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| **Title** | Breeding New Orange Varities Through Mutation From Cara cara navel (Citrus sinensis (L.) Osbeck ) ( TUR020-438 ) Orange Variety |
| **Number** | TAGEM/BBAD/11/A08/P02/ |
| **Leader** | Zeynep ERYILMAZ |
| **Researcher/es** | Serkan AYDIN, Dr. Işılay YILDIRIM, Ali ÖZTOP, Ertuğrul TAŞTEKİN, Prof. Dr. Hamide GÜBBÜK, Dr. Burak KUNTER |
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**Abstract:** Citrus fruit farming is rapidly developing both all around the world and our country. In our country, it is an urgent need to start the programs of selection, hybridization and gene mutation to increase the efficiency, the fruit quality and the profitability in citrus types and subtypes that are appropriate to needs of domestic and foreign markets.

Breeding citrus fruits through traditional methods consume too much time and one of the subtypes of the citrus family that has major breeding problems is the orange. The mutations that result in bud variations are very frequent in citrus fruits. The proportion of types that occur as results of mutations is higher in citrus fruits than other fruits. Nearly all major types of citrus fruits in the world developed from original types through mutations.

Today “artificial mutation” or “mutation breeding” realized through radiation from physical mutagens or through chemical mutagens can easily be applied to various plants and surprising results and new species can be obtained. Recently this type of mutation breeding has begun to be applied to citrus fruits and new species has created. (Russo et al. 1981; Starrantino et al.,1988).

Since present there are few studies on mutation breeding and creation of new species in citrus family have been conducted. No studies on Cara Cara Navel ( TUR020-438 ) orange have been found among mutation studies conducted in our country.

With this Project it is aimed to create species that are peculiar to our country through mutation breeding of Cara Cara Navel (Citrus sinensis (L.) Osbeck ) ( TUR020-438 ) orange. This species will be determined among oranges that are superior with regards to quality and effectiveness and without seeds. Having a peculiar, qualified species that are cultivated in our country will be advantageous in competing with other countries within international orange market.

Keywords: Cara cara orange variety, ,mutation breeding, citrus, red orange gama ray