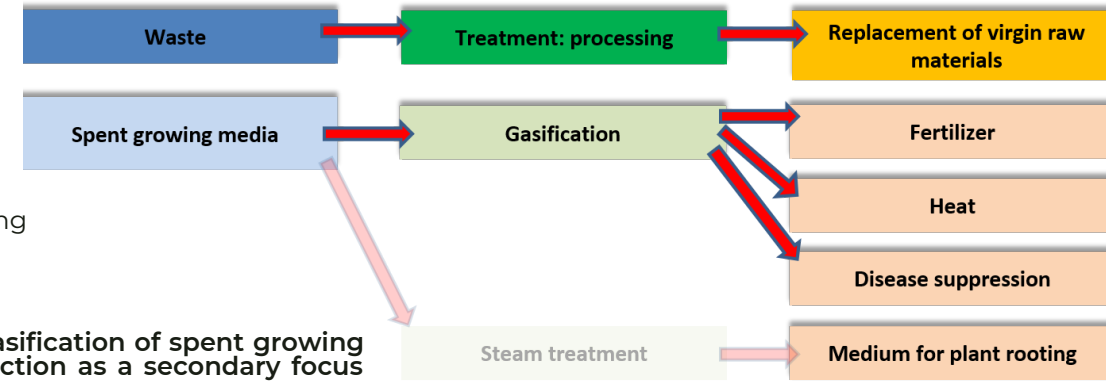
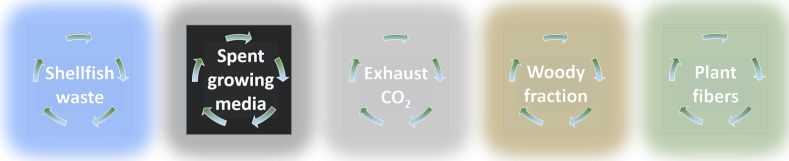


Spent growing media: direct reuse or feedstock for biochar



BASELINE SCENARIO

Spent growing media are directly used as soil improver, as a bulking agent for composting or for landfilling, often at the growers site.

NEW SOLUTION 1

Biochar can be produced (in the greenhouse) by small scale gasification of spent growing media (SGM) for recuperation of nutrients, with energy production as a secondary focus and waste processing as a possible third revenue.

Watch the [video](#), read the [scientific paper](#), try out the [decision tool](#) or check the [website](#) for more relevant information

STRENGTHS

- Organic SGM are high in organic matter
- Organic SGM are dry when stored in the greenhouse after cultivation

WEAKNESSES

- Chopping/shredding of SGM is needed before use as feedstock for biochar
- SGM require more work to be fed to the reactor
- Drying of SGM is needed
- SGM result in fluffy/dusty biochar with fine particles, this type of biochar may be problematic for aeration of the growing medium (slumping) when used in larger amounts
- Biochar from SGM is high in salt content, resulting in a higher risk of negative effects on plant growth
- Biochar from spent coir may be hydrophobic
- Biochars with high pH = issue

OPPORTUNITIES

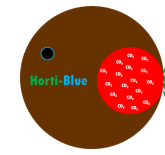
- Means to recycle/reuse nutrients in SGM
- Use of greenhouse related biomass for energy generation in the greenhouse
- Biochar as fertilizer may be more relevant for cropping systems without fertigation or fertilizer addition during the cultivation

THREATS

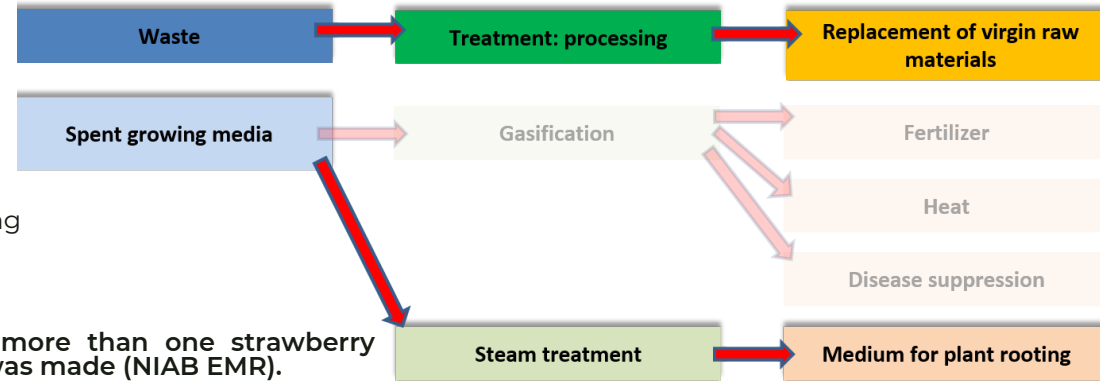
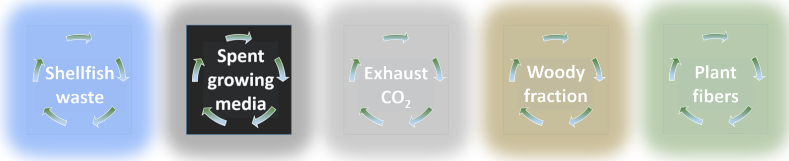
- Small size of gasification related to small amounts of SGM per greenhouse
- As biochar is a source of nutrients, adapting the fertigation is needed and this requires changing the standard operation of the greenhouse
- Interaction with fertigation (nutrient retention)



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Spent growing media: direct reuse or feedstock for biochar



BASELINE SCENARIO

Spent growing media are directly used as soil improver, as a bulking agent for composting or for landfilling, often at the growers site.

NEW SOLUTION 2

Direct reuse of spent coir: the coir slabs can be used for more than one strawberry cultivation cycle. A cost/benefit analysis on direct reuse of coir was made (NIAB EMR).

Watch the [video](#), read the [scientific paper](#), try out the [decision tool](#) or check the [website](#) for more relevant information

STRENGTHS

- Reuse capacity of organic growing media is higher than for media based on mineral wool
- Less labour needed to replace growbags

WEAKNESSES

- Pests and diseases potentially overwinter in the growing media and may infest/infect plants in the following season

OPPORTUNITIES

- Lower disposal or recycling cost when lifetime of coir is extended
- Reduced labour (cost) for replacing bags
- Possibility to isolate a bag when it is infected during reuse
- Less impact of resource availability (increasing global demand of coir fiber, depending on coconut production)
- Less impact of resource quality (pre-processing of coir is strongly affecting the quality)

THREATS

- Risk for transmitting pests and diseases between growing seasons (potential for build-up of diseases or pests)
- Risk for transmitting pests and diseases by the recirculated water during reuse (in contact with all the bags)
- Extra costs for disease control and monitoring
- Labour for replacing plants with diseases
- Yield reduction
- Delayed harvest/yield