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COMPARATIVE STUDIES OF SWEET POTATO (*IPOMOEA*
BATATAS, LAM.) CLONES FROM CUBA AND GUADELOUPE

A. RODRIGUEZ NODALS^(°)

1 - SOIL - COVERING BY THE FOLIAGE

It could be observed that independently from the clones, the foliage of March and June plantations covered the soil about one week earlier than the September and December plantings. Generally, the fastest covering clone was "Jabrun IV" (within 6 weeks) and the latest one was "Baracutey" (6,7 weeks").

2 - FLOWERING BEHAVIOR

The flowering of the six clones coincided only in November and December. The Guadeloupe clones "Duclos XI" and "Malesco 2" had the same flowering period (from October until November) ; the Cuban clones "Haïti" and "Cuba 1" flowered from October to February.

The Cuban clone "Baracutey" had the shortest flowering period : November and December. The Guadeloupe clone "Jabrun IV" flowered during the longest period from October to March.

3 - DRY MATTER STORAGE IN STEMS, PETIOLS, LEAVES AND TUBERS

1°/ June planting

Two types of reactions were observed :

a) The clones "Haïti", "Cuba 1", "Malesco 2" and "Jabrun IV" gave a decrease of dry matter in the tubers, stems, petiols and leaves between the fifth and sixth months.

b) The clones "Duclos XI" and "Baracutey" maintained a continuous dry matter increase in the tubers until the sixth month and a decrease in the stems and petiols.

2°/ September planting

All the clones presented a continuous dry matter increase in the tubers until the sixth month and a light dry matter decrease in the stems and petiols between the fifth and sixth months.

3°/ December planting

In the six clones dry matter content in the tubers increased until the sixth month and that of stems and petiols decreased between the fifth and sixth months except for the clone "Jabrun IV" which maintained the same dry matter content between the fifth and sixth months.

(°) C.E.M.S.A., Seed Enterprise, Ministry of Agriculture, CUBA.

4°/ March planting

The clones "Haïti", "Baracutey", "Malesco 2" increased the dry matter percentage in the tubers until the sixth month and the clones "Cuba 1", "Jabrun IV" and "Duclos XI" had a light dry matter decrease between the fifth and sixth months.

The dry matter content of stems and petiols in the clones "Haïti", "Cuba 1", "Baracutey" decreased between the fifth and sixth months and the three Guadeloupe clones maintained a continuous increase of the dry matter percentage in the stems and petiols until the sixth month.

4 - TUBER AND FOLIAGE YIELD AT THE SIXTH MONTH

Clone "Cuba 1" reached the highest general average yield in tubers (48 t/ha), clone "Haïti" followed with an average yield of 41 t/ha. The clone showing the smallest tuber yield was "Jabrun IV" with a general average of 29 T/ha. In foliage yield, the clone "Jabrun IV" reached the highest general average (48 t/ha). The planting months of highest tuber yield were June and the one of least yield was December.

5 - CONCLUSION

These results indicate that, under Cuba conditions, the clones "Cuba 1" and "Haïti" are more productive than those introduced from Guadeloupe. Other experiments carried out in Cuba had shown that the clones "Duclos XI" and "Malesco 2" gave the highest tuber yield between the fifth and sixth months.

It was observed that in this study the clones of highest tuber yield were also those that had the least foliage yield and that conversely the clones of highest foliage yield gave the least tuber yields.

Clone "Duclos XI" showed the best balance between tuber and foliage productions.

Referring to comparable studies carried out in Guadeloupe, it seems that in Cuba there is a tendency of cycle lengthening for the clones reputed early in Guadeloupe.

SUMMARY

Continuing the French-Cuban cooperation about tropical root and tuber crops, developed by the CEMSA (Improvement Center for Vegetative Seeds, Ministry of Agriculture, Cuba) and the CRAAG (Agronomic Research Center for the French West Indies and Guyane - INRA), comparative studies were carried out using the best Cuban sweet potato clones ("HAITI", "CUBA 1" and "BARACUTEY") and those from Guadeloupe ("DUCLOS XI", "MALESCO 2" and "JABRUN IV").

The performance of these six sweet potato clones was evaluated in four planting periods (June 75, September 75, December 75 and March 76). The experiments were planted on a Santa Clara clay in the fields of the CEMSA, in Santo Domingo, Villa Clara, Cuba (22°35' N Lat/80° 18'W Long/40 m above sea level). The interval between plants was 0,30 m and between rows 0,90 m.

As propagation materials, 0,30 m long stem cuttings were used. The equivalent of 90 kg N, 90 kg P₂O₅ and 180 kg K₂O/ha was applied. Harvesting was done within 180 days.

The following aspects were evaluated :

- 1°/ Soil - covering - speeds, in weeks from planting date.
- 2°/ Flowering behavior, that is the time after which the six studied clones produce flowers under Cuban conditions.
- 3°/ Dry matter storage in stems, petioles, leaves and tubers.
- 4°/ Foliage and marketable tuber yields in 180 days.

This study was undertaken also in Guadeloupe, but here only the Cuban results are given.

RESUME

Dans le contexte de la coopération franco-cubaine sur les plantes tropicales à tubercules, développée par le CEMSA (Centre d'Amélioration pour les Semences Asexuées, Ministère de l'Agriculture, Cuba) et le CRAAG, Centre de Recherches Agronomiques Antilles-Guyane - INRA), des études comparatives ont été menées sur les meilleurs clones cubains de patate douce ("Haïti", "Cuba 1" et "Baracutey") et ceux introduits de Guadeloupe ("Duclos XI", "Malexo 2" et "Jabrun IV").

Le potentiel des six clones de patate douce a été évalué pendant quatre périodes (Juin, Septembre, Décembre 1975 et Mars 1976). Les essais ont été installés sur des sols argileux de Santa Clara dans les parcelles du CEMSA à Santo Domingo, Villa Clara, Cuba (22°35' lat. N/80°18' long. W, à 40 m d'altitude.

L'intervalle de plantation était de 0,30 m entre les pieds et de 0,90 m entre les lignes.

Comme matériel de propagation, on a utilisé des sections de tige de 0,30 m de long. La fumure utilisée était 90 kg N, 90 kg P₂O₅ et 180 kg K₂O par ha.

La récolte a été faite après 180 jours.

Les aspects suivants ont été évalués :

- 1°/ Délai de couverture du sol en semaine après la plantation;
- 2°/ Comportement de floraison, c'est le temps après lequel la floraison a eu dans les conditions de Cuba.
- 3°/ Stockage de matière sèche dans les tiges, les pétioles, les feuilles et les tubercules.
- 4°/ Rendements en feuillage et en tubercules commercialisables après 180 jours.

Cette étude a aussi été entreprise en Guadeloupe mais seuls les résultats cubains sont présentés dans ce texte.