

New prospects from the Scottish raspberry breeding programme

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The *Rubus* breeding programme, implemented by MRS, is renowned for the 'Glen' series of raspberries which are grown throughout the world. The most successful cultivar, Glen Ample, accounts for more than a half of UK acreage and can be described as the industry standard.

Production

Although raspberry production for processing still exists in Scotland, current production is focused on the fresh market, in particular producing a crop under a protected cropping system, the advantages of which include season extension and improvement of fruit quality.

Objectives



For several years, the breeding programme has focused upon the development of machine harvestable cultivars for processing. Although machine harvestable types are still under development, the focus is now primarily on producing summer-fruiting cultivars for the fresh market with improved yield, fruit quality and tolerance to pest and disease.

The rapid rise in the protected cropping area in the UK has led to part of the selection process being conducted in Spanish-style polytunnels, constructed on-site at SCRI. This will help identify adapted germplasm early in the selection process.

Key pests and pathogens of raspberries in the UK

- Raspberry root rot.
Phytophthora fragariae var. *rubi*.
- Large raspberry aphid.
Amphorophora idaei.
- Raspberry beetle.
Byturus tomentosus.
- Raspberry cane midge.
Ressellella theobaldi.
- Raspberry bushy dwarf virus



Raspberry root rot is by far the most devastating disease, and is both difficult and expensive to control.

A significant part of the crossing programme is targeted at producing a tolerant cultivar with improved agronomic traits. Genotypes with putative tolerance are currently undergoing further evaluation in grower trials.

New cultivars under development

Several advanced SCRI breeding lines, selected for their excellent agronomic characteristics, are currently being evaluated in grower trials throughout the UK. The best of these elite selections will be named and released based on their performance in these trials. Currently there are two lines in the programme which are undergoing commercialization:

9053B6 (provisional name 'Glen Doll')

- Glen Rosa x SCRI8605C-2
- Mid to late season.
- A very productive selection with excellent flavour and shelf-life.
- Suitable for fresh and processing markets.



Both genotypes are spine-free and have A₁₀ resistance to the large raspberry aphid *A. idaei*

9062E-1

- SCRI8631D-1 x SCRI8605C-2
- Mid season.
- Bright attractive fruit with a sweet raspberry flavour.
- Very productive when harvested by machine, producing a high proportion of IQF fruit
- Suitable for fresh and processing markets.



Future opportunities

Changes in agronomic practices have implications for a shift in pest and pathogen pressures. Also, the long cane production system provides an opportunity for selection of genotypes with a low chilling requirement, and a shorter flower to fruiting period.

The Scottish raspberry breeding programme maintains a broad germplasm base to meet the rapidly changing requirements of the UK raspberry industry.

Funding

The funding for the breeding programme is provided by the Scottish Raspberry Breeding Consortium, consisting of representatives from all sectors of the UK industry, including growers, propagators, marketing groups together with the Scottish Executive Environment and Rural Affairs Department.