

Research and Methods

The creation and breeding of new plantain varieties at the CRBP, Cameroon

Breeding work at the *Centre de Recherches Régionales sur Bananiers et Plantains* (CRBP, Regional Banana and Plantain Centre) at Njombé in Cameroon is aimed mainly at the creation of hybrids with resistance or tolerance to pests and diseases of bananas and plantains. This improvement is supported by two strategies:

- a short-term strategy whose prime objective is the creation of plantain type tetraploid hybrids resistant to black Sigatoka disease (BS);
- a medium and long-term strategy with the main objective of breeding plantain type sterile triploid hybrids with multiple resistance to pests and diseases.

Whatever the strategy developed, being sure to breed high-performance hybrids requires fundamental knowledge of resistance mechanisms, of the heritability of resistance, study of the ploidy levels of hybrid populations and finally the development of an early selection test for the main diseases.

Research station studies performed on about 50 hybrids and exotic cultivars made possible an initial selection of 4 hybrid plantains bred by CRBP (CRBP 014, CRBP 039, CRBP 085 and CRBP 100), 2 dessert type varieties (IDN 077 and Lagun Vunalir) and 3 cooking varieties (Topala, Dwarf Kalapua and Kalapua No. 2).

The hybrid **CRBP 014** is interesting with regard to its size, its vigour giving it a certain stability (wind resistance), bunch weight in the second cycle and finger length. The selection of **CRBP 039** has been confirmed. This hybrid of 'French clair' plantain has total resistance to BS and the second cycle bunch is large with well-filled fingers because of the large number of live leaves at harvesting. The hybrids **CRBP 085** and **CRBP 100** are promising, with bunches weighing more than 20 kg and long fingers.

Two other hybrids were pre-selected in 1999 after a cycle of clone evaluation at the Njombé research centre. These are **CRBP 269** and **CRBP 178**, which possess partial resistance to BS. Observations during the second production cycle will confirm their agronomic potential.

Evaluation of the commercial potential of plantain hybrids was initiated in 1998 to respond to increasing interest by export sector operators specialising in long fruits of the False Horn type. A study of the impact of partial dehanding on the increase of fruit size has been undertaken. The preliminary results promise a substantial increase in fruit length and girth •

Contact: **Eric Fouré**, Cirad-flhor
eric.fouere@cirad.fr

Several agronomic characteristics of the plantain hybrids selected after two production cycles
Clone evaluation performed at Njombé

Hybrids and cultivars	Average bunch weight in 1st cycle (kg)	Average bunch weight in 2nd cycle (kg)	Number of live leaves at harvesting	Yield potential (t/ha/year)	Fruit length (cm)	Other characteristics
CRBP 014	12.5	29	3.85	36	24	Good size Well-shaped hanging bunch
CRBP 039	23	28	6.1	42	23	High resistance to BS Good fruit filling
CRBP 100	22	20	2.3	42	23	Good fruit filling
French clair	19	16	0.8	39	23	
CRBP 085	23	23	5.4	48	25	Early harvest / Loose hanging bunch / Long curved fingers
French sombre	19	18	1.1	36	22	

Several characteristics of two new hybrids pre-selected after the first cycle of clonal evaluation at Njombé

Hybrids	Flowering (months)	Flowering to harvest (months)	Average bunch weight (kg)	Fruit length (cm)	Harvest (months)	Number of live leaves at harvesting
CRBP 269	9.2	2.8	21	24	12	3
CRBP 178	11.3	3.1	21.8	25	14.4	6
French clair (reference)	9.9	2.5	14.2	23	12.4	0