

The future's bright, the future's blush!

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Recent food trials conducted by the Department of Agriculture and Fisheries (DAF) have centered on food neophobia, the hesitancy to try new or novel foods. Understanding consumer sentiment is crucial for the success of any product, particularly those that challenge conventional norms. One noteworthy example is the ongoing focus on white, blush, and dark red strawberries.

In 2022, the consumer and sensory research (CSR) team at DAF conducted a study emphasising the need to educate consumers about the distinct characteristics of these novel strawberries to enhance product acceptance (See the article *Sexy strawberries – the future of strawberry breeding* on PAGE 75 of the Winter 2022 Edition of the *Australian Berry Journal*). Subsequently, the team has been actively engaged in testing new varieties, delving into their sensory attributes, and closely examining consumer opinions. The ultimate goal is to support the industry in a successful product launch by gaining a comprehensive understanding of consumer preferences.

The trials, conducted in July and August 2023, examined 10 varieties and accessions from the DAF Australian Strawberry Breeding Program (ASBP) including seven standard red fruit; *Scarlet Rose*, *Susie*, *Red Rhapsody*, *Phenomenal*, 2021-109, 2017-040 (new subtropical variety named *Stella*), and three novel; 2021-413, SB17-230 and SW20-317 (Figures 1 and 2).

Over the course of the research, the CSR team collaborated closely with the ASBP team in Nambour ensuring the seamless integration of the growing process into the trials. Fruits, meticulously selected and handpicked, underwent testing the day after harvesting, guaranteeing panellists a taste of the freshest produce.



Figure 1: Strawberries assessed (nine of 10)

Photo credit: Photoelements



Figure 2. Novel fruit; blush, white & dark red strawberries

Photo credit: Photoelements

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Background

The CSR team at DAF conducts a comprehensive suite of research providing insights into consumer preferences and sensory experiences (Figure 3). The methods and processes by which the team design their studies are complex and rigorous and ensure representative and tangible outcomes for industry.

To be part of either a sensory panel or consumer research group, individuals go through several stages of recruitment. A trained sensory panellist has acute sensory capabilities, that are first screened through specific exercises. These include blind taste trials, descriptive exercises, colour blindness tests and even a formal interview. Should they pass all these, they then partake in several sessions within a group to determine their suitability to be a part of the team. On the other hand, consumer panellists are recruited primarily for their purchase and consumption habits. For example, in recent strawberry trials, the CSR team recruited those who consume strawberries at least once per week. They also screen out those who are fearful of trying new foods and ensure a balance of age and gender. These criteria are all project-specific and at times can be somewhat peculiar.

Both trained sensory panellists and consumers are remunerated for their time, underscoring the high regard in which their contributions are held. This practice not only attracts high-calibre participants but also reinforces the commitment to recognising the significance of diverse opinions.



Figure 3. Participant assessing strawberries at the DAF sensory facility. Photo credit: Photoelements

A strategic decision in the screening process for strawberry involved the exclusion of food-neophobes, individuals averse to trying new foods. The rationale behind this was to eradicate bias in data interpretation.

With novel strawberries, that feature a spectrum of colours including white, blush and dark red, understanding the holistic eating experience is paramount. For food-neophobes the look of the fruit alone would prevent them from enjoying it, regardless of the taste. However, it is essential to understand whether the whole eating experience is enjoyable, and if not, why not? Therefore, by recruiting non-food-neophobes, researchers enable the opportunity to dig deep into consumer sentiment and where possible improve the fruit in the future.

Research outcomes 2023

So, what's new? The research carried out in the past year has expanded upon prior findings. Through sensory analysis, distinctive profiles have been established for each assessed strawberry variety, connecting these characteristics with consumer preferences and purchasing intent. The descriptors employed to portray the fruit ranged from *green*, *grassy*, and *citrusy* to *tropical*, *jammy*, and *floral*.

Furthermore, the results have demonstrated that educating consumers and managing their expectations lead to increased liking for novel fruits. Building on the feedback from the 2022 trials, in the 2023 trials, the CSR team provided consumers with information about the sensory attributes of both the novel and standard varieties, aiming to prevent bias toward the standard fruit. The outcome has been positive, with improved liking scores for all novel fruits. Education of consumers, however, continues to be a priority as we bring all strawberry consumers along on the journey, both non-food-neophobes and food-neophobes alike.

The research has also highlighted two unique consumer clusters. Consumers within the first cluster were intrigued by the novel fruit and enjoyed the whole eating experience, including the novel appearance and flavours. Conversely, consumers in the second cluster were particular about the appearance of their fruit, preferring the traditional red varieties, regardless of flavour.

The future of novel strawberries is bright, and we are now confident about positive consumer engagement. While they may not be everyone's preference, for those who appreciate the variety and vibrant colours, these fruits provide a new and exciting alternative to the familiar and beloved nutritious berry!

