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## ABSTRACT

Crowdsourced citizen science is an emerging approach in plant sciences. The triadic comparison of technologies (tricot) approach has been successfully utilised by demand-led breeding programmes to identify varieties for dissemination suited to specific geographic and climatic regions. An important feature of this approach is the independent way in which farmers individually evaluate the varieties on their own farms as ‘citizen scientists’. In this study, we adapted this approach to evaluate consumer preferences to boiled sweetpotato (*Ipomoea batatas* (L.) Lam) roots of 21 advanced breeding materials and varieties in Ghana and 6 released varieties in Uganda. We were specifically interested in evaluating if a more independent style of evaluation (*home tasting*) would produce results comparable to an approach that involves control over preparation (*centralised tasting*). We compiled data from 1,433 participants who individually contributed to a *home tasting* (de-centralised) and a *centralised tasting* trial in Ghana and Uganda, evaluating overall acceptability, and indicating the reasons for their preferences. Geographic factors showed important contribution to define consumers’ preference to boiled sweetpotato genotypes. Home and centralised tasting approaches gave similar rankings for overall acceptability, which was strongly correlated to taste. In both Ghana and Uganda, it was possible to robustly identify superior sweetpotato genotypes from consumers’ perspectives. Our results indicate that the *tricot* approach can be successfully applied to consumer preference studies.

## METHODS

### Centralised tasting



Members of the community were brought together in centralized locations and briefed on the activities and the questionnaires.



Sweetpotato roots were cooked in different pots and each participant received 3 coded samples to taste and score. Translators were provided for those who could not read or write to assist with completion of the questionnaires

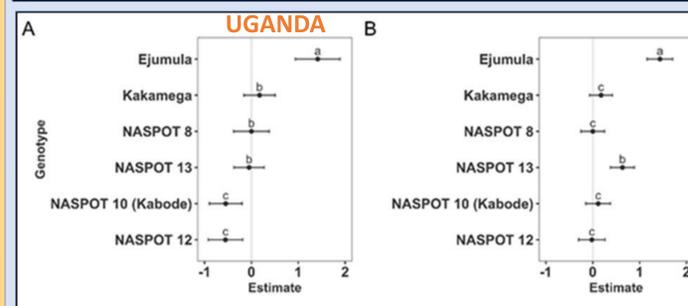
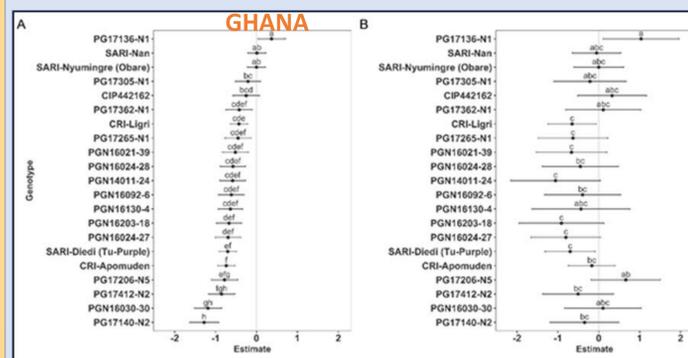
### Home tasting



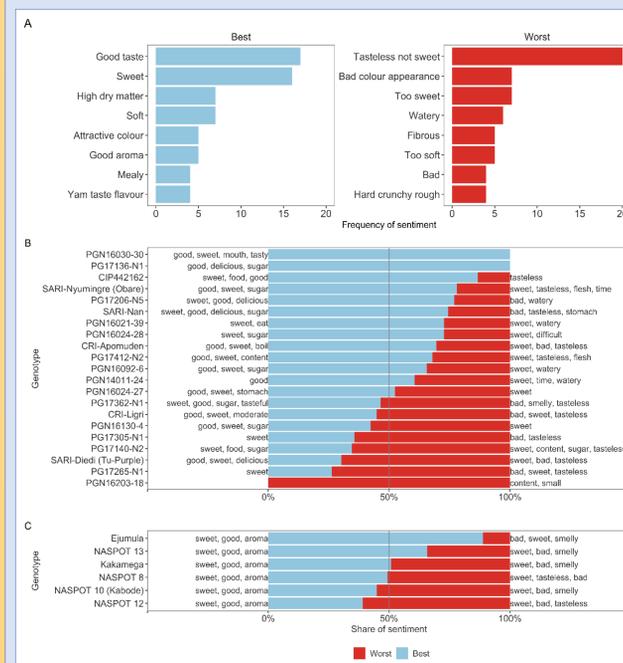
- 3 coded genotypes per household to cook and score
- Members over 18 years of age allowed to participate
- Completed questionnaires collected following day



## RESULTS



The most preferred genotypes for Ghana and Uganda were identified and they were consistent for both (A) centralized and (B) home tasting



Sentiment analysis for the drivers of consumer preferences to boiled sweetpotato identified taste as the main driver for both (B) Ghana and (C) Uganda communities. The varieties with the lowest scores were described as tasteless or not sweet.

## CONCLUSIONS

- The most preferred genotypes were consistent for centralised vs home tasting
- Tricot is a robust tool which could effectively be adapted to consumer preference studies.
- Tricot can contribute to coordinated efforts of breeders and food scientists to deliver varieties that are likely to meet demand along different nodes of the sweetpotato value chain.

## ACKNOWLEDGEMENTS

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