



Agriculture & Horticulture
DEVELOPMENT BOARD



New Project

PE 009

TOMato COMpositional studies to identify and quantify bioactive nutrient associated with tomato fruit quality.

Acronym: TOMCOM

Project Number: PE 009

Project Title: TOMato COMpositional studies to identify and quantify bioactive nutrient associated with tomato fruit quality.

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Project Leader: Dr Paul D. Fraser

Contractor: Royal Holloway University London & Hayman Horticultural Consultancy (HHC)

Industry Representative: Bernard Sparkes, Melrow Salads Ltd,

Start Date: 1st February 2012

End Date: 31st December 2012

Project Cost: £33,000

SUBJECT TO CONTRACT

Project Summary:

Fruit will be identified and sampled under a strict auditable regime by the HDC consultant and submitted to RHUL for analysis using a range of modern analytical techniques. Cultivation will be performed by Flavourfresh Salads of Lancashire and Wright Salads Ltd, who have agreed to make available a range of cultivars from the same glasshouse and growing system.

Aims & Objectives:

- (i) Project aims:
 - a) To update information on the range of nutrients found in UK marketed fresh tomato fruit and imported long shelf-life fruit of known provenance, in order to provide information to producers, health professionals, retailers and consumers on these bioactives. These data can be used to potentially optimise nutrient levels.
 - b) Report on the quality of British grown fruit with respect to nutritionally related

- c) phytochemicals, making comparisons with recommended daily allowances for the nutrients in question, the content delivered in typical portions and comparisons to known levels documented in the literature.

(ii) Project objectives:

- a) To source UK produced tomato fruit for analysis. The samples will be defined and auditable with respect to cultivar, stage of fruit development (ripeness), growing system and production location. Samples of non-UK grown fruit will also be included for comparison but a full provenance may not be possible.
- b) Seasonal and biological replicated cultivation of tomato cultivars under commercial conditions will be performed.
- c) Sampling of tomato fruit under a strict regime to facilitate adequate biological replication and auditability.
- d) Supply Royal Holloway University London (RHUL) with samples for analysis.
- e) Assess consumer health based traits through the cross platform analysis of important health related nutrients (bioactives).
- f) Dossier of phytochemicals conferring health based traits in the UK based tomato cultivars.
- g) Discuss results with producers to investigate potential and alternative market opportunities/strategies.
- h) Disseminate results to industry and consumers via British Tomato Growers' Association.

Benefits to industry

The project will allow growers to identify and explore the market potential of tomato products of high nutritional value, optimise the nutrient content of existing products and, it is anticipated, promote the superior qualities of UK grown fruit compared with imports, especially those with enhanced shelf-life in the latter case, from the use of ripening inhibitor genes.

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