Brussels sprouts (*Brassica oleracea*) are members of the Brassicaceae or cabbage family, which includes cauliflower, broccoli, kale, and collards. Originally recorded in 15th century Europe, the plant was primarily cultivated in Belgium's capital city of Brussels. The walnut-sized sprouts were popularized in Europe after World War I and remain a common dish in the United Kingdom and throughout Europe. Traditionally, Brussels sprouts have been less popular in the United States, though this is changing as health conscious Baby Boomers and vegetable-loving millennials drive demand.

Brussels sprouts thrive in cool, humid conditions. Unlike most plants, they attain their best flavor after a minor frost. The tops of stalks are sometimes eaten as greens, but the small ‘cabbage’ heads are the prize. Primary commercial growing is limited to California and New York in the United States, with most imports coming from Mexico and a much smaller amount from Guatemala.

When handled and cooked properly, Brussels sprouts should have a sweet, mild flavor. The bitterness many people associate with the vegetable can come from damage or improper storage.

References: Cornell University, UC Davis Postharvest Technology website, University of Florida/IFAS Extension, University of Illinois Extension, North Carolina State University Cooperative Extension.

### SEASONAL AVAILABILITY

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References: Maryland Dept. of Agriculture, New York State Dept. of Agriculture and Markets, USDA.
TYPES, VARIETIES & CUTS
There is little variation in cuts of the already small and compact Brussels sprout. Various plant types may be separated into hybrids, heirloom, early-maturing, late-season, open-pollinated, and even ornamental. All varieties require about 100 days to mature with a 10- to 20-day variation among them.

“Kalettes” are a colorful Brussels sprouts and kale hybrid, offering a fusion of the two vegetables’ flavor and texture.

References: Cornell University, University of Florida/IFAS Extension.

PESTS & DISEASE
Common pests of concern for Brussels sprouts are cabbage aphids and worms, cabbage root maggots, flea beetles, cutworms, loopers, slugs, harlequin bugs, diamond back moths, thrips, web worms, and nematodes.

Diseases of concern include downy mildew, clubroot, and internal browning.

Injuries from rough postharvest handling can bruise the sprouts and encourage decay.

References: UC Davis Postharvest Technology website, Cornell University, University of Florida/IFAS Extension, North Carolina State University Cooperative Extension.

CULTIVATION, STORAGE & PACKAGING
Preharvest:
Brussels sprouts are a cool weather, full sun crop that may be cultivated from seed or more typically via greenhouse transplant grown 5 to 6 weeks ahead. Plants grow to about 2 to 3 feet high with a 1.5 to 2 foot spread. Foliage is medium green with a bluish cast and mature sprouts are about 1 to 2 inches in diameter. Sprouts grow sideways at the base of each leaf coming from a central stalk, and mature from the bottom of the stalk to the top.

Plants are spaced in rows approximately 3 to 3.5 feet wide and 18 to 24 inches apart within rows for a yield of roughly 7,000 to 12,000 plants per acre. Ideal growing temperature is between 58 to 60°F in moist, well aerated, well drained, medium to heavy soil with a preferred pH in the 6 to 7.5 range. Soil temperature may be as low as 40°F.

Plants require consistent watering and plentiful moisture to thrive. Light to heavy frost is well tolerated and will produce the best flavor—provided temperatures don’t go below freezing. Warm temperatures produce soft, open sprouts instead of the ideal dense bud. Good quality sprouts are bright green and firm with no yellowing or discoloration although slight discoloration on the butt-end is normal.

Plants may be harvested about 100 days after seeding either one sprout at a time multiple times a season, or as a whole cut stalk at season end. The stalk will continue to grow and produce sprouts throughout the season. Sprouts are harvested more frequently in the early warmer part of the season and less often as the weather cools. Commercial plantings can yield up to 2 pounds per plant. Sprouts are picked by hand and placed in baskets, then packaged and refrigerated to avoid rapid deterioration.

Postharvest:
Brussels sprouts can be stored around 32°F for three to five weeks, at 41°F for 10 to 18 days and 50°F for a week or less. Packaging is usually in 25-pound drums, 1-quart baskets, or 12-ounce cellophane bags. Postharvest sprouts are usually cooled (air or hydro) with optimum humidity of 95% or greater. Lower humidity results in wilted leaves due to moisture loss.

Picked Brussels sprouts have high respiration rates and sensitivity to ethylene, which may result in yellow, detached leaves. Sprouts will freeze at just below 31°F resulting in dark, translucent patches. Severely frozen buds are entirely dark and translucent, and become soft when thawed.

References: Cornell University, UC Davis Postharvest Technology website, University of Florida/IFAS Extension, North Carolina State University Cooperative Extension.
GOOD ARRIVAL GUIDELINES

Generally speaking, the percentage of defects shown on a timely government inspection certificate should not exceed the percentage of allowable defects, provided: (1) transportation conditions were normal; (2) the U.S. Department of Agriculture (USDA) or Canadian Food Inspection Agency (CFIA) inspection was timely; and (3) the entire lot was inspected.

<table>
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<tr>
<th>U.S. Grade Standards</th>
<th>Days Since Shipment</th>
<th>% of Defects Allowed</th>
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Canadian good arrival guidelines (unless otherwise noted) are broken down into five parts as follows: maximum percentage of defects, maximum percentage of permanent defects, maximum percentage for any single permanent defect, maximum percentage for any single condition defect, and maximum for decay. Canadian destination guidelines are 15-10-5-10-4.

References: DRC, PACA, USDA.

BRUSSELS SPROUTS: WEEKLY MOVEMENTS & PRICES, USA

Source: Chart by Gallo Torrez Agricultural Price Trends (GTAPT), mgallo@markfinstrat.com, compiled from USDA data.

INSPECTOR’S INSIGHTS

- Size- unless otherwise specified, the diameter of each Brussels sprout shall be not less than one inch, and the length shall be not more than 2.75 inches
- Discolored leaves- score when two or more portions of leaves are affected by yellow, brown, or black discoloration that materially detracts from the appearance
- Insects- slight aphid infestation within the compact portion of the head is scored as a defect when there are more than two aphids present; when aphids affect the outer leaves, they are considered a defect if more than four aphids are present.