SUBSTRATES

Perfect strawberries – like from another star

1913
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Klasmann-Deilmann

Innovative substrates with GreenFibre® – for a sustainable cultivation of strawberries

The most common international method for commercial strawberry production is soilless cultivation in growing media using gutter systems, containers or substrate-filled ridges. The substrates used are mainly based on coir, peat and perlite. Research and development is currently investigating how substrates can optimise strawberry yields and at the same time comply better with sustainability criteria. With regard to environment and climate protection, the aim is to reduce water and energy consumption as well as CO_2 emissions associated with the production, processing and use of substrates.

Furthermore, the soft fruit sector would like to become more independent of certain raw materials and constituents. In recent years, shortages in the availability of raw materials from overseas, in particular coir, have highlighted the importance of reliable and local raw material sources.

The substrate innovation with GreenFibre®

With this background, Klasmann-Deilmann has developed innovative TS substrates with a high content of its own wood fibre product GreenFibre® which are particularly suitable for strawberry cultivation in gutters and containers. This new approach allowed to reduce the amount of coir, peat and perlite in those substrates significantly.

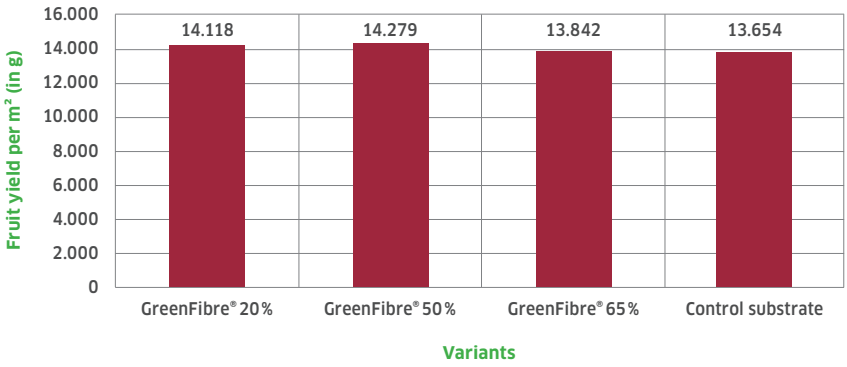
Extensive practical trials have proven an excellent suitability with an addition of up to 50 % GreenFibre® in the substrate. These blends proved to be highly efficient in terms of irrigation management, cultivation characteristics and fruit yield.

Crop results Research Station Delphy (The Netherlands), 2019–2020

Trial data:

- Cultivation in a heated greenhouse
- Variety: Elsanta, June bearing, 12 plants per linear metre
- Planting: 17 August 2019; cultivation end: 25 May 2020, crop with two harvest periods
- Harvest period autumn: Weeks 38 - 52
- Harvest period spring: Weeks 15 - 23
- Control substrate: 50% coir, 35% white peat, 15% perlite
- Trial substrates: 20%/50%/65% GreenFibre® with white peat

Total yield per substrate variant (for both harvest periods)



Elsanta in the trial with 50% GreenFibre® during harvest period

Excellent root development in the variant with 50% GreenFibre®

The variant with 50% GreenFibre® showed the highest yield for the total production of both harvest periods. The control variant, a common practise strawberry substrate, had the lowest yields.

Also with regard to the distribution of fruit classes in autumn and spring, the highest yield of fruits Class 1 was achieved in substrates with 50% and 20% GreenFibre®. In this trial, all substrates with GreenFibre® performed better than the control substrate.

In contrast to coir-based substrates, a drainage percentage of 20% is sufficient for substrates with GreenFibre®, even on warm days. This value should not be exceeded for substrates with GreenFibre®. Especially in regions with high temperatures and limited water availability, this is an additional benefit of these new substrates, as less water is needed during cultivation.

Galactically good strawberries

Our new TS substrates with GreenFibre® for strawberries

Substrate	TS 1 medium-basic 'Strawberry' + 50 % GreenFibre®	TS 4 medium 'Strawberry' with coir + 25 % GreenFibre®	TS 4 coarse 'Soft fruits' + GreenFibre®
Recipe no.	**X68**	**Y77**	**497**
Composition	GreenFibre® medium White peat (0 – 25 mm)	GreenFibre® medium Coir White sod peat (10 – 25 mm) White peat (0 – 25 mm)	GreenFibre® medium White sod peat (25 – 45 mm) White sod peat (10 – 25 mm) White peat (0 – 25 mm) White peat fibres (0 – 30 mm)
pH value (H_2O)	5.7	5.7	5.5
Fertiliser (g/l)	0.5	0.5	1.0
Added trace elements	√	√	√
Wetting agent	Hydro S	Hydro S	Hydro S
Water capacity	+ +	+ + +	+ + +
Air capacity / drainage	+ + +	+ +	+ +
Speed of water uptake	+ + +	+ + +	+ +
Structural stability	+ + +	+ + +	+ + +
Cation exchange	+ +	+ +	+ + +
Structure	medium	medium	coarse
Use for	Cultivation of single- and double-bearing strawberries in gutter systems and containers. Suitable for growing in greenhouses, poly-tunnels and open field.	Cultivation of single- and double-bearing strawberries in gutter systems and containers. Suitable for protected cultivation in green-houses and polytunnels	Protected cultivation in gutter systems, large containers and substrate filled ridges. Also ideal for culti-vation of other soft fruit species, e.g. raspberries.

At a glance: all advantages of our new TS Substrates with GreenFibre®

Crop management

- Innovation in the substrate segment for strawberries
- Ideal drainage for year-round cultivation of strawberries in gutters and containers
- 26 – 30 vol.-% air capacity (pF 1; -10 cm) in growing media with 50 % GreenFibre®
- Drainage percentage of 20 % in the crop is sufficient and saves water
- High nutrient-buffering capacity and high content of humic acids due to the peat content
- Very high structural stability also for perennial cultivation
- Improved root development
- Drier substrate surface promotes plant health
- Consistently high quality due to RHP-certified production process

Sustainability

- More sustainable strawberry cultivation due to GreenFibre®. This premium wood fibre is locally sourced from sustainably managed forestry and available all year round
- Considerably reduced emissions
- Reduced substrate weight

Independent certification is the norm at Klasmann-Deilmann

GreenFibre® is RHP certified
The wood fibre GreenFibre® is manufactured by Klasmann-Deilmann and certified according to the RHP quality mark. The RHP label guarantees long-term suitability and consistently high quality of GreenFibre® as substrate constituent for professional horticulture (www.rhp.nl).

Wood resources only from responsibly managed forests
Besides reliability, sustainability is of key importance for our growing media. The wood chips used to produce GreenFibre® are obtained solely from responsibly managed forests. Whenever possible, we prefer raw materials from local sources that meet sustainability criteria and opt for PEFC- and/or FSC-certified wood as base for our GreenFibre®.

GreenFibre® for organic production
Substrates with GreenFibre® are also ideal for organic production. GreenFibre® complies with EU Regulation (EC) No. 834/2007 and Annex I to Implementing Regulation (EC) No. 889/2008, inspected by Ecocert®.

RHP
Certified for
Horticulture

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INPUTS