

Perennial Culinary Herbs

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Scientific Names and Introduction: Perennial culinary herbs include Chives (*Allium schoenoprasum* L.), Chinese chives (*A. tuberosum* Rottler), Marjoram (*Origanum hortensis*), Oregano (*O. vulgare* L.), Peppermint (*Mentha piperita* L.), Spearmint (*M. spicata* L.), Rosemary (*Rosmarinus officinalis* L.), Sage (*Salvia officinalis* L.), Tarragon (*Artemisia dracunculus* L.) and Thyme (*Thymus vulgaris* L.). The leaves are the part primarily used in foods and cooking. Due to their strong flavors and aromas, these culinary herbs are generally used in small quantities.

Quality Characteristics and Criteria: Herbs should appear fresh and green, with no yellowing, decay, insect damage or mechanical damage. Leaves should be uniform in size. Flavor and aroma should be strong and characteristic of the herb.

Horticultural Maturity Indices: Most herbs for fresh culinary use are best if harvested before flowering. Exceptions are marjoram and oregano (sometimes sold with flower buds) and chive blossoms (sometimes used in salads or as edible garnishes).

Grades, Sizes and Packaging: There are no market grades or sizes for fresh herbs. They are bunched and tied with twist-ties or rubber bands, packaged in plastic bags or clamshell containers, and then packed in corrugated cartons. Perforated polyethylene liners should be used.

Pre-cooling Conditions: Should be cooled to just above 0 °C (32 °F) immediately after harvest.

Optimum Storage Conditions: Chives and mints can be stored for 2 to 3 weeks at 0 °C (32 °F) with 95 to 100% RH; Chinese chives last for 1 to 2 weeks. Top icing is sometimes used for mint. Marjoram, oregano and tarragon can be stored at 0 °C (32 °F) with 90 to 95% RH for 1 to 2 weeks; rosemary, sage and thyme for last for 2 to 3 weeks (Cantwell, 1997; Hruschka and Wang, 1979).

Controlled Atmosphere (CA) Considerations: Due to a short postharvest life, CA is generally not used for fresh herbs. MAP has been shown to retard yellowing in chives (Aharoni et al., 1993).

Retail Outlet Display Considerations: Use of water sprinklers is acceptable.

Chilling Sensitivity: These perennial herbs are not chilling sensitive and should be stored as close to 0 °C (32 °F) as possible without freezing.

Ethylene Production and Sensitivity: Ethylene production is low, but sensitivity is high. Low levels of ethylene can result in leaf abscission, epinasty and yellowing. Storage at 0 °C (32 °F) minimizes effects of ethylene on visual quality (Cantwell, 1997; Cantwell and Reid, 1993).

Respiration Rates:

	0 °C	10 °C (mg CO ₂ kg ⁻¹ h ⁻¹)	20 °C
Chives	22	110	540
Chinese chives	54	99	432
Marjoram	28	68	-

Mint	20	76	252
Oregano	22	101	176
Sage	36	103	157
Tarragon	40	99	234
Thyme	38	82	203

To get mL 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 per ton per day or by 61 to get kcal per metric ton per day. Data are from Cantwell and Reid (1993) and Peiris et al. (1997).

Physiological Disorders: Yellowing and leaf abscission may occur due to ethylene exposure, especially if held at ≥ 10 °C (50 °F).

Postharvest Pathology: Molds and bacterial decay may develop, especially on mechanically damaged leaves or cut ends of stems. Mints are subject to rust caused by *Puccinia menthae* Pers., which causes small brown pustules to form on leaves (Snowden, 1992). It is important that low temperatures be maintained during storage and distribution to slow the rate of decay.

Quarantine Issues: None.

Suitability as Fresh-cut Product: Perennial herbs are not currently used in fresh-cut products.

References:

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