



## Nenita LP-25, new rice cultivar (*Oryza sativa* L.) of short cycle, obtained by hybridizations, for flooded conditions

### Nenita LP-25, nuevo cultivar de arroz (*Oryza sativa* L.) de ciclo corto, obtenido por hibridaciones, para condiciones de aniego

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**ABSTRACT:** In the “Scientific and Technological Base Unit” (UCTB), belonging to the National Institute of Agricultural Sciences (INCA), a new rice cultivar was obtained through hybridizations. Its characteristics include its earliness, compact panicles, high number of grains per panicle and good agricultural yields, combined with tolerance to the main pests. Its behavior has been validated in areas of small producers of Cooperative Sector and in cultivar gardens for participatory varietal selection.

**Key words:** cereals, plant breeding, genotype.

**RESUMEN:** En la Unidad Científico Tecnológica de Base (UCTB) “Los Palacios”, perteneciente al Instituto Nacional de Ciencias Agrícolas (INCA) se obtuvo, mediante hibridaciones, un nuevo cultivar de arroz. Entre sus características destacan la precocidad, las panículas compactas, el alto número de granos por panículas y buenos rendimientos agrícolas, combinado con tolerancia a las principales plagas. Su comportamiento ha sido validado en áreas de pequeños productores del Sector Cooperativo y en Jardines de cultivares para selección participativa.

**Palabras clave:** cereales, mejoramiento de plantas, genotipos.

## INTRODUCTION

Rice is one of the oldest crops, it is known for showing a wide diversity and adaptability to growing conditions, with cultivars spread in different geographical locations and is considered the main cereal crop in the world. In Cuba it is an essential food in the diet; however, its wide demand has to be satisfied in more than two thirds through imports. For this reason, it is necessary to strengthen national production, with the objective of gradually supplying the imported volumes and thus contribute to the nation's food sovereignty. Current challenges require accelerating genetic improvement processes, developing and releasing cultivars that combine high and stable yields with tolerance to biotic and abiotic factors, as well as precocity, since short-cycle cultivars make better use of the planting calendar, require

less fertilizer and consume less water. Since 1986, rice production has been supported by Cuban cultivars obtained by the National Program for Genetic Improvement, to which the National Institute of Agricultural Sciences has made important contributions, since 19 cultivars have been nominated and, of these, 14 are registered in the Official Registry of Cuban Commercial Varieties. Plant breeding work usually lasts several years and revolves around selection, which can be practiced effectively only in the presence of genetic variability. Even there are several breeding techniques, the conventional pedigree method is still widespread, since most of the commercial cultivars currently planted and that have benefited the varietal structure in the country, they were obtained through this technique. Despite the progress achieved, it is necessary to continue working intensively in the search for new

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genotypes to enrich the national germplasm with superior cultivars that possess diverse genetic sources and are capable of adapting to heterogeneous growing conditions. The objective of this report is to present the characteristics of a new short-cycle cultivar with good yields, obtained in Cuba through hybridization.

## DESCRIPTION

The short-cycle cultivar, Nenita LP-25, was obtained at "Los Palacios" Scientific and Technological Base Unit, using simple hybridizations of the Bolito/INCA LP-4 parents and applying the pedigree selection method. The same, after being characterized, was evaluated in superior yield trials,

using a completely randomized design with three replications, from generation F8 to F10. Subsequently, it was planted in farms of the Cooperative and Peasant Sector, standing out for its earliness, compact panicles, high number of grains per panicle and agricultural yields, combined with tolerance to the main pests that affect the crop. It was between the two most selected cultivars by producers and foreign specialists out of the 32 exhibited at the Rice Diversity Fair, held as part of an International Participatory Plant Breeding Course. For the characterization, the methodology of the Standard Evaluation System for Rice, 5<sup>th</sup> Edition (2013), of the International Rice Research Institute was used (Table 1).

**Table 1.** Description of cultivar Nenita LP-25

<b>Vigor</b>	Vigorous
<b>Cycle</b>	Short
<b>Plant height (cm)</b>	87.1
<b>Growth habit</b>	Semi-erect
<b>Tillering ability</b>	Medium (11 sprouts/plant)
<b>Apex color of lemma and palea</b>	Whitish
<b>Lemma and palea pubescence</b>	Partially or totally covered with short hairs
<b>Color of glumes</b>	Whitish
<b>Stigma color</b>	Whitish
<b>Flag leaf attitude</b>	Erect
<b>Predominant leaf lamina villus</b>	Rough, rough to the touch
<b>Leaf lamina length (cm)</b>	38.0
<b>Width of leaf lamina (cm)</b>	1.1
<b>Color of leaf lamina</b>	Green
<b>Corrugation of the leaf lamina</b>	Absent
<b>Shape of ligule</b>	Cleft
<b>Length of ligule (cm)</b>	2.5
<b>Predominant color of ligule</b>	Whitish
<b>Color of auricles</b>	Whitish
<b>Color of leaf sheath</b>	Green
<b>Node color</b>	Light green
<b>Internode color</b>	Yellowish green
<b>Color of subnodal ring</b>	Yellowish green
<b>Stem base color</b>	Whitish
<b>Leaf anthocyanin coloration</b>	Absent
<b>Response to photoperiod</b>	Insensitive
<b>Edges</b>	Short edge and present in less than 50 %
<b>Predominant panicle density</b>	Compact
<b>Panicle spread</b>	Well emerged
<b>Panicle length (cm)</b>	28.0
<b>Filled grains per panicle</b>	157
<b>Mass of 1000 grains (husked) (g)</b>	27.5
<b>Potential yield (paddy rice) (t ha<sup>-1</sup>)</b>	Dry season -7.0/ Rainy season -6.1
<b>Resistance to lodging</b>	Resistant
<b>Resistance to shattering</b>	Intermediate
<b>Resistance to <i>Pyricularia grisea</i></b>	Resistant
<b>Resistance to <i>Tagosodes orizicolus</i></b>	Resistant
<b>Leaf longevity</b>	Late