

SAFOR: SEEDLESS LATE MATURING TRIPLOID MANDARIN VARIETY RESISTANT TO ALTERNARIA FUNGUS

INVENTION DESCRIPTION

Clementines are the most representative and widely cultivated mandarin varieties in the Spanish citrus industry and can be harvested from September until mid February. Markets demand mandarins until the end of April, and therefore some late maturing hybrid mandarins are also cultivated. Both clementines and hybrids produce fruits without seeds if they grow in isolation because they are autoincompatible. However, their pollen and ovules are viable producing fruits with seeds in both groups of varieties if grown in proximity, which causes commercial problems because consumers do not accept seedy fruits. Besides this problem, some of these hybrids are susceptible to Alternaria Brown Spot disease caused by *Alternaria alternata* fungus. This fungus is causing the elimination or top-working of varieties susceptible to Alternaria. As a consequence of this problematic situation, the recovery of mandarin varieties that no produce seeds throughout the marketing season and resistant to Alternaria is an essential objective for the Spanish Citrus Industry. With a view to solve these problems in the Center of Plant Protection and Biotechnology of the Instituto Valenciano de

Investigaciones Agrarias, our group are carrying out a genetic breeding program with the objective to recover mandarin triploid hybrids by biotechnology techniques and marker assisted selection. Multivalent associations are formed during meiosis of citrus triploid hybrids and consequently triploid hybrids produce gametes with different number of chromosomes with very low viability. As a consequence, triploid hybrids display very low fertility, do not produce seeds and do not induce seeds in other varieties by cross-pollination.

Safor mandarin is a triploid hybrid recovered in 1996, resistant to Alternaria and does not induce seeds in other varieties by cross-pollination. Fruits have excellent organoleptic qualities and can be harvested from middle of February to the end of March. This new seedless triploid mandarin allows to substitute late maturing mandarin varieties susceptible to Alternaria and can be cultivated with other mandarin varieties without causing the production of seeds in fruits of such varieties.

BUSINESS SECTORS OF APPLICATION

The use of this new variety of mandarin is focussed to all farmers, cooperatives, citrus nurseries and companies that constitute the national citrus industry dedicated to producing high quality fruits for the fresh fruit market.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- This mandarin variety do not produce seeds and do not induce seeds in other varieties by cross-pollination
- This mandarin variety is resistant to Alternaria Brown Spot disease caused by *Alternaria alternata* fungus
- This mandarin variety produce fruits with excellent organoleptic properties, late maturity season and can be harvested from February to March

ESTADO DE DESARROLLO DE LA VARIEDAD

Tecnología desarrollada a nivel de campo y laboratorio en el Centro de Protección Vegetal y Biotecnología del Instituto Valenciano de Investigaciones Agrarias

Inventors of Safor mandarin: Luis Navarro, Pablo Aleza, José Juárez, José Manuel Julve, José Cuenca y

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Titulo de Obtención Vegetal nº 002573 (Orden AAA/2913/2012. 26 december 2012 of the Ministerio de Agricultura, Alimentación y Medio Ambiente, BOE nº14. 16 january 2013)

European Union Protection: Community Plant Variety Office Grant Number 33912

Countries spread: E.E.U.U., Marruecos, Turquía y Egipto.

United States Plant Patent N° US PP21, 581 P3, 21 december 2010

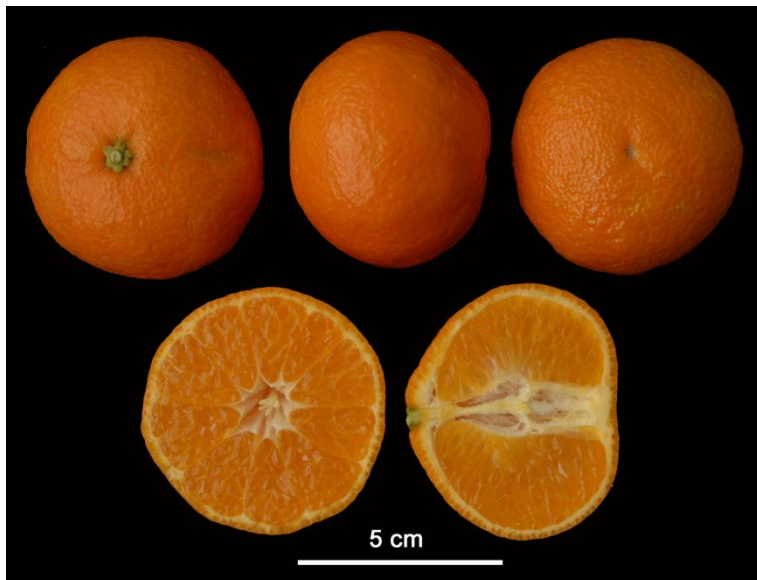
LICENSORS OF VARIETY

Citrus industries that are exploiting the variety: Agrupación de Viveristas de Agrios, S.A. (AVASA), Viveros Alcanar, Viveros Sevilla S.A., Viveros Gurbí, Viveros Gregal, S.L., Cítricos de Almenara, S.L., Viveros Centrals, Beniplant, S.L., Viveros Citroplant, S.L., Vivercitrus 2000, S.L., Viveros Cítricos de Murcia, S.L., Vius Vivers S.A.T., Vivers Sud S.A.T., Plantones Certificados, S.L., Viveros Sancho Hermanos, S.L., Viveros Codoñol, S.L., Plantas de Cítricos Alcanar Natura, S.L., Agrivivers S.A.T., Vivers Sol de Mar CB., Viveros Alcaplant, S.L., Viveros Germans Adell, S.L., Viverfisa Ornamental S.L., Viveros Torreblanca.

FOLLOWED COLABORATION

Citrus industries interested to cultivate the variety.

RELATED PICTURES



Fruit detail

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Tree growth habit

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