Citrus: Sensory Quality as Related to Rootstock, Cultivar, Maturity, and Season

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ORIGIN AND HISTORY

An excellent accounting of the origin and history of citrus appears in the classic work The Citrus Industry (Reuther et al. 1967). According to Webber et al. (1967), the various species of the genus Citrus are believed to have originated in the tropical and subtropical regions of Asia and the Malay Archipelago. Sweet orange (Citrus sinensis), the most important of the citrus species worldwide, was grown for centuries in China before it became known to the Europeans about 1400 A.D. The citron, however, has been known to the European civilization since about 310 B.C. No citrus species are indigenous to America, and it was not until 1493 that Columbus on his second voyage brought the first fruit to Haiti in the New World. The first citrus to reach continental America came perhaps when Bernal Diaz in 1518, with other Spaniards led by Grijalva, journeyed to Vera Cruz, Mexico from Cuba. Citrus was most likely introduced into Florida sometime between 1513, when Ponce de Leon first landed in Florida, and 1565, when St. Augustine was established. Some 200 years later, when the first settlers arrived in Florida, wild citrus groves were found in various locales around the state, especially on hammock lands near lakes or rivers, places often frequented by Indians. Most cultivars were sour orange, but apparently there were also some sweet orange, rough lemon, and lime. The writer also has noted many citrus cultivars (most identifia-
ble) in the past two decades prospering in the “outback” of several regions of Florida.

Citrus did not become a product of interstate commerce until the early 1800s when the first oranges were shipped, usually in barrels, to northern cities from Florida locales. Grapefruit did not become available until about the 1880s (Webber et al. 1967).

A cookbook, apparently dating back to the late 1800s, contained the following account of the first grapefruit witnessed and tested for flavor quality by that author: “The fruit stores display a new clear-skinned lemon-colored fruit, about three times as large as an orange, and bearing a general resemblance to that fruit. Its flavor is sub-acid, but its juicy pulp is enclosed in a tough white membrane of intensely bitter taste: when this membrane is removed, the fruit is delicious.” The recipe goes on to indicate ways in which to utilize the fruit (Ravenel 1982). California oranges and lemons most likely were introduced in 1769 with the establishment of the first mission. They were obtained from the mission gardens of lower California where they were first cultivated in the early 1700s. The first orange grove of any size was planted at San Gabriel Mission in 1804 (Webber et al. 1967).

TYPES AND CULTIVARS

Many works with descriptions of various citrus types and cultivars exist in the literature. They vary from simple (Camp 1957; Cooper and Chapot 1977; Krezdon 1979; Lawrence 1965; Redd 1977) to detailed accounts (Hodgson 1967; Hume 1957). In addition there are a number of general descriptions of the more popular cultivars as published by several fresh-fruit shippers located throughout the citrus-producing areas in the United States.

Basically, citrus fruit cultivars may be classified horticulturally in the following manner (Hodgson 1967):

**Oranges.** These are divided into sweet and bitter (sour), the sweet oranges being the most important in commerce, and consist of (1) common orange, of which there are many cultivars, the most important being ‘Hamlin,’ ‘Parson Brown,’ ‘Pera’ (of great importance in Brazil), ‘Pineapple’ and ‘Valencia,’ which is, perhaps, the most important citrus cultivar in the world; (2) sugar or acidless orange having insipid flavor; (3) pigmented or blood orange of considerable importance in Europe; and (4) navel orange (of special importance to California).

**Mandarins.** These are separated into several categories: (1) satsumas [of importance in Japan where it is known as ‘Unshū’ mikan