

Delytics Helps UK Researchers Breed Raspberries for Optimum Taste



Delytics has helped the globally recognised James Hutton Institute research organisation create a new breeding protocol to ensure the majority of their raspberries are liked by consumers.

In 2018, the James Hutton Institute contracted Delytics to assist in the study: 'Feasibility of developing a Novel Breeding Methodology to Improve Berry Flavour'. Supported through funding from Innovate UK, the project was commissioned to improve raspberry flavour by developing new breeding models and decision support tools.

Prior to working with Delytics, the James Hutton research team was unable to validate how the sensory data they were collecting from taste panels matched consumer taste preferences. Delytics helped them by providing a customised consumer liking measurement protocol, which enabled them to identify the genetic regions for liking in raspberries and better understand what the consumer response would be to various raspberry breeds.

James Hutton Institute project leader, Dr Julie Graham, says Delytics' helped the research team 'take a big step forward' by understanding how to select raspberry seedlings from the breeding plots that will meet the taste expectations of UK consumers.



James Hutton Institute project leader, Dr Julie Graham.



“Breeders can now base their breed selections on hard science rather than their own preferences, which will ensure the breeds selected will have the broadest possible taste appeal.”

She says, “Being able to combine Delytics’ understanding of consumer liking with our understanding of genetics has allowed us to tailor our breeding programme to produce raspberries that consistently meet the taste profile that consumers want. We can now analyse the taste data alongside the genetic markers in the raspberries and we have identified the key regions that are really important for flavour.”

Delytics’ ability to measure the Brix, acid and liking of individual berries from only 0.3 ml of juice was a key factor in helping the research team understand the full range of flavours and maturity variability for selected raspberry varieties. This information will now allow breeders to predict consumer response before harvest and develop science-based maturity standards to ensure a consistently good eating experience.

One of the key focuses of the feasibility study was to understand how to effectively breed soft fruit in the UK for consistently great flavour. Consistent berry flavour has been a key consumer attribute that has challenged UK breeders and growers, resulting in low consumer acceptance.



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Dr Graham says, "Only about a third of raspberries tested in UK supermarkets last year were liked by consumers, so that's two thirds of consumers not enjoying the taste experience. The understanding Delytics has given us about taste and consumer liking is massively valuable when it comes to breed selection. Raspberries can yield well, pick well and withstand pests and diseases - but if they don't taste good we just won't get the consumer uplift."

"For us as a breeding organisation, being able to breed raspberries that we know are going to be liked by the majority of consumers is massive for us."

Delytics assisted James Hutton Institute to validate the consumer liking of one of their own varieties that they already suspected would be well received by consumers. Being able to verify that variety will meet the taste expectations of most consumers has given them the confidence to run with that variety and use similar quantification methods for other varieties.

Dr Graham says, "Integrating Delytics' consumer liking tools into our breeding program was really, really useful for us. The easy to implement step-by-step process they gave us is highly effective and transferrable to other crops."

It will be used in our blueberry breeding programme next season and we can see many opportunities for it to add value to other fresh processed crops."

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Delytics has helped the James Hutton Insititute identify raspberry breeds that the majority of consumers will like.



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