



Agriculture & Horticulture
DEVELOPMENT BOARD



New Project

SF 136

Improving water and fertiliser use efficiencies and fruit quality in commercial substrate strawberry production

Project Number: SF 136

Project Title: Improving water and fertiliser use efficiencies and fruit quality in commercial substrate strawberry production

Project Leader: Dr Mark A. Else

Contractor: East Malling Research

Industry Representative: Stephen McGuffie – New Farm Produce Ltd
Andrew Chesson – SH Chesson Partnership

Start Date: 01 April 2012

End Date: 31 March 2013

Project Cost (Total Project Cost): £37,416 (£52,016)

Subject to Contract

Project Summary:

To help improve industry resource use efficiency, a definitive irrigation/fertigation strategy needs to be developed and tested for soil-less soft fruit production. A new water- and fertiliser-saving strategy has been developed in SF 107 and Defra WU0110 and tested on substrate-grown strawberry in 2011. Run-off was eliminated and significant water and fertiliser savings (20-30%) were achieved without reducing Class 1 yields. Aspects of fruit quality were also improved, compared to commercial controls. The irrigation/fertigation strategy now needs to be tested in commercial grower trials. This work will be carried out at two grower sites to help ensure relevance to the industry and to take account of differences in water quality and background EC. Trials will be carried out at SH Chesson Partnership and New Farm Produce Ltd. A partial cost benefit analysis will be completed for both sites. The work will be presented at knowledge exchange events held at the two grower sites in 2012; posters will be presented at Fruit Focus 2012 and at other technology transfer events at EMR

Aims & Objectives:

(i) Project aim(s):

- 1) To improve water and fertiliser use efficiencies in soil-less soft fruit production (main aim)
- 2) To improve yields, quality and shelf-life (secondary aim)

(ii) Project objective(s):

- To test and refine a water- and fertiliser-saving strategy for commercial substrate strawberry production in grower trials
- To carry out partial cost benefit analyses associated with implementing the strategy
- To communicate the results to the industry

- The successful completion of all objectives is essential to achieve the overall project aim
- The project team's experiences in SF 107, SF 118, SF 83 and WU0110 will help ensure that all objectives are met in full

Benefits to industry

- Reduced production costs per tonne Class 1 fruit (reduced spend on water, fertilisers, lower picking costs, reduced risk of rejections due to splits and rots)
- Reduced water usage by up to 30% (compliance with legislation, maintenance/expansion of current production despite increasingly limited and expensive water supplies)
- Reduced nutrient input (reduced vegetative growth, reduced diffuse pollution, compliance with legislation)
- Improved sustainability (more efficient use of water and nutrients, lower production costs)
- Reduced environmental impact (lower abstraction rates, reduced diffuse pollution)
- Improved fruit flavour (less dilution of essential flavour compounds)
- Improved firmness and shelf-life potential (lower susceptibility to bruising and rots)
- Greater resource use efficiency to enable sustainable intensification

Specific partial cost benefit analyses for each site will be completed during the proposed project. Assuming an annual spend of £20k on fertilisers for substrate-grown crops, cost savings of £4-5 k per year could be made without reducing yields or quality.

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