Rhubarb

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Scientific Name and Introduction

Rhubarb, or "pie plant," (*Rheum rhabarbarum* L.) is a perennial of the Polygonaceae family. Fleshy petioles are the edible portion. Petioles may be green, pink, or white depending on the variety. Field production in North America is mainly in Washington, Oregon, Michigan, and Ontario. Rhubarb is forced in heated structures in Washington, Michigan, and Ontario. Fresh rhubarb is mostly available in late winter through spring (Foust and Marshall 1991), but limited supplies are available at other times.

Quality Characteristics and Criteria

Petiole color is associated with quality: The order of preference is red, pink, and green. Petioles should appear fresh with no signs of desiccation or decay whether presented for sale intact or cut into sections.

Grades, Sizes, and Packaging

U.S. grades for field-grown rhubarb include U.S. Fancy, U.S. No. 1, U.S. No. 2, and Unclassified (USDA 1966). Grade is based primarily on petiole color, frequency of defects, and appearance. State and provincial grades have been developed for forced rhubarb. For example, Washington rhubarb is marketed as Fancy and Extra Fancy (McGregor 1987), while Michigan rhubarb is classed as Choice, Small Fancy, or Fancy (Pennell 1976). Rhubarb is packed in 4.5-, 6.8-, or 9.0-kg (10-, 15-, or 20-lb) cartons (Anon 1995).

Precooling Conditions

Rhubarb petioles should be precooled to 0 °C (32 °F) by hydrocooling or forced-air cooling (McGregor 1987).

Optimum Storage Conditions

Rhubarb petioles can be stored for 2 to 4 weeks at 0 °C (32 °F) with 95 to 100% RH (McGregor 1987).

Controlled Atmosphere Considerations

CA storage has not yet been used for rhubarb.

Respiration Rates

Temperature	mg CO_2 kg^{-1} h^{-1}

0 °C	9 to 13
5 °C	11 to 18
10 °C	25
15 °C	31 to 48
20 °C	40 to 57

To get mL CO_2 kg^{-1} h^{-1}, divide the mg kg^{-1} h^{-1} rate by 2.0 at 0 °C (32 °F), 1.9 at 10 °C (50 °F), and 1.8 at 20 °C (68 °F). To calculate heat production, multiply mg kg^{-1} h^{-1} by 220 to get BTU ton^{-1} day^{-1} or by 61 to get kcal $tonne^{-1}$ day^{-1}.

Physiological Disorders

Petioles lacking small leaf lamina are subject to splitting when exposed to moisture. Overmature petioles become pithy. Abrasion of petioles by sand or rough handling adversely affects appearance.

Postharvest Pathology

Several diseases may cause postharvest losses of rhubarb (Snowdon 1992). Anthracnose *(Colletotrichum erumpens)* causes oval, soft, watery lesions on petioles. Bacterial soft rot *(Pseudomonas marginalis, Erwinia caratovra)* causes a soft, slimy decay. Gray mold *(Botrytis cinerea)* causes soft, brown lesions on petioles. Postharvest decay is usually traced to poor sanitation of hydrocooling water, so proper sanitation with recommended storage temperature is essential to avoid infection.

Quarantine Issues

There are no known quarantine issues.

Suitability as Fresh-Cut Product

Suitability has not been evaluated.

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