The value of farmers varieties and indigenous knowledge in cassava breeding in DR Congo

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Cassava Germplasm: Collection Process and Action Plan for South, East and Central Africa

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Introduction

Cassava is the most important food crop in DRC.

It occupies at least 2 million hectares which represent about half of the area under food crops.

Cassava tuberous roots and leaves are important to the Congolese population.

The roots and its processed product provide about 66 % of the daily required energy to the populations

Introduction (cont)

The cassava leaves, used as a relish, constitute the most important vegetable of the country

Tuberous roots per capita is estimated at 241 kg/person/year

Leaf consumption is estimated at 6,240,000 mt per year. This is an average of 54 kg/person/year

Cassava germplasm Development in DRC

- **In the 50's**
- **INEAC**
- **Subsistence crop for indigenous communities**
- **Mandatory crop against food shortage**
- **Introduction of *M. glaziovii* for rubber production**

New trends in cassava production

- **Food crop**
- **Cash crop**
- **Emerging new commercial products**
- **No social barriers for its consumption**
  - **Processed roots**
  - **Leaves as vegetable**

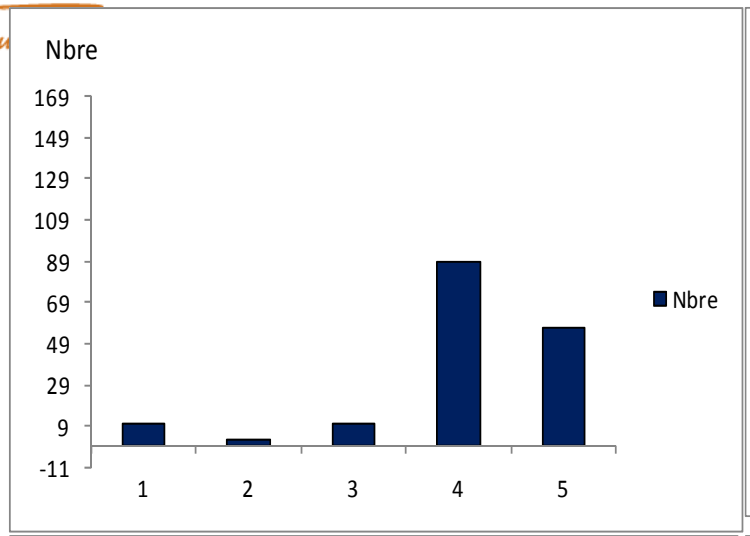
Main traits in farmers varieties

- **Dry root yield**
- **Mid to high branching**
- **Dark green color leaves**
- **Early bulking**
- **Lasting maturity (late maturity)**
- **High quality products**
- **Bitter vs sweet taste**

Collection and conservation of cassava genetic resources

- **About 650 varieties maintained in main research stations**

- **CMD DISTRIBUTION IN LOCAL AND IMPROVED COLLECTIONS**
  - **WHITE PULP**
  - **YELLOW VARIETIES**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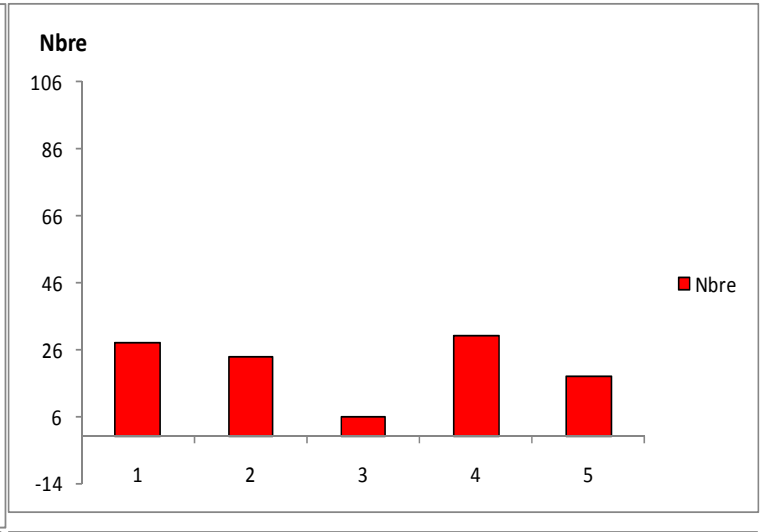
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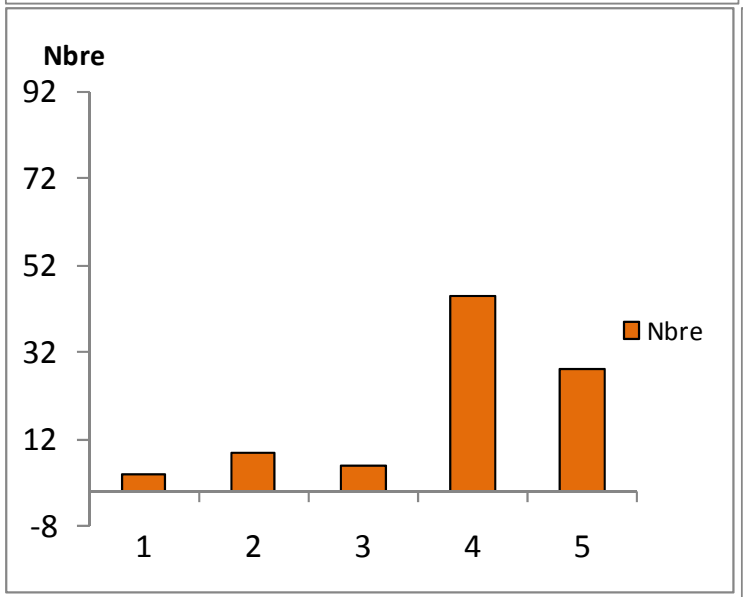
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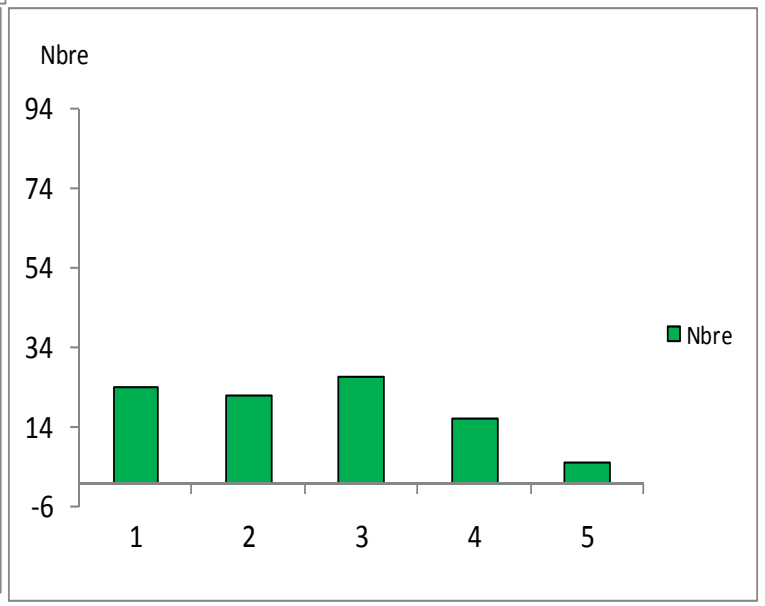
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- **Incorporating farmers knowledge in DRC cassava breeding**
- **PVS**
- **On-station and on-farm visits/discussions**

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Research to Nourish Africa

LOOKING AT NUTRITIONAL VALUE

- **WHITE AND YELLOW ROOTS**
- **LEAVES FOR PROTEINS AND MINERALS**

CASSAVA LEAVES AS VEGETABLE

KEY DRIVERS IN CASSAVA IMPRVMT AS PART OF VALUE CHAIN STRATEGY (4)

- **EARLY & SHORT MATURITY**

  VS

- **STABLE TO LATE MATURITY**

Early and late maturing varieties?

- **Breeders have skewed TIME OF MATURITY of cassava germplasm to early bulking (EB) populations**

- **Late bulking (LB) varieties**
  - **rarely selected,**
  - **discarded at early generation selection stages,**
  - **yet still predominant with farmers landraces**

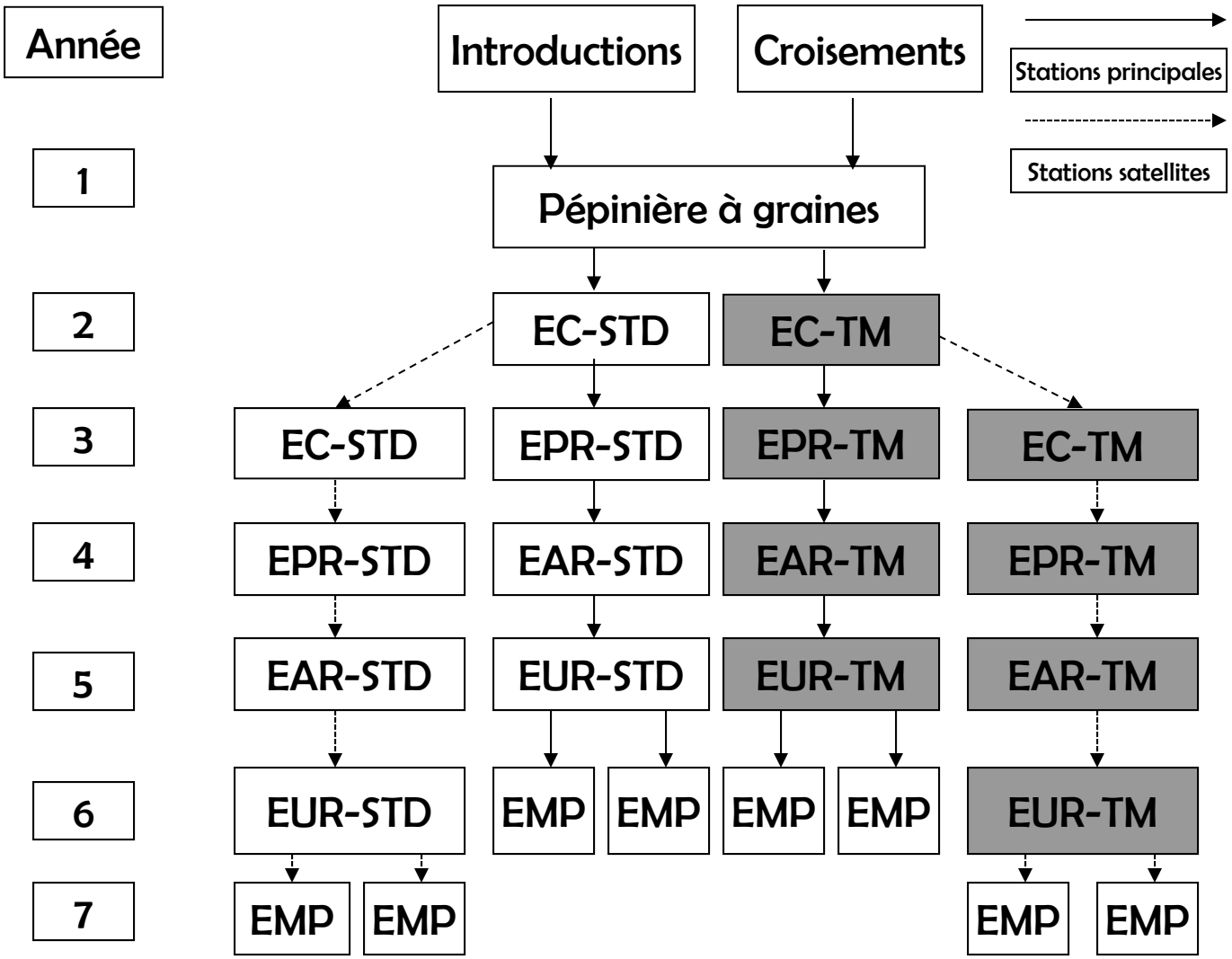
Early and late maturing varieties?

- **Most EB clones, no economic root yield at 15 to 24 MAP (Starch to sugar)**

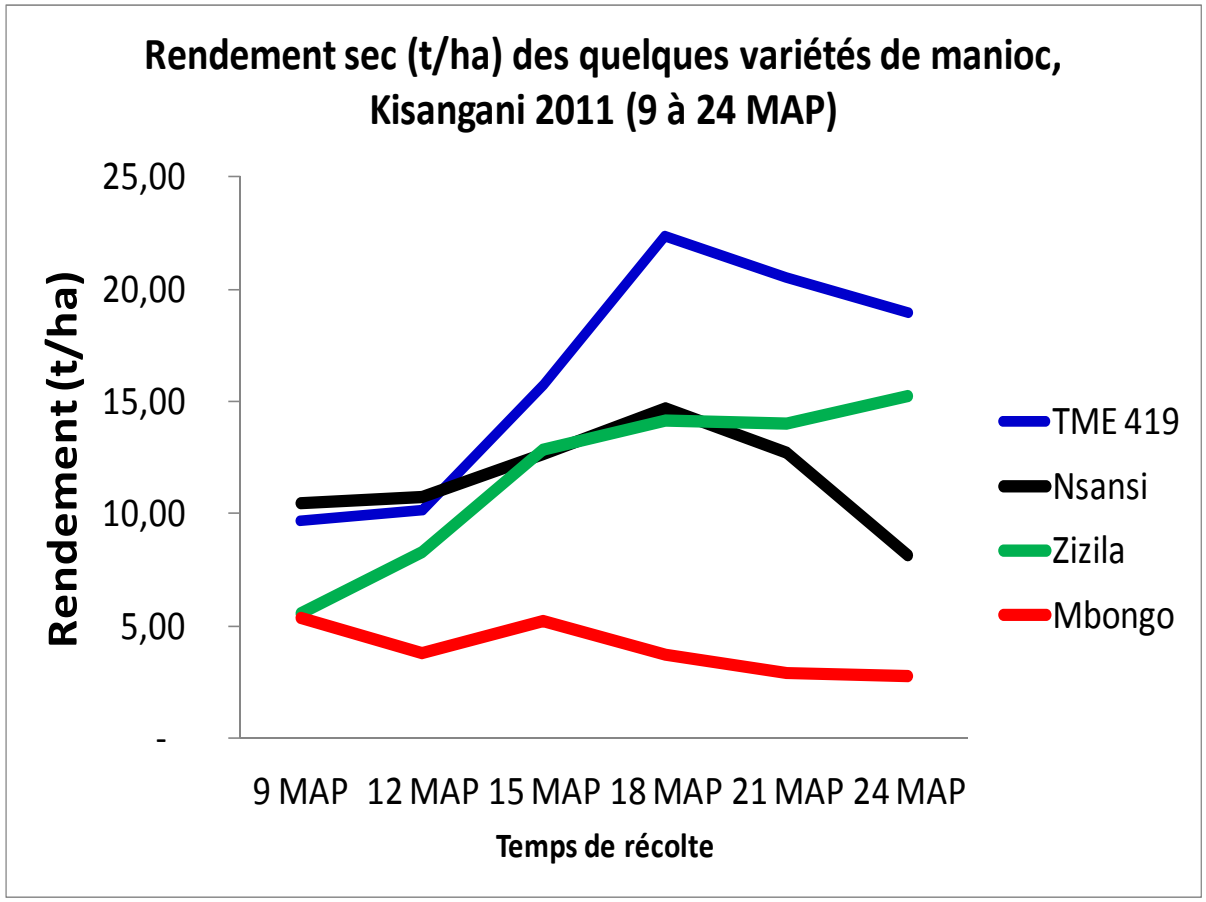
- **Large farms and SS farmers safety nets with delayed harvests of EB face yield loss**

- **Selection scheme to consider both?**

Nouveau schéma de sélection, RDC 2011



Early bulking and lasting, stable dry yield will respond to both commercial and subsistence farming



Trait	VARIETY										
	OBAMA (TME 419)	LUEKI	SADISA	RAV	MVUAMA	MVUAZI	LIYAYI	ZIZILA	BUTAMU	NSANSI	DISANKA
Leaves	X		X		X			X			X
Ramification				X						X	X
Flesh	X	X			X	X		X			
Precocity	X			X							
Root Taste	X	X					X		X		
Products quality	X	X	X	X	X	X	X	X	X	X	X
Dry matter	X	X		X	X	X		X		X	

Merci pour votre attention