



Mariscal LP-32: A new short-cycle rice cultivar for multiple harvests

Mariscal LP-32: Nuevo cultivar de arroz de ciclo-corto para múltiples cosechas

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ABSTRACT: At “Los Palacios” Basic Scientific-Technological Unit (UCTB, according its acronyms in Spanish) a new rice cultivar was developed through hybridization. It is characterized by its erect growth habit, late senescence and a short cycle. Its precocity offers significant advantages in intensive production systems and under variable climatic conditions. This cultivar has been validated in smallholder farming areas and in Cultivar Gardens for participatory varietal selection.

Key words: cereal, plant breeding, traditional methods, new genotype.

RESUMEN: En la Unidad Científico Tecnológica de Base (UCTB) “Los Palacios” se obtuvo, mediante la hibridación de los progenitores Perla de Cuba e INCA LP-5, un nuevo cultivar de arroz que se caracteriza por tener porte erecto, senescencia tardía y ciclo corto. Su precocidad ofrece ventajas significativas en sistemas productivos intensivos y en condiciones climáticas variables. El cultivar ha sido validado en áreas de pequeños productores y en jardines de cultivares para selección participativa.

Palabras clave: cereal, mejora genética vegetal, métodos tradicionales de mejoramiento, nuevo genotipo.

INTRODUCTION

Rice production faces multiple challenges that limit its yield and sustainability, in a context increasingly influenced by climate change. Cuba is committed to increasing the production of this grain, a goal to which the Rice Breeding Program contributes through the development of new cultivars. The National Institute of Agricultural Sciences has released more than 30 cultivars, four of which currently occupy more than 40 % of the country's planting area, and three are short-cycle varieties.

Breeders are actively working on the development of short-cycle cultivars, considering that these allow for reduced water and fertilizer consumption, provide greater resilience to extreme climatic events, and, being earlier, decrease the time of exposure to pests and diseases. In addition, they facilitate the possibility of achieving two or more harvests per year, which improves profitability and food security in tropical regions.

The objective of this report is to present the characteristics of a new short-cycle cultivar obtained in Cuba through hybridizations, named Mariscal LP-32.

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ORIGIN AND DESCRIPTION

The short-cycle cultivar Mariscal LP-32 was developed at the Basic Scientific-Technological Unit "Los Palacios" through simple hybridizations of the parental lines Perla de Cuba and INCA LP-5, followed by the application of the Pedigree selection method. After its characterization, it was evaluated in advanced yield trials using a completely randomized design

with three replications, from generation F8 to F10. For characterization, the Standard Evaluation System for Rice of the International Rice Research Institute was employed. Subsequently, it was planted in farms of the Cooperative and Peasant Sector, where it stood out for its earliness, erect plant architecture, and late senescence, combined with good productive performance and tolerance to the main pests affecting the crop. Its use may contribute to increasing annual productivity by enabling two or more harvests per year.

Table 1. Characteristics of the new medium-cycle rice cultivar 'Mariscal LP-32'

Vigor	Vigorous
Growth cycle	Short
Plant architecture	Erect
Plant height (cm)	102 (Semi-dwarf)
Flag leaf length (cm)	27.4
Flag leaf width (cm)	0.94
Flag leaf attitude / Flag leaf posture	Erect
Predominant leaf color	Green
Anthocyanin pigmentation of the leaf	Absent
Leaf senescence	Late
Predominant leaf blade pubescence	Slightly pubescent
Leaf sheath color	Green
Ligule shape	Cleft
Ligule color	Beige
Ligule length (mm)	1.1
Stigma color	Whitish
Lemma and palea pubescence	Pubescent towards the lemma apex
Lemma and palea color	Whitish
Awns	Absent
Panicle type	Intermediate
Panicle exertion	Well exerted
Panicle length (cm)	21.9
Hulled grain length (mm) / Grain length with husk (mm)	11
Hulled grain width (mm) / Grain width with husk (mm)	2.6
1000 hulled grain weight (g) / 1000-grain weight with husk (g)	28.9
Filled grains per panicle	103
Panicles/m ²	401
Potential paddy rice yield (t ha ⁻¹)	Dry season: 7.1, Rainy season: 6.2
Resistant to lodging	Resistant
Resistance to shattering	Difficult
Resistant to <i>Pyricularia grisea</i>	Resistant
Resistant to <i>Tagosodes orizicolus</i>	Resistant



Figure 1. Cultivar 'Mariscal LP-32'