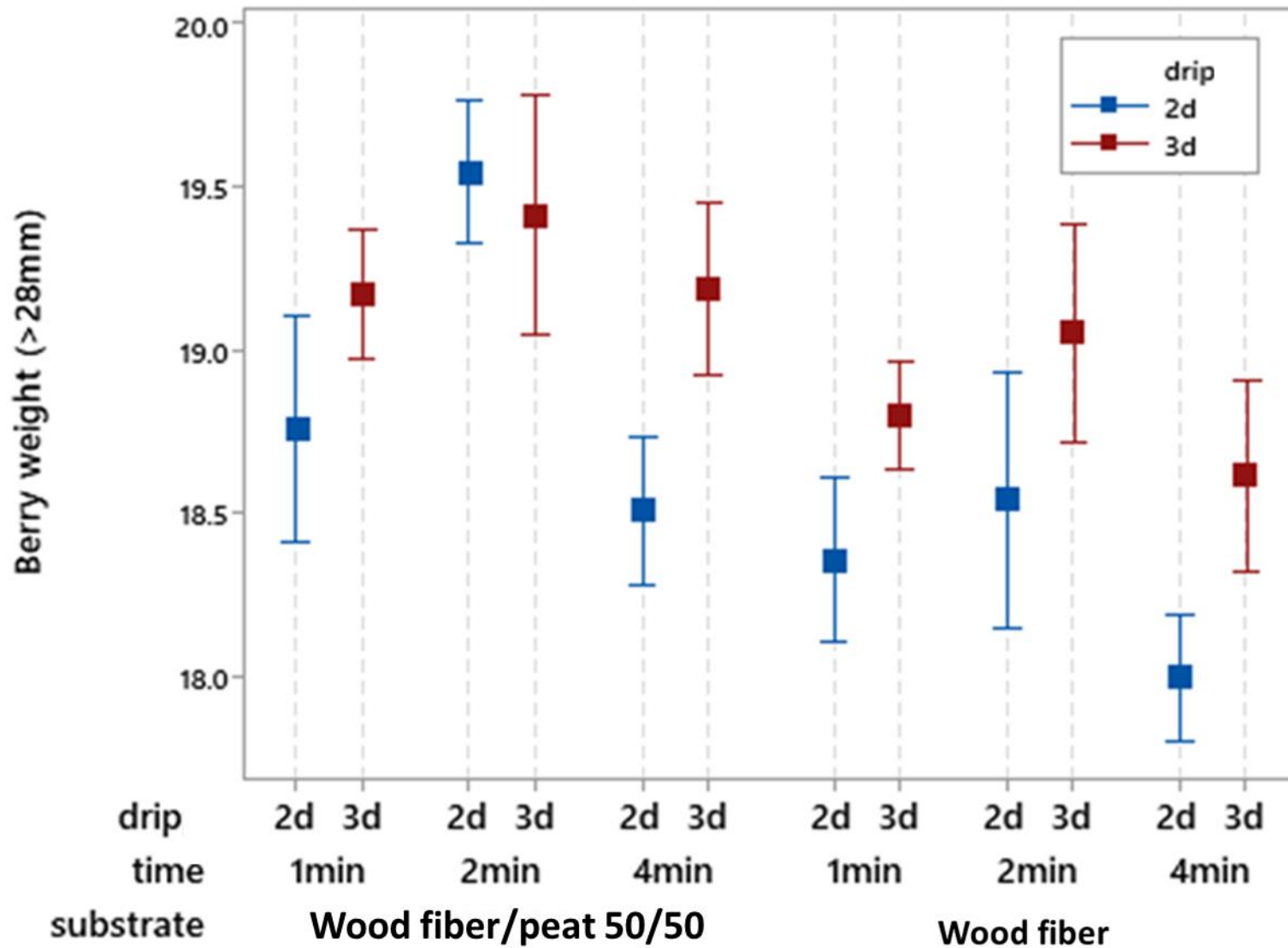
2 or 3 per pot (0.5m)

Fertigation: EC 1.6

	Time (example)									
1 min	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00
2 min	11:00	12:00	13:00	14:00	15:00	16:00				
4 min	11:00		13:00		15:00					



Yield (g/plant)
(berries>28mm)



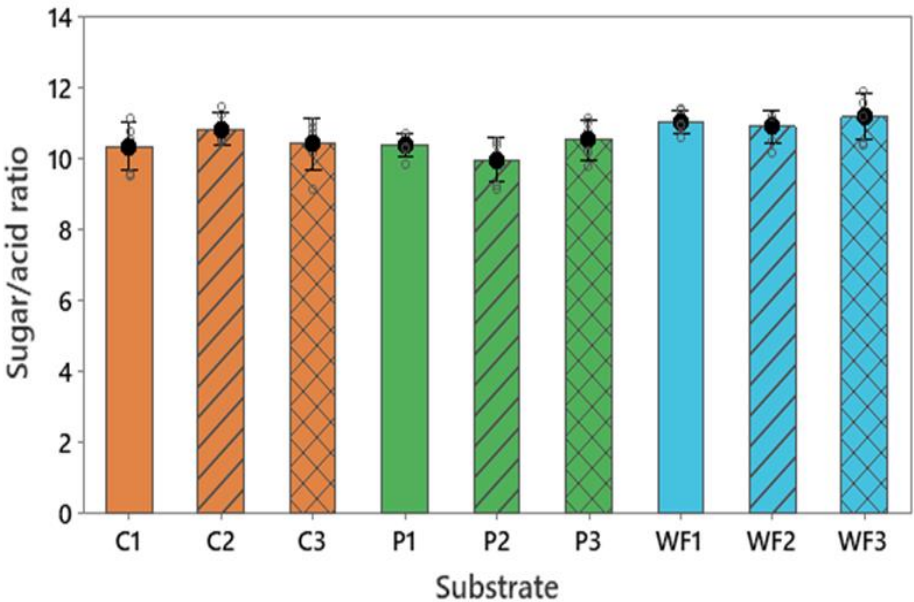
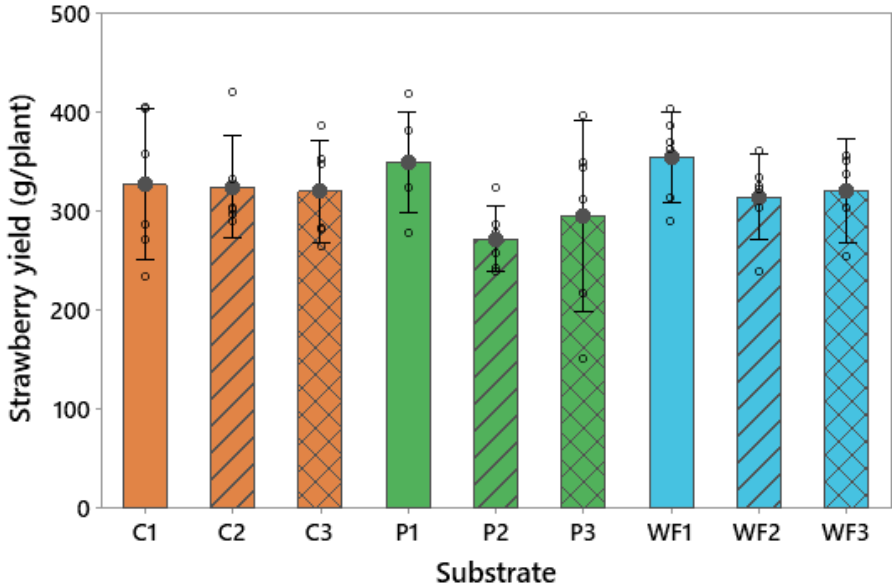
Mean berry weight (g),
(berries>28mm)

Take Home Messages

- Substrate performance is affected by fertigation strategy and it is possible to adapt strategy for pure wood fiber
- Higher number of drips (one per plant) and more frequent fertigation is required for strawberry production in pure wood fiber

Reuse of substrates

'Malling Centenary' (tray)



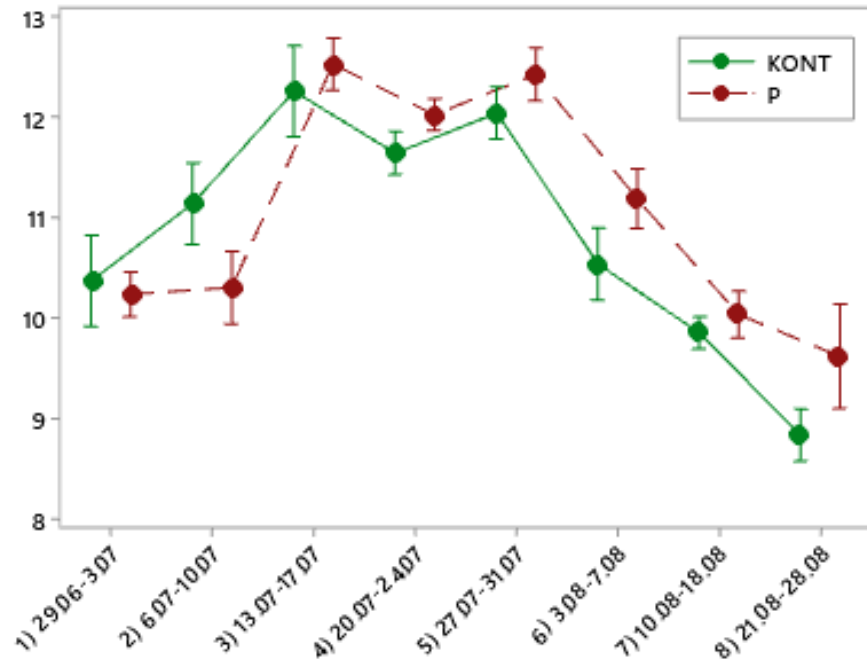
C - coir
P - peat
WF - wood fiber

1, 2, 3 years old

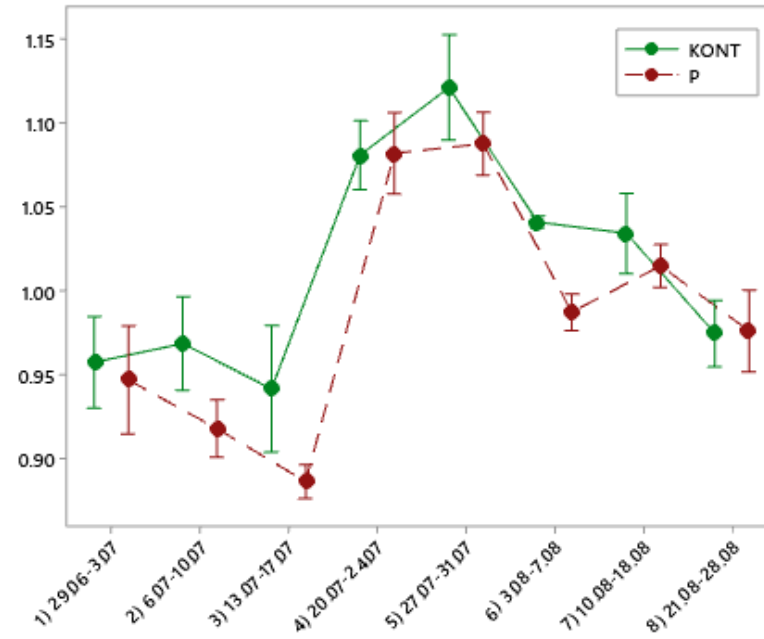
Taste of 'Malling Centenary' produced in wood fiber

Extra Monoammonium Phosphate (P) after flowering vs. CONTROL (KONT)

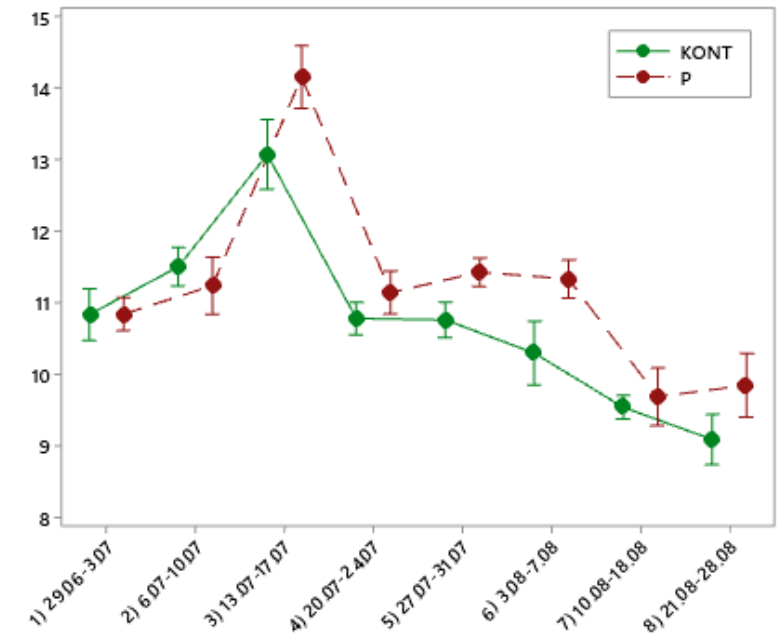
Sugar



Acidity



Sugar/Acid Ratio



Tomatoes produced
in pure wood fiber
slabs had comparable
yield as control plants
grown in stone wool

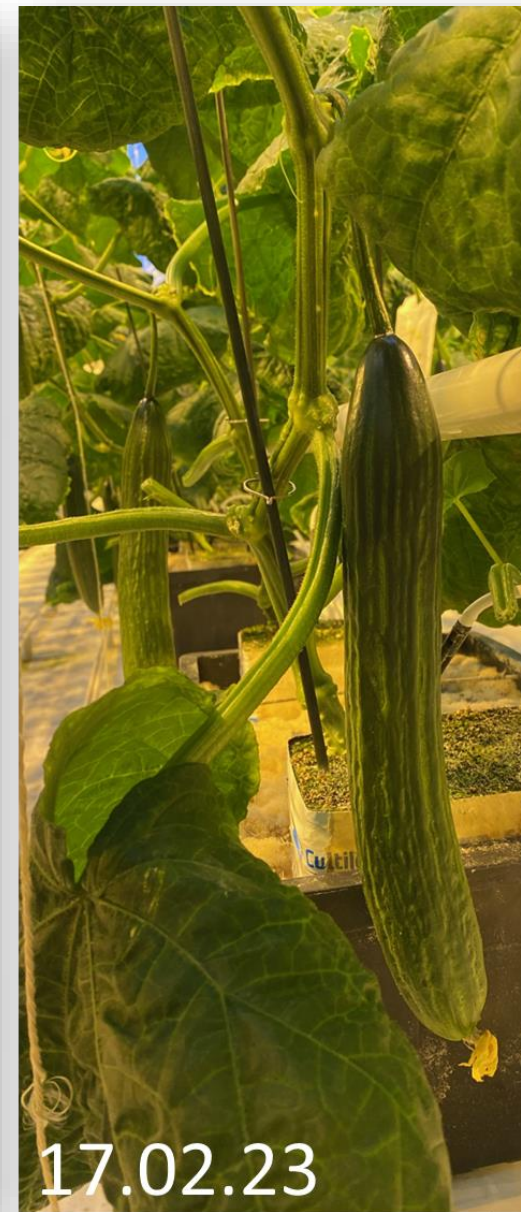


Master



Grodan GT Master





Wood fiber as an alternative to perlite in cucumber production

Peat

Wood fiber



EC 1.0

EC 2.0

EC 3.0



EC 1.0

EC 2.0

EC 3.0

Hydroponic potato production in wood fiber





Thank you!

Foto: Maximilian Pircher