

Report of new variety “MARIANA, A NEW CULTIVAR OF TOMATO (*Solanum lycopersicum* L.), RESISTANT TO BEGOMOVIRUSES”

Informe de nueva variedad “Mariana, un nuevo cultivar de tomate (*Solanum lycopersicum* L.), resistente a begomovirus”

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ABSTRACT. ‘Mariana’ is a cultivar of tomato obtained by selection at the National Institute of Agricultural Science. This cultivar is resistant to begomoviruses *Tomato yellow leaf curl virus* (TYLCV), *Tomato yellow spot virus* (ToYSV) and *Tomato severe rugose virus* (ToSRV). It has a high productive potential and an appropriate quality for fresh consumption and industrial purposes.

Key words: plant breeding, cultivar, disease resistance

RESUMEN. ‘Mariana’ es un cultivar de tomate obtenido por selección en el Instituto Nacional de Ciencias Agrícolas (INCA). Este cultivar es resistente a los begomovirus *Tomato yellow leaf curl virus* (TYLCV), *Tomato yellow spot virus* (ToYSV) y *Tomato severe rugose virus* (ToSRV). Presenta un elevado potencial productivo y una adecuada calidad para el consumo en fresco y su empleo con fines industriales.

Palabras clave: mejoramiento genético, cultivar, resistencia a la enfermedad

INTRODUCTION

In Cuba, begomoviruses are major pests affecting tomato yields. The cultivar ‘Mariana’ was obtained due to the current need to have new cultivars with broad resistance to these pathogens and whose resistance is conferred by different genes to *Ty-1*; this cultivar will be included in the varietal strategy of the country.

ORIGIN

It comes from the individual selection made between the line ‘CLN2762-246-7-19’ for its resistance against “New and Old World” begomovirus under natural and controlled infection conditions, and the identification of the gene or genes related to resistance by DNA markers. Seed was expanded by self-fertilization and selection of mother plants that kept their cultivar purity. Evaluation was made in farms from the western region of the country for four seasons, showing good performance in different localities.

CULTIVAR DESCRIPTION

It is an early cultivar (<90 days of germination-ripening) with determinate growth habit. The plants have six to eight fruits per cluster, with an average mass surpassing 100 grams and a total of 30 to 40 fruits per plant. Its fruits are deep red with uniform ripening and sharp-pointed base,

heart-shaped, usually trilobulated with thick pericarp. Average fruiting is over 90 % and potential yields are superior to 40 t ha⁻¹ for the optimal crop seeding season. This cultivar is intended for fresh consumption and industry, with sweet taste to palate (26, 13 % acidity and 5° brix, total soluble solids). It is immune to TYLCV-IL[CU], which has been proved under controlled conditions (inoculation with *Bemisia tabaci* and transformed *Agrobacterium tumefaciens*). This makes the application of chemical pesticides to control insect vector unnecessary. Its immune performance is given by the resistance gene *Ty-2* (tested by SCAR marker, T0302). In turn, it was found that this cultivar is resistant to bipartite begomovirus ToYSV and ToSRV from Brazil under controlled conditions (biobalistically) and by free choice of the vector insect (in the field), which confers broad resistance to these pathogens. Also, this cultivar shows field tolerance to major fungal diseases.



Author's photograph

Tomato fruits
cv. Mariana

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