Blackcurrant Breeding and Research at The James Hutton Institute

Achievements and further steps

A. Moura*, S. Gordon

*amanda.moura@huttonltd.com

The James Hutton Institute is equipped with a multidisciplinary team of researchers and facilities, which support the breeding programmes. We are committed to continuously improving our genotypic and phenotypic strategies, screening for plant-resilience, focused on the diverse biotic and abiotic challenges. Since its establishment in 1956, the blackcurrant breeding programme proudly accounts with twenty-five cultivars already launched.

Cultivars

Ben Finlay

A gall mite resistant cultivar

- Medium to low winter chilling requirement
- Early-mid season
- Berry size up to 1.2 grams
- High yields (between 9 to 10 t/ha)
- Fruit hangs on the bushes for over a week after it is ripe
- Excellent flavour
- High vitamin C content
- Resistant to powdery mildew and moderately resistant to leafspot
- Suitable for processing market

Ben Gairn

The only UK variety resistant to Blackcurrant Reversion Virus

- Low winter chilling requirement
- Early season
- Mid-sized berries
- Fairly compact growth habit
- Suitable for processing and fresh market
- Fields can be regenerate due to its resistance to BRV

Is drought the new threat to blackcurrant production?

Facts

The UK has been suffering more frequent episodes of critical weather conditions with drier and warmer summers.

Currants have a high susceptibility to drought during flower initiation and flowering.

Plans

The breeding programme is interested in looking at the development of cultivars less-sensitive to this trait.

The identification of parental sources and mechanisms related to the drought tolerance will be the primary steps.

Crop stability

Facts

Is known some of our cultivars have better yield stability along the seasons than others.

It is crucial to comprehend the underlying mechanisms that lead to this phenomenon and track them genetically.

Plans & Expectations

To ensure the successful replication of desirable traits in future cultivars. In 2023, a study has started to monitor the stability of various traits in a cultivar across filial generations.

Gall mite resistance and blackcurrant reversion virus (BRV)

Facts

BRV is the most destructive pathogen in blackcurrants and is transmitted by the mite *Cecidophyopsis ribis*.

A molecular marker for gall mite resistance was developed at The James Hutton Institute.

Routinely employment of a high-throughput genetic screening through the selection stages of the breeding programme.

Result

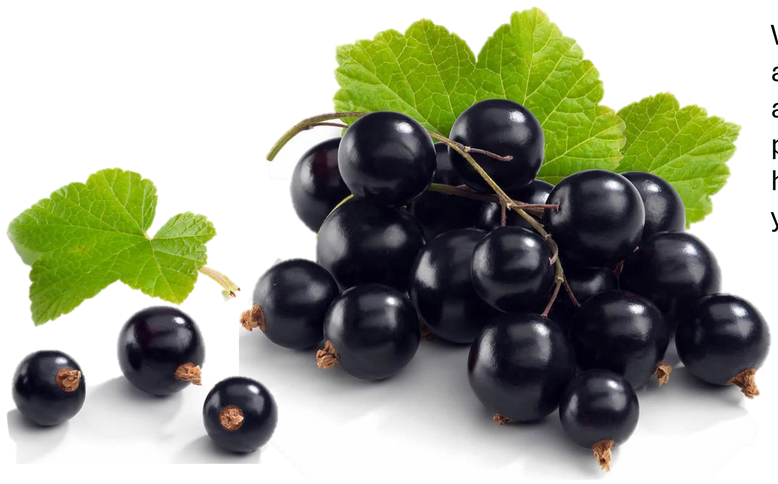
The number of resistant selections in advanced trials has increased and there is an expectation to release new resistant cultivars in the near future.

Future

Our group now is interested in comprehending the genetic control of resistance to blackcurrant reversion virus and its detection.

Dormancy and chilling requirement

Since 2022, high-throughput phenotype screening for chilling requirement has become a routine practice, which has resulted in a reduction in the time required for reintroducing low chill germplasm into crossbreeding. This is expected to have a positive impact on the allelic frequency for the trait.



Would you like to know more about these researches and achievements? A portal was prepared with the latest and higher impact publications that you can access scanning here:

Acknowledgements

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