Quince

Paul M. Chen
Mid-Columbia Agricultural Research and Extension Center
Oregon State University, Hood River, OR

Scientific Name and Introduction: Quince (*Cydonia oblonga* Mill.) is a many-seeded pome, pyriform type of fruit. It is a genus that consists of a single species, native to the warmer regions of southeastern Europe and Asia Minor (Childers, 1949; Westwood, 1978). Few studies have been made of the minor crop (Jankowiak, 1976; Michelesi et al., 1973; Muller and Husistein, 1979). It is used mostly as a dwarfing rootstock for pear, but is also used for preserves, jams and jellies. The main cultivars of quince are Orange, Champion, Pineapple, Angers, Smyrna, Van Deman, Rea and Meech (Childers, 1949; Westwood, 1978). There are about 200 acres grown in the U.S., but it is an important crop of 20,000 tons annual production in Argentina (Westwood, 1978).

Quality characteristics and Criteria: Quince are climacteric fruit (Kader, 1992) and require a proper ripening process at 20 °C (68 ºF) for processing. Properly ripened quince are used chiefly for jellies, marmalades, preserves and to some extent for baking, canning, and adding flavor to other processed fruit products. Much scientific research has centered on the chemical nature of texture and flavor in quince fruit. Literature regarding quality: Andrade et al., 1998; Durmishidze and Gumbaridze, 1972; Guldner and Winterhalter, 1991; Gumbaridze, 1972a; Gumbaridze, 1972b; Iocheva, 1979; Kornatskaia, 1981; Kozenko et al., 1976; Lobachev and Gavrishova, 1982; Lutz and Winterhalter, 1992a; Lutz and Winterhalter, 1992b; Lutz and Winterhalter, 1993; Rozmyslova and Papunov, 1977; Sharova and Illarionova, 1980; Shimizu and Yoshihara, 1977; Strandzhev et al., 1978; Tsuneya et al., 1980;Tsuneya et al., 1983; Umano et al., 1986.

Horticultural Maturity Indices: Quince fruit are harvested at a time similar to most Winter pear cultivars. There is no specific maturity index for quince fruit. Harvest begins when fruit change their ground color from deep-green to a lighter-green (Auchter and Knapp, 1929). Green, immature fruit scalds readily in storage and fruit affected with scab does not store well.

Grades, Sizes and Packaging: There are no official standard grades, sizes or packaging for quince. According to the California Food and Agricultural Code for quality standards, quince fruit should be marketed with: optimum maturity, as well as freedom from insect damage, mechanical damage, and decay (Kader, 1992). Since fruit are rather tender and bruise easily, the shipping barrel (or box) should be lined with soft pads on both ends. The blossom end is turned upwards rather than the stem end (Auchter and Knapp, 1929). Fruit should be handled carefully to avoid mechanical injury.

Optimum Storage Conditions: Optimum storage temperature is -0.5 °C to 0 °C (31 to 32 °F) with about 90% RH. Storage-life in air at -0.5 °C (31 °F) is 2 to 3 mo, similar to early apple cultivars, such as ‘Jonathan’ and ‘Grimes Golden’ (Williams, 1935).

Controlled Atmosphere (CA) Considerations: There is no recommendation for CA storage.

Ripening Conditions and Ethylene Production: The best ripening temperature for quince fruit after storage is 20 °C (68 ºF). Since quince is a climacteric fruit (Kader, 1992), the acceleration of ethylene production during ripening may be expected. However, literature regarding ethylene biosynthesis in quince fruit is not available.

Postharvest Disorders and Pathology: Although the skin of quince has a thick coat of fuzz, the fruit is tender and bruises easily (Auchter and Knapp, 1929). Quince is subject to decays similar to those found on apples and pears (Halsted, 1892; Tafradzhiiski and Angelov, 1977). Treatment with fungicides is necessary to prevent decay during storage and marketing (Pierson et at., 1971).

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