



INIVIT B-70, new sweet potato (*Ipomoea batatas* (L.) Lam.) cultivar with higher early maturity and productivity

INIVIT B-70, nuevo cultivar de boniato (*Ipomoea batatas* [L.] Lam.) de mayor precocidad y productividad

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ABSTRACT: To obtain the new sweet potato cultivar, directed crosses were made between two parents, one early maturity and the other with high photosynthetic efficiency. The progenies resulting from the combinations showed a high variability for the characters early maturity, yield and the combination of both. The INIVIT B-70 cultivar has a harvest cycle of 100 days and a yield of 28 t ha⁻¹ under production conditions.

Key words: plant breeding, characters, hybridization.

RESUMEN: Para la obtención del nuevo cultivar de boniato, INIVIT B-70, se realizaron cruzamientos dirigidos entre dos progenitores, uno precoz y otro de alta eficiencia fotosintética. Las progenies resultantes de las combinaciones efectuadas mostraron una alta variabilidad para los caracteres precocidad, rendimiento y la combinación de ambos. El cultivar INIVIT B-70 posee un ciclo de cosecha de 100 días y rendimiento promedio de 28 t ha⁻¹, en condiciones de producción.

Palabras clave: fitomejoramiento, caracteres, hibridación.

INTRODUCTION

The first work related to sweet potato breeding in Cuba was carried out by Juan Tomás Roig at the beginning of the 20th century at the Agronomic Experimental Station of Santiago de las Vegas. Then in 1967, CEMSA (now INIVIT) was founded and efforts were initiated for the genetic improvement of this crop on a scientific basis. Until that time, traditional and improved cultivars had a long cycle of 6 to 7 months and could only be planted at one time of the year (July-January). In 1972, Dr. C. Alfredo Morales Tejón, at that time a young agronomist engineer, began working at INIVIT; he led the National Program for the Genetic Improvement (PMG) of sweet potato in Cuba for 47 years (1972-2019). The renowned scientist carried out the

1974 hybridization campaign, in which he obtained 10,000 botanical seeds and in 1978 released the CEMSA 74-228 clone, the first short cycle clone (135 days) with high yields in the spring season. Later, in the hybridization campaign of 1978, it obtained one of the most important clones in Cuban agriculture, called CEMSA 78-354, which has a 120-day harvest cycle.

From 1978 to date, it has not been possible to improve the precocity of sweet potatoes in Cuba. It has been difficult to obtain cultivars that combine the desired level of earliness with an acceptable yield potential, since a short cycle limits total photosynthesis and, to a certain extent, yield potential. Earliness is a quantitative trait controlled by many genes with pronounced effects of the environment.

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The new cultivar released by INIVIT's PMG, called INIVIT B-70, has a harvest cycle of 100 days (very early) and has advantages over existing cultivars, such as: escape from a wide variety of stresses (biotic and abiotic), produces food in a shorter period of time and reduces field work by 20 to 25 days.

ORIGIN AND DESCRIPTION

Stems predominant pigmentation: Green.

Mature leaf shape: Triangular with shallow lobes

Predominant color of the tuberous root skin: Pinkish

Predominant color of tuberous root flesh: Dark yellow and pale orange in the wide ring of the bark.

Shape of tuberous root: Obovate.

Dry mass: 26.8 %.

Disease index for (*Cylas formicarius* F.): Low (< 2.6 %).

Harvest cycle: 95-100 days

Yield under production conditions: 28 t ha⁻¹

PARENTAGE AND PEDIGREE

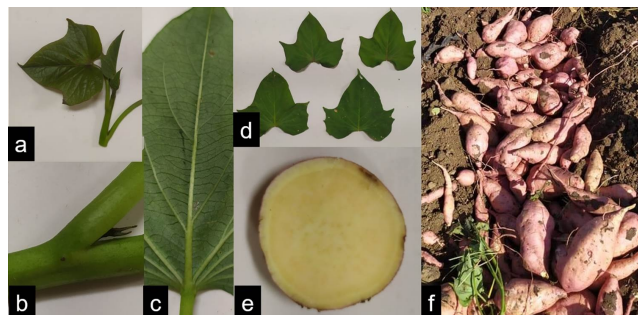
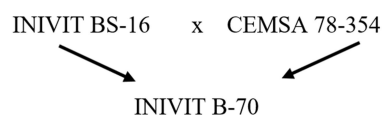


Figure 1. INIVIT B-70 sweet potato cultivar, young leaves from the apical section of the stem (a), petiole stem insertion point (b), veins on the underside of the leaf (c), leaves (d), color of the tuberous root pulp (e) and tuberous roots (f)