

Report of new variety 'ELBITA': BEGOMOVIRUS RESISTANT TOMATO VARIETY FOR TROPICAL CONDITIONS

Reporte de nuevo cultivar 'Elbita': variedad de tomate resistente a Begomovirus para condiciones tropicales

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ABSTRACT. 'Elbita' arises from the need to have tomato varieties adapted to the Cuban tropical climate for open field planting. It is a variety resistant to TYLCV-IL [CU], begomovirus of greater incidence in the country and tolerant to fungal diseases, such as Alternariosis. It has characteristics which allows it to be used as a cultivar for opening (seedbeds in August) and closing of the season (seedbeds in January) of sowing.

Key words: breeding, *Solanum lycopersicum*, hybridization, cultivar, selection

RESUMEN. 'Elbita' surge por la necesidad de contar con variedades de tomate adaptadas al clima tropical cubano para siembras a cielo abierto, en campo. Es una variedad resistente al TYLCV- IL [CU], begomovirus de mayor incidencia en el país y tolerante a las enfermedades fungosas, como la Alternariosis. Posee características que le permite que se siembre en la apertura (semilleros en agosto) y cierre de campaña (semilleros en enero).

Palabras clave: mejora genética, *Solanum lycopersicum*, hibridación, cultivar, selección

INTRODUCTION

The production of tomato (*Solanum lycopersicum* L.) in Cuba, in a field production system, in the open, requires varieties adapted to tropical weather conditions and resistant to the main disease that affects yields, Tomato Yellow Begomovirus Leaf Curl Virus (TYLCV-IL [CU]) The availability by producers of Cuban varieties with these characteristics constitutes an advantage over imported varieties to extend planting and harvest dates.

ORIGIN

Elbita variety was obtained from the crossing of the commercial variety 'Mariela' (INCA), susceptible to TYLCV and 'Vyta' (IHLD), resistant to TYLCV. From the F2 segregating generation derived from that crossing, the "single seed descendants" selection method was applied, modified to one fruit per plant. The F7 lines were evaluated for resistance to TYLCV-IL [CU], Cuban isolate of TYLCV, by artificially inoculating this Begomovirus, using the natural vector of this disease, whitefly, *Bemisia tabaci* (Gennadius), under greenhouse conditions. The resistant lines were evaluated the agronomic characteristics and the yield in diverse dates and times of sowing, at experimental level, in the Las Papas farm (INCA) and at the production level, in the "La Pedrera" farm of the Credit Cooperative and Services (CCS) "Venancio Núñez", Mayabeque The selection of the best lines was made according to their agronomic behavior

and resistance during different sowing dates, taking into account the criteria of the producer and researcher.

DESCRIPTION

'Elbita' is a variety with habit of determined growth (sp). The foliage covers the fruits of the sun's impact, since these develop in the central part of the plant. The fruits are large, with an average mass of 130 grams, with multiple loculi; its color is light green, with a slight green hue, more accentuated in the shoulder area, which disappears when ripe. The ripe fruits have a uniform orange red color, with a sweet taste on the palate, 4.5 °Brix and 22.3 % acidity (measurements taken one day after harvest). It has tolerance to early and late planting conditions, with fructification percentages close to 90% and shows resistance to Alternariosis, in the field (5-10 % of affected leaf area, compared to 40 % of the susceptible cultivar HC 3880). It is resistant to TYLCV (values of severity of 0 and values of viral DNA content less than 0.01 ng μL^{-1} , compared to values of severity of 3-4 and viral DNA content of 10 ng μL of the susceptible cultivar Campbell -28), checked by inoculation under controlled conditions, with the natural vector. 'Elbita' can reach average yields superior to 50 t ha⁻¹ in optimum sowing, 27 t ha⁻¹ in early sowing and 38 t ha⁻¹ in late sowing, obtained in the CCS "Venancio Núñez, Mayabeque. It was registered in the Register of Commercial Varieties (Ministry of Agriculture, Cuba) with no. 7/2016.



Received: April 26th, 2017

Accepted: March 9th, 2018

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