



'Fredy', a new garlic genotype introduced in Cuba

'Fredy', un nuevo genotipo de ajo introducido en Cuba

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ABSTRACT: The elephant garlic (*Allium ampeloprasum* L.) was introduced in Cuba, but it is not known who brought it. It is adapted to production and climatic conditions in the western part of the country, between October and February. With low inputs, it is resistant to diseases and reaches yields higher than 24.89 t ha⁻¹ when planting is done mechanized and the "seed" is planted at 0.70 m of row, two rows and 0.07 m between plants, with which it reached between 15.10-15.0 t ha⁻¹. This new garlic species has good post-harvest quality and adaptability in the areas studied.

Key words: *Allium ampeloprasum*, post-harvest, seed, yield.

RESUMEN: El ajo elefante (*Allium ampeloprasum* L.) fue introducido en Cuba, pero no se conoce quién lo introdujo. Se adapta a las condiciones de producción y climatológicas en la zona occidental del país, entre los meses de octubre a febrero. Con bajos insumos, es resistente a enfermedades y alcanza rendimientos superiores a las 24,89 t ha⁻¹ cuando la plantación se realiza de forma mecanizada y la "semilla" se planta a 0,70 m de camellón, a dos hileras y 0,07 m entre plantas, con el que se alcanzó entre 15,10-15,60 t ha⁻¹. Esta nueva especie de ajo, presenta buena calidad postcosecha y adaptabilidad en las zonas estudiadas.

Palabras clave: *Allium ampeloprasum*, postcosecha, semilla, rendimiento.

INTRODUCTION

In Cuba, garlic production is based on Criollo and Vietnamese clones, whose yields range between 4-9 t ha⁻¹, with average values of 6 t ha⁻¹, but bulbs that have been obtained are generally of small size and large number of fine "cloves", whose yields are low when compared with those of other producing countries. This species is of great economic importance, since its demand by the population is growing every day; however, due to difficulties encountered in crop, numerous efforts and research are being made to obtain new cultivars and introduce genotypes that are better adapted to the soil and climatic conditions of the country,

with high productivity and good post-harvest quality of the "seed".

ORIGIN

It is introduced from abroad to the country through the locality "El Mamey", Güines municipality, Mayabeque province in 2016, from there it was disseminated to Batabanó, Güira de Melena and Alquizar, municipalities belonging to the province of Artemisa. It has always been called elephant's foot garlic or simply elephant garlic and it has been selected for the size of the bulb, the "tooth" and its productivity for more than three years.

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GENOTYPE DESCRIPTION

'Fredy' is a genotype that plant presents a much more robust appearance than the Criollo and Vietnamese garlic, in general, with a height of more than 54 cm, it presents 6-12 linear leaves, 1-2 cm wide, flat and drooping; the bulb is large and can reach between 47.0-50.80 mm in equatorial diameter (Figure 1); it is propagated through the "cloves", it presents between 8-10 large "cloves", white-creamy in color and it is the means by which this genotype of elephant garlic is propagated in Cuba. The average monthly temperatures for growth ranged between 24-27 °C (2 °C) and for bulb formation and harvest between 23-25 °C (2 °C). This genotype was not affected by diseases that influence lower productivity and "seed" quality of the genus *Allium*. It can be extremely variable, with different temperature requirements; if temperatures are very low during the vegetative phase (below 20 °C), the number and height of the leaves are affected, and if temperatures are extreme during the night (below 12 °C), the number and size of the "cloves" are affected and consequently the translocation of assimilates from the leaves to the bulb, so the bulb size is affected and, consequently, the yield and quality of the crop are also affected.

Its biological cycle, in other countries (Mexico, Spain, and Argentina) ranges between 180-240 days (6-8 months) and emits a floral scape, which is cut or tied so that nutrients are

concentrated in the bulb. In its cycle it is reduced to 4-5 months [120-150 days] (October-February) and does not emit a floral scape. It presents good agronomic characteristics and has adapted to the production conditions in the different agroecosystems in which it was evaluated, such as: "La Guajira" Farm in Boyeros municipality, Havana province, "La Yerena" Farm, Batabanó municipality, Mayabeque province and "La Rebeca" Farm, Güira de Melena municipality, Artemisa province. This is a genotype that presents genetically stable characters in the localities studied, which are listed below:

- Height of the foliage of the plant (cm): 54-2
- Number of leaves: 9-12
- Bulb mass (g): 44,04-48,42
- Bulb polar diameter (mm): 47,80-50,80
- Polar bulb diameter (mm): 38.00-39.50
- Number of "teeth" per bulb: 8-10
- Mass of the "cloves" (g): 4.7-4.99
- Yield (t ha⁻¹): 24.89-25.0
- Visible symptoms of viral, fungal or bacterial diseases: none observed
- Post-harvest seed quality during storage: very good
- Biological cycle (days): 120-150



Figura 1. 'Fredy' new genotype of elephant garlic (*Allium ampeloprasum* L.) introduced in Cuba.