

EVALUATION AND RELEASE OF B3 POTATO (*SOLANUM TUBEROSUM* L.) VARIETIES IN THE ANGOLAN HIGHLANDS

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Integrated Research and Development Project for Production and Marketing Systems of Banana, Manioc, Sweetpotato, and Potato in the Provinces of Uíge, Kwanza Norte, Huambo, and Huila in Angola

This project is a five year initiative implemented by the International Potato Center (CIP) and the Agronomic Institute of Research (IIA) in collaboration with public and private partners. Main objective is the sustainable increment of the economic contribution of four vegetatively propagated crops-- banana, cassava, sweetpotato, potato – for improved food security and diets of the communities with Vitamin A-rich foods as well as increasing the income of the farmers and poverty reduction in the rural areas of 4 provinces with diverse agro-ecologies: Uíge, Kwanza Norte, Huambo and Huila.

Materials and methods

In 2010, twenty CIP-B3 potato clones with improved late blight resistance (*Phytophthora infestans*) were introduced into Angola and tested in two agro-ecological highland regions: Huambo province (Ecuinha, Chipeco and Chilela) and Huila province (Humpata and Chibia). The selection was carried out with a participative evaluation component as well as Positive Selection (Kowalski et al, 2012) with farmers and consumers establishing their preferences in regard to the market quality aspects and taste. The clones were evaluated in four sites in the highland region , in Huambo province (Chipeco and Chilela, and in Huila province (Humpata and Chibia).

Results

The selected B3 clones with the CIP codes 371056.175, 395015.6, 39511.13, 393382.44, 396036.201, had yields of 15- 25 t per ha with application of Positive Selection, and showed significantly improved late blight resistance compared to the commercial varieties used as standards (cv. Romana, cv. Diamante).

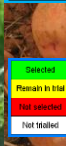


B3 Evaluation trial in Ecuinha, Huambo province in 2010

CIP-B3 clone	Trial number	Huambo		Huila	
		Chipeco	Chilela	Humpata	Chibia
391046.14	1	1	1	1	1
371056.175	2	2	2	2	2
393280.82	3	3	3	3	3
395015.6	4	4	4	4	4
395096.2	5	5	5	5	5
395111.13	6	6	6	6	6
395111.19	7	7	7	7	7
395111.36	8	8	8	8	8
396027.205	9	9	9	9	9
396033.102	10	10	10	10	10
393280.57	11	11	11	11	11
393382.44	12	12	12	12	12
393885.39	13	13	13	13	13
396004.225	14	14	14	14	14
396016.103	15	15	15	15	15
396034.103	16	16	16	16	16

Summary of the selections of CIP-B3 clones in Angola 2010-12

CIP-B3 clone	Huambo		Huila	
	Chipeco	Chilela	Humpata	Chibia
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20



List of CIP-B3 clones with interest for Angola

No	CIP-B3	Name for release in Angola	Comments and recommendations
2	391058.175	Boa Branca	Preferred taste and tuber aspect
3	393280.82		Promising in Huila province
4	395015.6	Rosa	Late blight resistance, proposed for chips
6	395111.13	Preferencia Chevron	Late blight resistance
7	395111.19		Promising in Huila province
8	395112.36		Promising in Huila province
9	396027.205		For evaluation in other provinces
11	393280.57		Promising in Huila, for evaluation in other provinces
12	393382.44	IIA50	Stable variety with reliable yields
15	396026.103		Possible tolerance against bacterial wilt
17	396036.201	Barcelinha	Preferred in Huambo province for taste and aspect
18	396038.107		Promising in Huambo, for evaluation in other provinces



Discussion and conclusions

Commercial potato varieties have been introduced into Angola in a non-systematic manner without fully taking into account the natural conditions, and without regulated production of seed potato within the country (Kowalski et al. 2011). This, has partly led to its low productivity with an average of 7,86 t per ha reported in 2012. The released varieties have potential of reducing cost of production to farmers through minimal use of fungicides. The project has initiated the technical base for B3 potato seed production established 1. rehabilitation of tissue culture capacity 2. aphid proof greenhouses 3. diagnostic laboratory for virus and bacterial wilt

detection 4. Implementation of Negative and Positive Selection with farmer 5. Diffuse Light Stores for seed potato storage.

Potato varieties being launched in Angola	CIP-B3-371056.175	CIP-B3-395015.6	CIP-B3-396036.201	CIP-B3-393227.44	CIP-B3-395111.13
Given name Angola	Boa Branca	Rosa	Barcelinha	IIA50	Preferencia Chevron
t/ha	16,9 - 25,4	18,6 - 23,8	9,2 - 26,8	16,6 - 25,6	16,6 - 25,6



Basic seed production and germplasm maintenance in aphid proof greenhouse in EEA Chianga, Huambo



Clean seed intervention in Ecuinha, Huambo province

References

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