

# Sexy strawberries – the future of strawberry breeding

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Whilst it sounds like a no-brainer, the true power of consumer research can often be forgotten. Consumer research provides the opportunity to gain a deeper understanding of what drives consumer behaviour and can help support the development of business strategies that deliver results.

When working closely with a product it is easy to become biased. Stepping away and checking in with real-world consumers can nurture the needs of current consumers whilst finding ways to attract new ones.

Plant breeders know their products intimately and have successfully created products that consumers have loved and enjoyed for years. However, the consumer environment is continually changing and at a rapid rate. Where farmers once dictated what went on the supermarket shelf, consumers now demand what, when and how produce is delivered.

The Consumer and Sensory Research (CSR) team at Queensland's Department of Agriculture and Fisheries (DAF) are working with the Australian Strawberry Breeding Program (ASBP) team to understand consumer behaviour and preferences to help guide future breeding efforts.

## Consumer Focus Groups

In November 2019, DAFs CSR team conducted consumer focus groups, introducing the novel dark red, blush and white strawberry varieties (Figure 1). The study examined the purchase and consumption behaviours of strawberry consumers as well as their acceptance of the new strawberry varieties.

Eight distinct groups of consumers from start-up families and family planners through to health/nutrition focussed consumer and hospitality staff took part. Discussion topics were centred around understanding consumers' current knowledge and behaviours before delving into the thoughts and opinions about the new strawberry varieties.

Consumers were excited by the new novel look of the strawberries; 'Sexy Strawberries', 'Super-Strawb', 'Pina Colada' and 'The Good Berry' were just some of the names used by consumers to describe the novel varieties assessed (Figure 2).

The outcomes of the study highlighted the importance of educating consumers about the defining characteristics of the novel fruits in order to improve product acceptance. Consumers need to be informed about the ripeness of the fruit and what it will taste like as they strongly associate fruit colour with level of ripeness (the paler coloured white and blush fruit were assumed to be underripe whereas the darker red fruit, overripe). Providing information on any additional product properties such as health benefits may also enhance product uptake.

The study also emphasised the importance of understanding the needs of different demographic groups, uncovering potential barriers to purchase. Chefs and hospitality staff were mesmerised by the different colours and envisaged using the product as a hero ingredient whereas the family focussed, and nutrition enthusiasts were mainly concerned with the novel flavours and health benefits. These insights can support positive growth and industry development and improve preparedness for the increasingly demanding customer.



Figure 1. Strawberry varieties – standard red strawberry, dark red strawberry, blush strawberry & white strawberry.  
 Photo credit: Photoelements.com.au



Figure 2. Strawberry names generated by consumers in focus groups. Wordcloud generated using [www.wordclouds.com](http://www.wordclouds.com)



**Figure 3. Panellists in sensory booths at DAFs specialised facility in Coopers Plains, Queensland.** Photo credit: DAF

## Sensory Profiling and Consumer Evaluation

The DAF CSR team will be conducting further research on these strawberries and several other varieties throughout the duration of the Genetics of Fruit Sensory Preferences project (AS19003). This project aims to link consumer and sensory panel data with the genetics of the fruit to allow plant breeders to develop new varieties suited to consumer needs.

Working with a trained sensory panel (Figure 3) to develop a sensory profile for each strawberry variety will enable the development of a common language for both industry and scientists to use. This language will include descriptors for the appearance, aroma, flavour and texture of each strawberry variety.

Large scale consumer evaluation will provide more detailed information on consumer likes/dislikes, purchase barriers and opportunities for product optimisation.

During this project the CSR team will collaborate with the DAF Food Chemistry and Genetic Improvement teams to identify the genes associated with key consumer qualities. This information can then be used by breeding programs to genetically screen plants and better identify accessions with superior consumer traits, resulting in tastier strawberry varieties.

## Acknowledgements

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The DAF Consumer and Sensory Research team will be working closely with the DAF Food Chemistry and Genetic Improvement teams to achieve the project goals.

Disclaimer: The above information is sourced from focus groups conducted by the DAF Consumer and Sensory Research team. The Queensland Department of Agriculture and Fisheries, and Horticulture Innovation Australia provide the above information as a guide only and take no responsibility for the performance of the varieties on individual farms.



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