

Addressing Vitamin A Deficiency through incorporation of Vitamin A rich banana varieties in Ugandan farming and food systems

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BACKGROUND

Micronutrient deficiencies, especially vitamin A deficiency (VAD) remain a public health problem in Uganda. Where about 4 in every 10 children under 5 years (38%) have VAD, this is way above the WHO threshold point of 15%. Main reason being consumption of monotonous diets mainly based on starchy staples with little or no animal source foods and yellow/orange/green vegetables and fruits.

CONSEQUENCES OF VITAMIN A DEFICIENCY

- It is the leading cause of preventable blindness in children
- It increases the risk of disease and death from severe infections
- Among women, it contributes to higher mortality and poor pregnancy outcomes

VISION

‘ In the next 5-10 years, 5 million farmers in Uganda and 15 million of farmers in the Eastern Africa will be growing, consuming and marketing several Vitamin-A rich bananas, with related improvements in Nutrition and livelihoods’



Vitamin-A rich banana –To'o (Left); Local EA banana –Sukali Ndizi (Right)

WHY FOCUS ON BANANA?

- Bananas are an important crop to the livelihoods of millions of rural and urban people in Uganda
- Uganda is highest banana consumer in the world (0.70 kg/day/person)
- Bananas are a food security crop (perennial, mixed / intercropped)
- There is an affordable banana-based dish for any social-economic group
- Bioversity International has the Biggest banana germplasm collection in the world
- However, banana breeding is costly and time consuming
- Rapid banana testing and introduction offers an alternative
- It can lead to a 9.6 –17.1% reduction in the burden of illness due to VAD in Uganda and is more cost-effective than other health-nutrition interventions

Rapid Banana Testing & Introduction

Breeding

- From 2018
- Low yield vitamin A rich bananas with local high yield bananas

Study of trade offs

- From 2017
- Trades offs of vitamin A access from different dietary sources

Human feeding trials

- From 2017, in **Uganda**
- Evaluate change in serum vitamin A

Monitor adoption

- 2014: on going, in Burundi and DRC
- Monitor adoption in farming and food systems

Training

- 2014: on going, in Burundi and DRC
- Train community resource persons & community

Multiplication

- 2014: on going
- Distribution to farmers in Burundi and DRC

Evaluation

- 2010: on going in Burundi, DRC, Rwanda
- 12 varieties: Agronomic and sensory
- **Uganda: started in 2015**

Screening

- 2005-2008
- >400 banana types screened

Name	Country of Origin	Highest bunch weight (Kg)	Type	Fruit Ripening Stage	100g* meets this % of Vitamin A Daily needs of <5yrs
Apantu	Ghana	25	Plantain	Unripe	80.42
				Ripe	171.63
Bira	Papua New Guinea	22	Plantain	Unripe	74.08
				Ripe	177.42
Sepi	Papua New Guinea	28	Cooking	Unripe	34.5
				Ripe	165.8
Lahi	Hawaii	30	Cooking	Unripe	57.3
				Ripe	178.3
To'o	Papua New Guinea	13	Dessert	Unripe	9.67
				Ripe	136.03

*100g is about 1 finger. Figures based on content of fresh/uncooked samples