



Overview: Strawberry Propagation

September 25

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We're much more than a vertical farming company

- Crop Research Centre at the James Hutton Institute opened in 2018
- Bringing together real-world experience in science, engineering, and agriculture
- Technology developer not a grower or operator



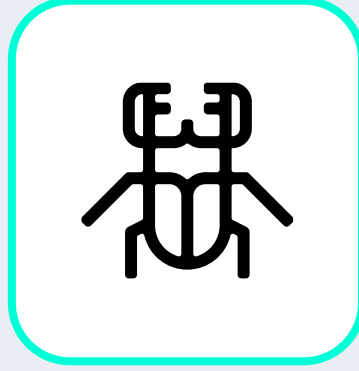


The challenges for strawberry production

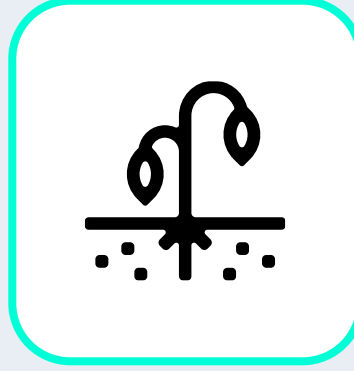
Unsustainable rising costs + overreliance on imports + increased uncertainty + losses



50% of plant sale price attributed to transport



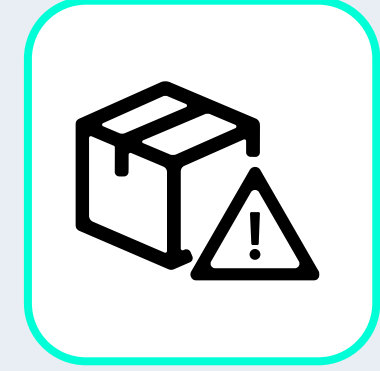
Up to 40% of plants infected with a pathogen



Poor survival rates due to disease and transportation issues



Inconsistent quality resulting in inconstant yields



Up to 30% of plants not suitable for planting

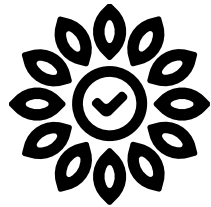


IGS Benefits

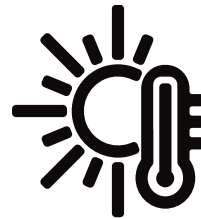
Predictable costs + uniformity + flexibility + reduced losses + year-round production



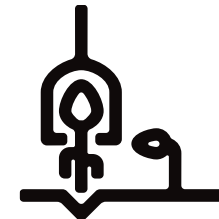
De-risk supply from European hotspots (NL & Spain)



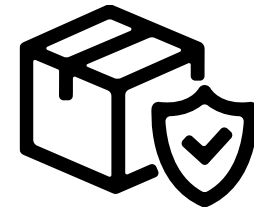
Optimal, bio-secure environment for high quality plants



Reduce knock-on labour impact via delays



Optimal space efficiency



Control supply and reduce transportation costs



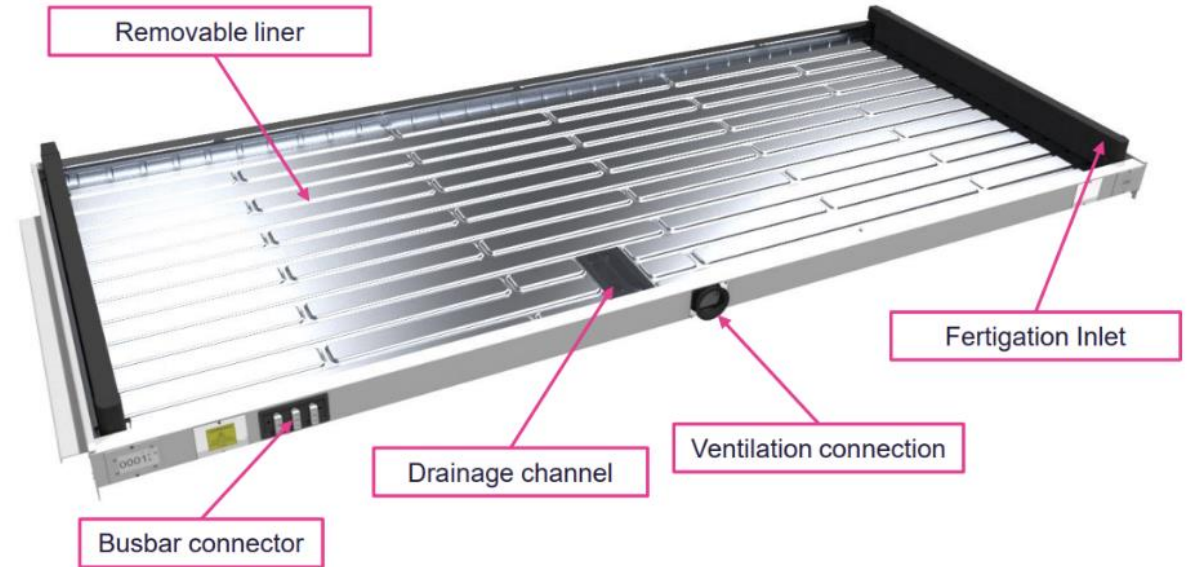


Challenges

- Gutter system does not suit vertical growing
- Gutter systems hard to automate
- Different system needed for tray plant establishment

Opportunities

- Runner and tray plant production in the same system
- Horticultural benches suit high density plant production
- Can we do high density runner production?



High Density Runner Production

- 630 mother plants per GTL in P18 prop trays
- Faster cycle
 - 7 days
 - Circa 1 well rooted runner per plant per cycle
- Multiple flushes of runners harvested (up to 8x)
- Higher throughput of the plant



Strawberry
Propagation – High
Density Format

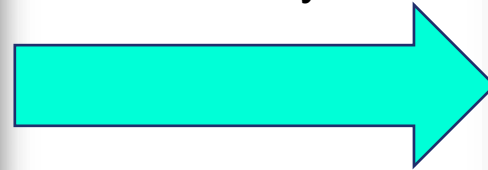


Mother plant establishment

Mother stock received



Quarantine
4 – 14 days



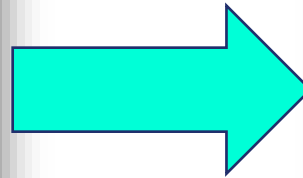
P18 Danish propagation
trays x 35 = 630 plants





Runner production

Runner production circa 30 days after establishment



For this trial aim was 1 runner per plant per week for 8 weeks





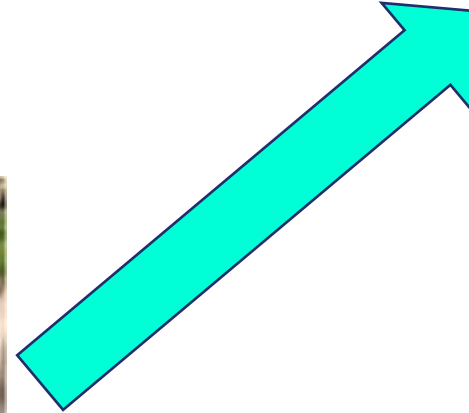
Tray Plant production



Rooting runner tips



Transplant into p40 prop trays



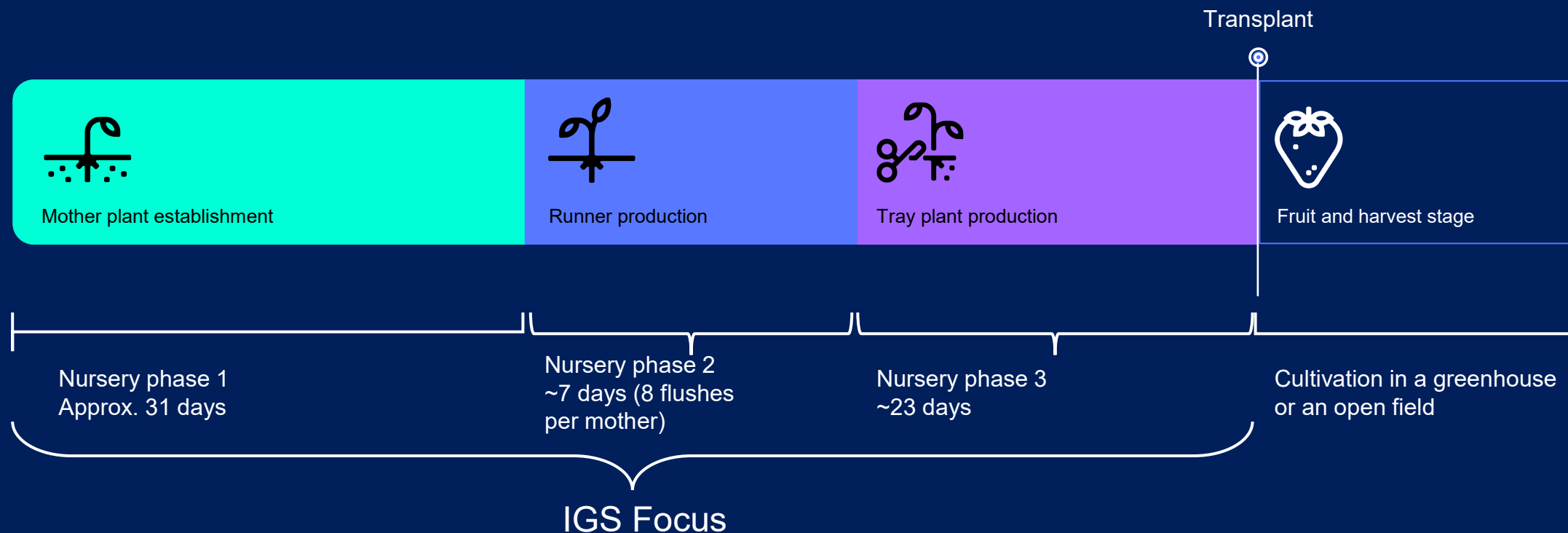
Up to 23 days





Strawberry tray plant production

What does this look like?





High density format

Results of strawberry propagation

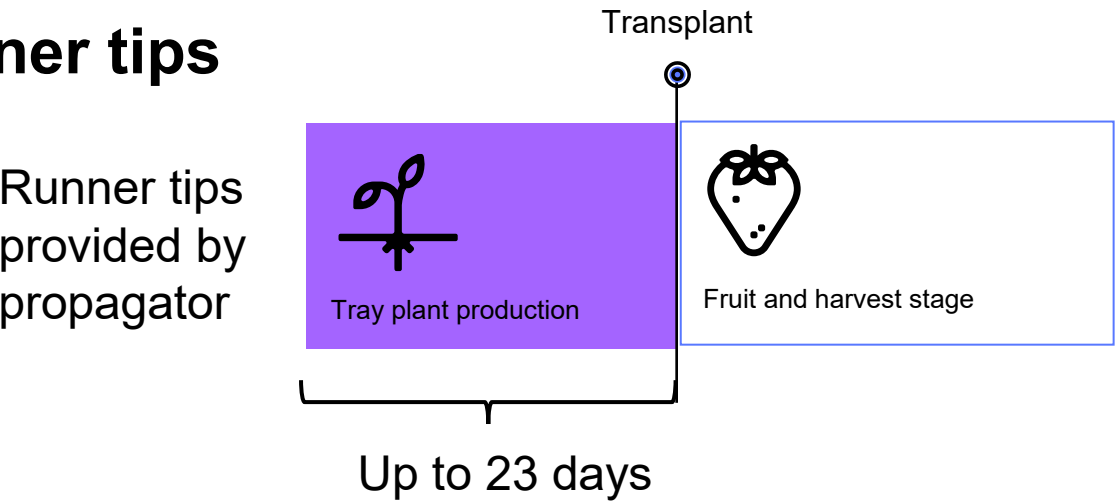
Mother plant establishment	31 days
Mother plant growth cycle	7 days (8 weeks)
Runner tips/m ² /cycle	104
Tray plant growth cycle	23 days
Tray plants/m ² /cycle	228
Cost per Kwh	€0.23
Cost of production per runner tip	€0.14
Cost of production per tray plant	€0.17



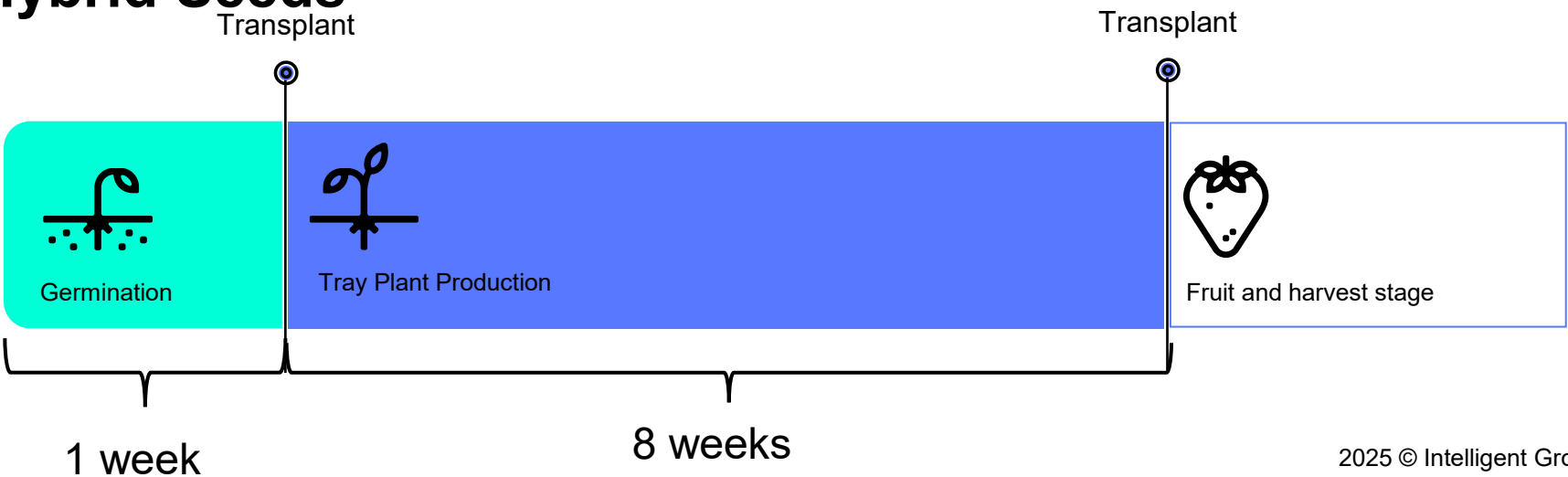


Future Alternatives

Runner tips



F1 Hybrid Seeds



Trial with us!

IGS is looking to partner with growers to trial innovative propagation techniques

