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TH2.2: Gendered mapping and consumer testing of steamed matooke in urban areas of Uganda

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Outline

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Introduction

- Breeding interventions have produced improved banana varieties focused on increasing productivity
 - Addressed challenges such as pests and diseases and effects
- End-user uptake of improved varieties low
- Low uptake partly attributed non-consideration of social aspects during product development



Introduction Cont'd

- This study sought to understand end-user preferences for Matooke (EAHB)
- Explored the (Un)desirable attributes for urban consumers segregated by sex, age and income status
- Useful precursor for targeted breeding of cultivars with consumers' preferred characteristics



Study Objectives

To understand the different ways in which the urban population consumes matooke

To identify the quality characteristics and descriptors of steamed matooke for urban consumers

To understand how gender, age and income status influence the preferences and prioritisation for the characteristics of steamed matooke

Methods

Approach

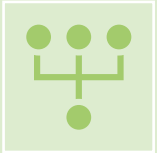


Study implemented in a phased manner over a period of 3 years (2019-2021) using mixed methods

Phase I in 2019 involving conduct of FGDs

Phase II in 2020 involving individual interviews and household surveys

Phase III in 2021 involving conduct of consumer tests



The phases built on each other:



Data from phase I informed development of tools for phase II and selection of samples for consumer tests.

The tools

- Adapted from the RTB Foods project
Focus on Urban Vs Rural consumers
- Consumer tests followed a method adapted from Genevieve et al., 2018 and Forsythe et al., (2021)
- Three steps:
 1. a hedonic test for overall liking,
 2. Just-About-Right (JAR) test,
 3. Check-All-That-Apply (CATA)

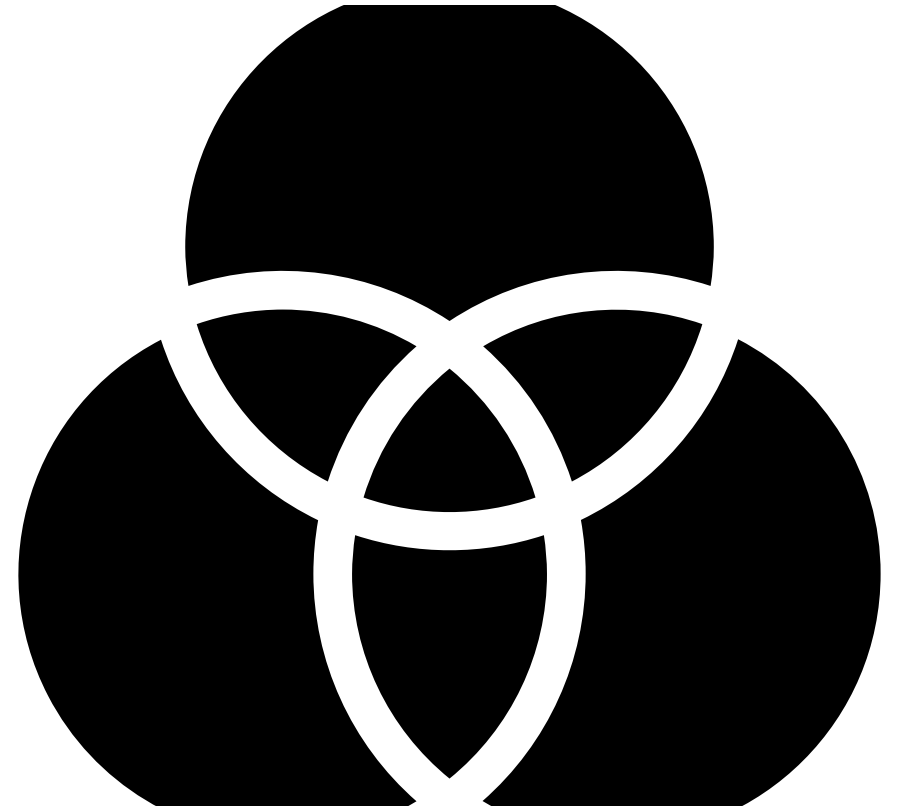


Consumer test steps

- Overall liking assessed based on a combination of appearance, texture, smell and taste, using a nine-point hedonic scale (from 1 =“ dislike extremely”, to 9 =“ like extremely”).
- Intensity of attributes (mouthfeel, softness, colour, matooke taste and smell) evaluated using a 5-point scale JAR “Just About Right” scale
 - (1 = “Much too low”, much too weak, much less; 2 = Slightly low, slightly weak, slightly less 3= “Just About Right”; 4 = “Slightly too high, slightly too strong, slightly too much”; 5 = Much too high, much too strong, much too much).
- Selection from a list of 24 liked and disliked sensory descriptors using a “Check-All-That-Apply” (CATA) approach.

Analysis

- All the data was disaggregated and analysed by sex and age of the respondent, sex of HH head and income status of the household.
- Some of the data generated from the study feeds into the G+ tools (Analysis).



Study Area

Kampala and Wakiso districts
in Central Uganda



Study population

Sex/District/category/ Income status	Sex and age of the participants							Income status			
	Adult Female	Adult Male	Adult Total	Youth Female	Youth Male	Youth Total	Grand Total	High income	Middle income	Low income	Grand Total
Kampala	69	43	112	61	84	145	257	5	127	3	135
Wakiso	25	35	60	32	32	64	124	121		125	246
Grand Total	94	78	172	93	116	209	381	126	127	128	381

17 FGDs conducted including (9 female, 4 male, 3 mixed)

Examples of outputs/Results

Consumption Patterns

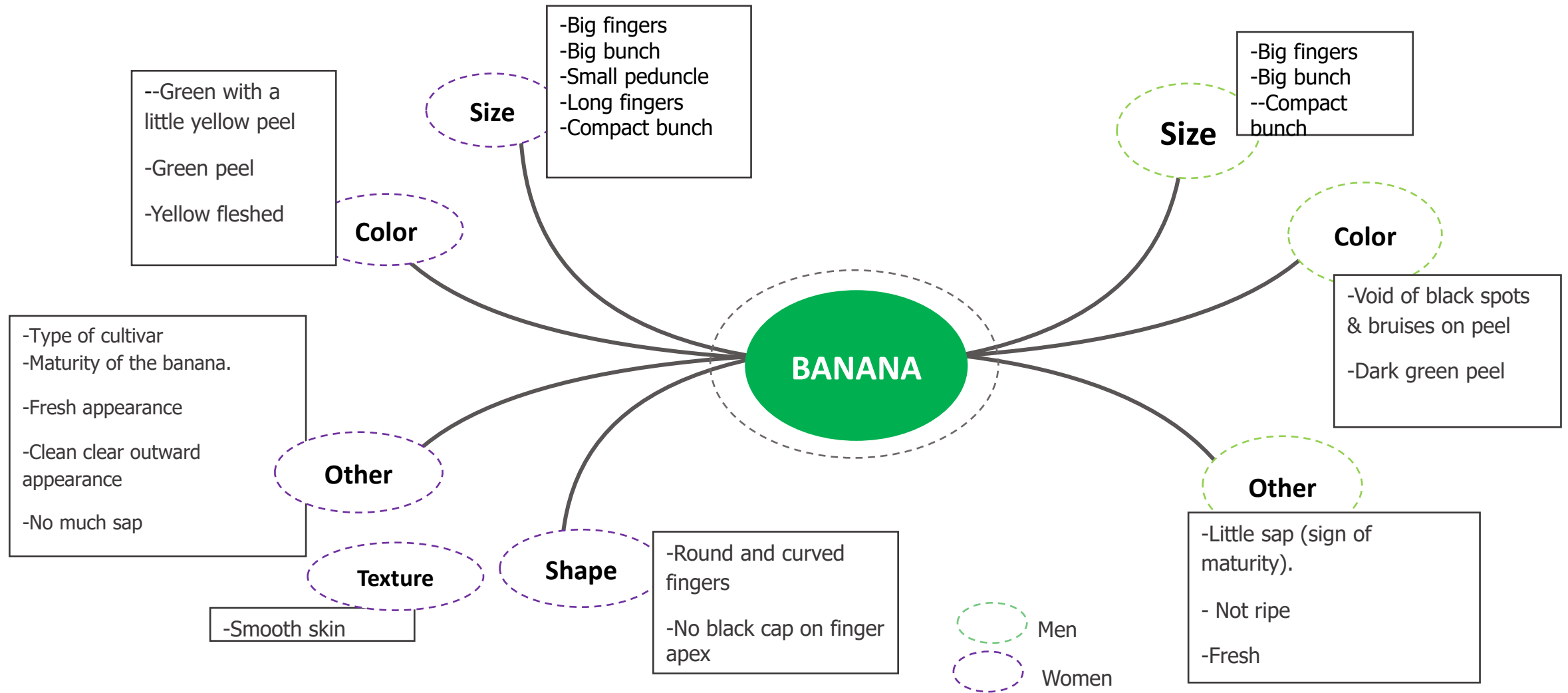
			Sex and Age of the respondent				Income status		
Form of consumption	Response	% Total	Adult Female	Adult Male	Youth Female	Youth Male	High	Middle	Low
Roasted	No	80	22	14	22	22	26	28	26
	Yes	20	3	6	2	9	7	6	7
Katogo	No	8	2	2	2	2	3	3	2
	Yes	92	22	19	23	28	30	30	32
Boiled-mashed	No	68	18	13	17	19	20	25	23
	Yes	32	7	7	7	11	13	9	11
Steamed-mashed	No	3	0	1	1	1	1	1	1
	Yes	97	24	20	24	29	32	33	32
Boiled-unpeeled (Empogoola)	No	79	20	16	22	21	25	28	26
	Yes	21	4	5	3	9	8	5	8

Frequency of consumption, most frequently consumed form

Attributes before preparation of steamed Matooke-FGD quotes

- “A dark green mature and large finger takes less time to peel and it is easy to mash. It is also safer for her (the wife) to peel large sized fingers because chances of her cutting herself while peeling are minimal. If fingers are small, you lose a lot of flesh when peeling,” *Male Youth FGD – Makerere Kikoni.*
- “The mature banana with little sap saves time. You don’t have to wash your hands after peeling because the sap does not stick. The food also cooks fast, is soft and easy to mash. When the food is ready, it looks very nice and as a woman it gives you pride and a sense of accomplishment when you serve your husband,” *High income Female FGD – Makerere Kikoni.*

Considerations in purchasing bananas



Mean overall liking

Matooke sample	Adult Female	Adult Male	Youth Female	Youth Male
Mpologoma	6.6 ^{abc}	6.4 ^{bcd}	6.8 ^{abc}	6.2 ^{cd}
Ntika	6.3 ^{bcd}	6.0 ^{cd}	5.6 ^d	5.6 ^d
Nakitembe	6.2 ^{cd}	6.9 ^{abc}	6.1 ^{cd}	6.7 ^{abc}
Kibuzi	7.5 ^a	7.3 ^{ab}	7.3 ^{ab}	6.8 ^{abc}

*Overall liking was rated on a nine-point scale from 1 = dislike extremely, to 9 = like extremely.

**Different letter denotes significant difference between means. Tukey test (p<0.05).

Summary

- Matooke taste was a key determinant for preference.
- Differences in preference among income classes and gender groups (sex and age).
 - Consumers from high- and low-income households preferred matooke made from the Kibuzi cultivar while middle income households, preferred steamed Mpologoma.
 - Female consumers preferred steamed Mpologoma while the males liked steamed Nakitembe more.
- Key drivers of overall liking were; Yellow, Nice Aroma, Attractive, Sweet (delicious, not sweet like sugar), Homogeneous (one colour), Good taste, and Soft.

Conclusions

- Need for breeding interventions to package appropriate products based on the preferences of the various socio-demographic segments, including by sex, age and income class groupings to enhance new cultivar adoption.
- More research to unlock the preferred attributes through gender-responsive sensory quantitative descriptive analysis and physico-chemical characterization, to guide breeding efforts geared towards improving sensory acceptability of matooke cultivars.

Working paper on this research
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Acknowledgement

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Thank you!

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