New Project: Coir recycling and reuse

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Tasmanian growers have experienced significant challenges with coir costs and freight supplies, prompting the industry to look at ways to reduce the volume of new coir needed each year.

To tackle these rising costs, Fruit Growers Tasmania are running a collaborative research project to explore options to recycle and reuse spent coir to extend its effective lifetime. Led by berry growers from Costa Berry Exchange, Hillwood Berries, and Tasmanian Berries and supported by Doris Blaesing and Jake Gaudion from research agency RMCG, the project will:

- explore options to manage coir physical degradation by incorporating other substrate materials
- trial different sterilisation treatments to address carry-over disease issues
- investigate how strawberry plants respond to the different substrate blends
- explore the productivity, labour and capital costs for coir recycling activities

Supported by the Tasmanian Government through the Agricultural Development Fund, the project will be delivered over the next three years.

L-R Stephen Welsh (Costa), Simon Dornauf and Jason Barnes (Hillwood Berries) and Doris Blaesing (RMCG) discussing recycled coir combinations at Hillwood Berries
Photo credit: Mark Salter

What's involved?

Activities will be delivered in four stages focusing on different elements of the project.

Stage one

Focused on defining the characteristics of alternate substrates, including pathogen load and physical characteristics, and whether it is feasible to use these materials in commercial horticultural production.

Research will be based on and build upon previous literature reviews conducted by RMCG to determine the blend of local by-products in the mixed substrate (i.e., spent coir, pine bark, sand, perlite, biochar, crushed gravel, etc.).

At the end of this stage, the project team will understand the substrate characteristics needed, the materials and sterilisation processes available, as well as which options should be explored in practical research trials.

Stage two

This stage will involve small-scale trials with spent coir and the alternative substrates identified in stage one, to formulate a mixed substrate that produces yields comparable to the current practice (i.e., new coir). Findings from this stage will determine whether a mixed substrate is economically feasible in commercial horticultural production.

It is anticipated that there will be several small-scale trials during this phase to test a range substrate mixes, with spent coir to be sourced from industry partners, then sterilised, mixed with alternative substrates,

Recycled coir combinations at Hillwood Berries.
Photo credit: Mark Salter

and then trialed on a small-scale (0.5ha per farm). At the conclusion of this stage, the most effective substrate mixes will be documented, and a comparative emissions assessment will be carried out for each substrate mix.

Stage three

The mixed substrate identified in the previous stage of the project will be trialed within the industry partner's production systems on a commercial scale.

Throughout these trials, industry partners will collect data on several variables (i.e., yield, growth rate, pathogen profile, physical structure, porosity) to be used in the economic analysis in stage four.

This stage will determine the feasibility of the mixed substrate on a commercial scale and feasibility for adoption by wider industry.

Stage four

The final stage will involve a thorough economic analysis to compare overall production costs between new coir and the mixed substrate using the trial data collected in stage three. This analysis will demonstrate the economic costs and benefits of incorporating coir recycling into production systems.

How can I find out more?

Growers will be invited to take part in a number of interactive field days to learn more about coir recycling, the materials and processes involved, as well as the economic factors at play.

In addition, fact sheets, reports, articles and case studies will be developed throughout the project and shared through the Fruit Growers Tasmania and Berries Australia websites, this journal and industry e-newsletters.

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