Sensory evaluation and consumer preference of white fleshed and orange fleshed sweetpotato

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Why investigate sensory and consumer acceptance of orange fleshed sweetpotato in Africa?

- Vitamin A deficiency is a cause of early childhood death.
- Pale fleshed sweetpotato low in β-carotene is traditionally consumed
- Orange fleshed sweetpotato cultivars contain β-carotene but have different sensory characteristics
Issues in introducing new cultivars

- Success depends not only on production characteristics but sensory ones
- Intervention strategies need to consider sensory pleasure as well as cultural, social and demographic variables
- Children’s preferences influenced during early years of life
- Mothers influence children via their own preferences and might limit foods offered to children

Approach

- 2 traditional PFSP and 2 OFSP cultivars
- Panel evaluated sensory characteristics in detail
- Consumer acceptance judged by 94 school children and 60 mothers with pre-school aged children at a rural location in the Lake Zone, Tanzania
### Appearance of cooked SP

<table>
<thead>
<tr>
<th>Variety</th>
<th>Description</th>
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<tbody>
<tr>
<td>Polista</td>
<td>Sinia B</td>
</tr>
<tr>
<td>Resistó</td>
<td>Karote DSM</td>
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### Sensory panellist

![Sensory panellist](image)
Findings: Sensory characteristics

![Graph showing sensory characteristics](image)

- Karote
- Polista
- Resist
- Sinia B
- Creamy
- Orange
- Watery
- Pumpkin
- Yellow
- Coarse
- Starchiness
- Hard
- Sweet
- Fibrous

PC1 (76 %) vs. PC2 (19 %)
School children testing sweetpotato

Mothers with young children testing sweetpotato

<table>
<thead>
<tr>
<th>Dislike very much</th>
<th>Dislike moderately</th>
<th>Dislike slightly</th>
<th>Neither like nor dislike</th>
<th>Like slightly</th>
<th>Like moderately</th>
<th>Like very much</th>
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How do consumers judge the cultivars?

No difference between mothers & pre-school aged children

But is this the whole picture?
Measuring variability in consumer acceptability?

Increases in productivity/quality/reliability of supply of commodity

Development of new products

Evaluation and promotion of products

Means of consumer segments

Children's acceptance

S3 (76%)  S1 (17%)  S2 (7%)

Segment

Means of consumer segments

Mother's acceptance

S4 (38%)  S3 (31%)  S1 (31%)

Segment
Means of consumer segments

Children acceptance

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How does consumer acceptance relate to the sensory panel attributes?

**School children**

**Mothers**

Conclusions

- Sensory & consumer testing a useful tool to support nutrition interventions, breeding and post-harvest initiatives:
- But only part of picture – yield, disease resistance, post-harvest losses also;
- Consumer acceptance differed – mothers liked more than children & 3 patterns of acceptability;
- Difference between children & mothers in sensory perception?;
Conclusions

- Need to screen new cultivars
- Not all OFSP are equally liked (maturity? & need to identify which groups)
- HarvestPlus - will explore acceptability in Uganda and Mozambique. Impact of nutrition messages on acceptability.

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- Bundala Ramadhani & Asia Kapande, TAHEA, Tanzania