End-User Selection of Preferred Banana Hybrids

Research GAP

When improving East African Highland Cooking Banana, female fertile varieties are crossed with male inedible wild parents, or their derivatives, that carry the desired traits/genes. A big drawback, however, is that some **undesirable qualities often occur**, which may **affect end-user acceptability** of the hybrids. To raise the chances of achieving hybrids that combine the desired attributes, thousands of hybrid lines need to be generated – and evaluated. A **lack of efficient tools to evaluate end user-preferred traits early in the breeding pipeline lengthens the process**.

What WE DID

Multi-disciplinary research teams, composed of social-scientists, physiologists, food scientists, breeders and economists, drawn from multiple institutions were assembled. **Surveys were then conducted** to identify end-user preferred traits, which were then characterized in laboratory-based **sensory analyses**, followed by **physico-chemical analyses** to determine and quantify the traits. **Cooking and tasting sensory evaluations**, involving panels composed of male and female farmers, were also conducted in multiple locations in Tanzania and Uganda, where NARITA hybrids are being tested.

What WE ACHIEVED

We **developed an analytical tool** for quality and sensory evaluation of banana hybrids, to support variety release in locations where they will be adopted by a functional multi-disciplinary research team. Further to this, six **acceptable hybrids have been identified** for advancement to multi-locational farmer-led trials in Uganda, including NARITAs 4, 7, 12, 17, 18 and 24. This work has highlighted the importance of such sensory analyses and physico-chemical profiling of banana, the **capacity** for which, both at laboratory and farm level, has been **substantially strengthened**.

Preparation and sensory analysis of Matooke hybrids (1) Peeling, (2) Cooking (3) Laboratory sensory analyis in a both, (4) Consumer sensory analysis on farm

Why THIS IS IMPORTANT

Knowledge of end-user preferred traits will **enable more precise hybrid evaluation and selection** tools, for targeting preferred traits in downstream breeding of varieties, **better tailored to local tastes and traditions**. This contributes to, and **helps improve, the responsiveness** of the banana breeding programs to the needs and preferences of diverse and contrasting end-user groups (farmers, traders, consumers etc.) within the banana value chain. In time, this will **help reduce the cost** of the evaluation process through a more precise selective process that will **improve the adoption** of derived (and preferred) hybrids.

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