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**ATLANTA, GA**



# Apples

## Seasonal Availability

| LOCATION       | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CALIFORNIA     | ●   | ●   | ●   |     |     |     | ●   | ●   | ●   | ●   | ●   | ●   |
| IDAHO          | ●   | ●   | ●   | ●   |     |     |     | ●   | ●   | ●   | ●   | ●   |
| MAINE          | ●   | ●   | ●   | ●   | ●   | ●   | ●   |     | ●   | ●   | ●   | ●   |
| MASSACHUSETTS  | ●   | ●   | ●   | ●   | ●   | ●   | ●   |     | ●   | ●   | ●   | ●   |
| MICHIGAN       | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| NEW HAMPSHIRE  | ●   | ●   | ●   | ●   | ●   | ●   | ●   |     | ●   | ●   | ●   | ●   |
| NEW JERSEY     |     |     |     |     |     |     | ●   | ●   | ●   | ●   | ●   | ●   |
| NEW YORK       | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| NORTH CAROLINA |     |     |     |     |     |     |     | ●   | ●   | ●   |     |     |
| OREGON         | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| PENNSYLVANIA   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| VERMONT        | ●   | ●   | ●   | ●   | ●   | ●   | ●   |     | ●   | ●   | ●   | ●   |
| VIRGINIA       |     |     |     |     |     |     | ●   | ●   | ●   | ●   | ●   |     |
| WASHINGTON     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| ARGENTINA      |     | ●   | ●   | ●   | ●   | ●   |     |     |     |     |     |     |
| CANADA         | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| CHILE          |     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |     |     |     |
| CHINA          |     |     |     |     |     |     | ●   |     |     | ●   |     |     |
| JAPAN          |     | ●   | ●   |     |     |     |     |     |     |     |     |     |
| NEW ZEALAND    |     |     | ●   | ●   | ●   | ●   | ●   | ●   | ●   |     |     |     |
| SOUTH AFRICA   |     |     |     |     |     | ●   | ●   |     |     |     |     |     |

Sources: New York Apple Association, Produce Marketing Association, Rutgers University.

### TYPES & VARIETIES

There are several types of apples. All apples are for fresh consumption, but some varieties are better for making pies and sauces, or pickling and baking. Some of the more familiar varieties are Red Delicious, Granny Smith, Gala, and Golden Delicious, but there are many more. About 100 varieties of apples are grown commercially in 36 states; more than 7,500 varieties are grown worldwide. Apples range in flavor from sweet to very tart, and color depends on the variety.

Red Delicious are juicy, heart-shaped, ruby red apples with a mildly sweet flavor and among the most popular for fresh consumption. Granny Smith apples are green, crisp, tart, and juicy, and good for baking, sauces, juicing, eating raw or for caramel apples. Galas are a pale red, round, and sweet, and are frequently dried or used in cider. Golden Delicious apples are yellow-green, crisp, and sweet; they are excellent for cooking as they maintain their shape well.

Sources: New York Apple Association, Rutgers University, University of Georgia, Washington Apple Commission.



Image: Shutterstock

### CULTIVATION, STORAGE & PACKAGING

#### Preharvest:

Well-drained soil with moderate to high levels of organic matter and ample sunshine is best for growing apple trees. Loamy soils with a pH level of 6.5 are optimal. Soil should be tested two years prior to planting to determine fertilizer and nutrient application levels. At least six months prior to planting, a permanent sod cover should be established to prevent soil compaction and allow for easier equipment movement within the orchard, especially during periods of rain. It is also important to control broadleaf weeds, as they lure bees away from the trees during bloom and can harbor harmful insects.

#### Postharvest:

Preparation of the orchard floor is important before harvesting. Remove brush and tripping hazards, and cut grass short. All orchard roads should be graded to reduce jostling or bouncing during transport.

Apples should not be pulled off of spurs, as this disturbs the tree and typically causes other fruit to fall. If fruit spurs are taken with the fruit, it may reduce the next year's crop potential. If fruit is ready to pick, it will separate easily if rolled or turned upside down on the spur. Fruit should not be jostled or dropped in containers as this will cause bruising. Bins and receptacles should contain only fruit, not leaves or spurs as this can impact quality.

After harvesting, cool apples as soon as possible. Optimal storage temperature is 30 to 32°F with 95% relative humidity. Ripening apples give off ethylene, which can hasten fruit softening.

*Sources: Ontario Ministry of Agriculture, Food and Rural Affairs, Rutgers University, University of Georgia, University of Minnesota Extension.*

### GOOD ARRIVAL GUIDELINES

Good arrival guidelines in the United States permit 15% total damage, 8% serious and 3% decay upon arrival at contract destination after five days in transit.

Good arrival guidelines for product shipped to or within Canada permit 15% total defects, 10% permanent defects, 5% for any single permanent grade defect, 10% for any single condition defect and 4% decay.

Recommended transit temperature for apples is 30 to 32°F.

*Sources: DRC, PACA, USDA.*

### HEALTH & NUTRITION

Apples are high in fiber, a good source of Vitamin C, and have many health benefits, such helping prevent certain types of cancer. They can also help improve memory, reduce blood pressure, and aid in weight loss.

*Sources: Produce Marketing Association, Nutritiondata.com, University of Georgia.*

### DISEASE & PESTS

#### Common Diseases:

*Fire blight* is a bacterial disease spread by insects, wind, and rain. Entire trees are at risk once infected making this disease economically destructive for commercial growers. *Apple scab* is typical in humid, cool weather during the spring and is common in the eastern United States, with the appearance of brown or green mold-like spots on leaves and fruit. *Powdery mildew* coats shoots and leaves with a white powder, stunting growth of shoots and causing leaves to curl.

#### Common Pests:

The *apple maggot* typically strikes in late June to mid-July. Adult maggots lay eggs in the summer inside the fruit. *Apple aphids* appear in May through early July; the most prominent symptom is curling leaves. Shiny black eggs will be visible in early spring. *Leafhoppers* appear end of May or early June. They are white and feeding produces a stippled effect on the leaves.

*Sources: Colorado State University, Rutgers University, University of Idaho, Utah State University.*

### INSPECTOR'S INSIGHTS

- There are minimum color requirements for a few apple varieties (such as Extra Fancy Red Delicious—66% of surface with good red color and Extra Fancy McIntosh—50% of surface with good red color), but there are no color requirements for Gala, Braeburn, Fuji, Pink Lady, or other popular varieties.
- Invisible water core is found internally and is not visible without cutting the apple. Invisible water core is not scored as a defect before February 1 of the year of production, and is never scored as a defect for the U.S. No. 1 or CAT 1 Grades. Invisible water core is never scored as a defect on the Fuji variety.
- Bruising is scored as a defect against the Extra Fancy Grade when the bruise exceeds an area of 5/8" or 1/8" in depth.
- Surface mold, usually found affecting the stem cavity or calyx basin, is never scored as a defect, but mold found internally, within the seed cavity, is scored as a defect.

*Source: Tom Yawman, International Produce Training ([www.ipt.us.com](http://www.ipt.us.com)).*

### MISCELLANEOUS

Pomology is the science of growing apples. Air accounts of 25% of an apple's volume, which is why they will float. A 'peck' of apples weighs 10.5 pounds and a bushel weighs 42 pounds—there are four pecks in a bushel.

*Sources: New York Apple Association, University of Georgia, University of Illinois Extension.*