



## 'INIVIT MC-2019' new cultivar of taro (*Colocasia esculenta* (L.) Schott) for Cuban agriculture

### 'INIVIT MC-2019' nuevo cultivar de malanga isleña (*Colocasia esculenta* (L.) Schott) para la agricultura cubana

 Alay Jiménez-Medina<sup>1\*</sup>,  Yadelys Figueroa-Águila<sup>1</sup>,  Alfredo Morales-Rodríguez<sup>1</sup>

<sup>1</sup>Instituto de Investigaciones de Viandas Tropicales (INIVIT); Apartado 6, Santo Domingo, Villa Clara, CP: 53 000, Cuba. Departamento: Dirección de Fitomejoramiento Genético y Recursos Fitogenéticos.

**ABSTRACT :** A principle followed by plant breeders in the cultivation of taro (*Colocasia esculenta* (L.) Schott) is to obtain new short-cycle cultivars. 'INIVIT MC-2019' is a new cultivar obtained by the classic clonal selection method with high yield potential (38 t ha<sup>-1</sup>), greater earliness and excellent culinary properties. Its corms are large and rhizomes are numerous and of a good size. The quality for consumption meets demands of the palate. In addition, it is a resilient clone and its harvest can begin after seven months of planting. It has shown a good response in different edaphoclimatic conditions of the country and it is well accepted by the Cuban population due to the white color of the mass, an aspect that is preferred in this genus. This clone is being introduced in certain places in the national territory with excellent approval from the producers and its multiplication by agamic means continues.

**Key words:** plant breeders, precocity, selection, rhizomes.

**RESUMEN:** Un principio que siguen los fitomejoradores en el cultivo de la malanga isleña (*Colocasia esculenta* (L.) Schott) es la obtención de nuevos cultivares de ciclo corto. 'INIVIT MC-2019' es un nuevo cultivar obtenido por el método clásico de selección clonal con alto potencial de rendimiento (38 t ha<sup>-1</sup>), mayor precocidad y excelentes propiedades culinarias. Sus cormos son grandes y los rizomas son numerosos y de buen tamaño. La calidad para consumo cumple con las exigencias del paladar. Además, es un clon resiliente y su cosecha puede comenzar a partir de cumplidos los siete meses de plantado. Ha mostrado buena respuesta en diferentes condiciones edafoclimáticas del país y tiene buena aceptación en la población cubana por el color blanco de la masa, aspecto que es preferencial en el género. Este clon se está introduciendo en determinados lugares del territorio nacional, con una excelente aprobación por parte de los productores y se continúa su multiplicación por vía agámica.

**Palabras clave:** fitomejoradores, precocidad, selección, rizomas.

## INTRODUCTION

Currently, the island taro (*Colocasia esculenta* (L.) Schott) is a fundamental link in the human and animal food chain.

This crop is of great importance in Cuba due to its high nutritional value, given the content of nutrients, carbohydrates and proteins present in corms and corms. The rhizomes are easy to cook and highly digestible.

\*Author for correspondence: [alayinivit@gmail.com](mailto:alayinivit@gmail.com)

Received: 02/08/2022

Accepted: 03/11/2022

**Conflict of interest:** The authors declare that they have no conflict of interest.

**Authors' contribution:** **Conceptualization-** Alay Jiménez Medina, Yadelys Figueroa Águila. **Data preservation-** Alay Jiménez Medina, Yadelys Figueroa Águila. **Research-** Alay Jiménez Medina, Yadelys Figueroa Águila, Alfredo Morales Rodríguez. **Methodology-** Alay Jiménez Medina, Yadelys Figueroa Águila. **Resources-** Alay Jiménez Medina, Yadelys Figueroa Águila. **Supervision-** Alfredo Morales Rodríguez. **Visualization-** Alay Jiménez Medina. **Writing - original draft-** Alay Jiménez Medina. **Writing - revision and editing-** Alay Jiménez Medina, Alfredo Morales Rodríguez.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial (BY-NC 4.0). <https://creativecommons.org/licenses/by-nc/4.0/>



There has been an increase in the country in terms of areas under cultivation and production volumes. However, yields remain relatively low, largely due to the lack of agronomic quality seed with phytosanitary certification, as well as the lack of adequate clonal diversification to meet the demands of producers. For this reason, the designs of the INIVIT's genetic breeding program are aimed at obtaining cultivars with high yields and high nutritional value.

It should be noted that the cultivation of taro in Cuba is difficult to improve by hybridization; this is justified because spontaneous mutations rarely appear; the emission of inflorescences is scarce and not very productive; the pollinating agents are not efficient and depend on environmental conditions.

## ORIGIN

From the 'Manu' accession introduced from Fiji Islands, the new cultivar 'INIVIT MC-2019' was obtained by the classical method of clonal selection; it expresses a high yield potential (38 t ha<sup>-1</sup>), has a short cycle and excellent culinary properties. It has shown good response in different soil and climatic conditions of the country and also meets the expectations of preference for consumption in Cuba due to the white color of the mass. This clone produces a higher yield (2 t ha<sup>-1</sup>) after nine months than any other current commercial clone.



Figure 1. 'INIVIT MC-2019' plant

## DESCRIPTION OF THE CULTIVAR 'INIVIT MC-2019'.

*Height of plant: 0.30-0.50 m;*

*Color of rhizome buds (corms): pink;*

*Color of rhizome or corm mass: white;*

*Shape of primary rhizomes or corms: conical;*

*Shape of secondary rhizomes or corms: elongated-conical;*

*Shape and margin of leaf lamina: peeled and entire margin;*

*Color of leaf lamina on upper and lower side: green with slight purplish tints;*

*Color of petiole. Ridge and basal part: green with purplish tints;*

*Tillering: abundant;*

*Harvesting cycle: after seven months;*

*Potential yield: 38 t ha<sup>-1</sup>;*

*Palate: excellent.*

The new cultivar has been extended to selected locations in the country's provinces by means of zonal organic farming:

Santiago de Cuba: Laguna Blanca

Ciego de Avila: Provincial Seed Farm

Matanzas: Colón Municipality: Seed farm.

Artemisa: One producer's farm

Villa Clara: INIVIT



Figure 2. 'INIVIT MC-2019' Corms