

# DLB Product Profile – Fresh bean pod (Uganda)



**Stanley Nkalubo**  
NARO, Uganda

## Design target

Higher yielding, attractive bean pod with a longer shelf-life for the emerging fresh pod bean market.

Stanley Nkalubo leads Uganda's national research program on two major legumes: the Common Bean (*Phaseolus vulgaris*) and Soybean (*Glycine max*). He has over 17 years' experience as a bean breeder and geneticist, and is based at the National Crops Resources Research Institute (NaCRRI), Namulonge, Wakiso district, Uganda. He has released 16 common bean varieties of which 12 are widely grown in Uganda and in other countries in the East African region. From 2002-2006 he did his PhD training at the University of Kwazulu-Natal, Pietermaritzburg Campus, at the Africa Centre for Crop Improvement (ACCI), South Africa.

## Contact

tamusange@gmail.com



## Product Profile design team

Step 1		
<b>PP Design Team Lead/Champion</b>		Stanley Nkalubo
		National Agricultural Research Organization (NARO), Uganda
PP Design Team		
Person	Area of Expertise	Name of organization
Stanley Nkalubo	Breeder	NARO, Uganda
Clare Mukankusi	Breeder	Bioversity-CIAT Alliance, Uganda
Ssekandi Wilber	Agronomist	NARO, Uganda
Luyima Gabriel	Seed systems	NARO, Uganda
Jean Claude Rubyogo	Seed systems	Bioversity-CIAT Alliance, Kenya
Richard Ariog	Socio-economist	IFPRI, Uganda
Rachael Namaganda	Socio-economist	NARO, Uganda
Grace Nanyonjo	Gender specialist	National Crops Resources Research Institute, Uganda

## Clients and markets

Step 2	
Product profile descriptors	
<b>Product profile name</b>	Fresh bean pod
<b>Crop</b>	Common bean ( <i>Phaseolus vulgaris</i> L.)
<b>Country</b>	Uganda
<b>Geographic regions</b>	Central, Eastern and South-Western Uganda
<b>Target market segment and positioning</b>	New emerging market – fresh bean pods in Uganda and East African region. High yield, attractive pods and grain appearance with good consumer taste and long shelf life
<b>Name of target variety or landrace to be replaced</b>	"Kayembwa" – a landrace. Poor yield and susceptible to diseases. NABE 12C has required features, but a climber, expensive to produce and limited geographical production
<b>Date PP created</b>	27.04.2020
Target client and use	
<b>Value chain primary clients/customers</b>	Farmers, traders (market women), consumers
<b>Market scale</b>	Local and regional markets
<b>Use</b>	Food
<b>Type of processing</b>	None – fresh pod/grain
<b>Market class</b>	Sugar type
Target crop producers and production system	
<b>Number of farmers</b>	25,000–45,000
<b>% ratio: male to female farmers</b>	20–30% male; 70–80% female
<b>Production system</b>	Open field
<b>Area of production system</b>	15,000–30,000 ha
<b>Growth habit</b>	Bush (determinate/indeterminate)
<b>Expected level of inputs</b>	Medium fertilizer, low crop protection
<b>Typical yield range of target system</b>	10–15 t/ha (fresh pod weight before threshing)
<b>Cropping system</b>	Continuous monocropping
<b>Mechanisation</b>	Mainly hand threshing
<b>Agroecological zone</b>	Low-medium altitude (1000–1800 m)
<b>Total seed market</b>	1,250–2,250 tonnes

## Variety technical specification

### Step 3

Client/customer	Driver	Trait category	Preference group: Women (W) Men (M) Youth (Y) W+M+Y (All)	Trait demand classification: 1. Essential/"must have" 2. Niche opportunity 3. Added-value 4. Winning trait	Target traits	Trait description (Quantitative measures)	Name of benchmark variety	Performance required compared to benchmark variety <=> etc.
Farmer	Productivity	Yield	All	1	Yield of fresh bean pods	Weight of fresh pods at physiological maturity in kg/ha	NAROBAN 1	>
		Biotic stress resistance	All	1	Angular leaf spot resistance	< 3 (CIAT scale)	NABE 4	>
			All	1	Anthracnose resistance	< 3 (CIAT scale)	NAROBAN 1	>
			All	1	Root rot resistance (Pythium and Fusarium spp.)	< 3 (CIAT scale)	NABE 14	=
			All	1	Bean stem maggot damage resistance	< 3 (CIAT scale)	NABE 21	>
		Abiotic stress tolerance	All	3	Drought tolerance	After flowering (terminal drought)	NAROBAN 6	=
	Crop management and harvesting	Plant architecture	All	1	Erect bush	Erect bush type 1 or 2	NAROBAN 1	=
	Market value and price	Bean appearance	All	1	Fresh speckled bean seed grain	White with speckles (red, purple or dark blue)	NABE 12C	=
		Crop duration	All	3	Early maturing	Ready for harvesting < 60 days from sowing	NABE 15	≤
	Post-harvest storage	Storage-life	W	4	Stay-fresh pod appearance	Pods fresh at room temperature (approx. 24C) for 5–7 days postharvest	NABE 12C	>
Consumer	Satisfaction	Taste	W	1	Good taste and palatable	Sweetish taste	NABE 12C	=
		Appearance	All	1	Speckled grain	White background colour with red, purple or dark blue speckles	NABE 12C	=
		Shelf-life	All	3	Long shelf-life	Fresh bean grain appearance	None	None
		Nutrition	W	3	High micronutrients levels in grain	≥ 80 ppm Fe and ≥ 35ppm Zn content in bean grain	NAROBAN 4C	>
		Digestibility	All	1	Low or no gas production	Less than benchmark variety	NABE 12C	<
		Food preparation	W	3	Fast cooking time	Short fresh cooking time (30–60 mins)	NAROBAN 3	<



Healthy pods



Deteriorating pods

*"Preparing a Product Profile can be a daunting task. You have to listen to so many different people. You also need to analyze what they're saying and turn it into a description that enables you to 'see' the new variety. This requires a lot of patience. But Product Profile development is a must - and a game-changer."*