



## Storage of Fresh Produce

Storing produce at the proper temperature is critical to obtaining the longest shelf-life. Table 1 provides the optimal storage temperature and shelf-life for each commodity. If a crop is stored at higher than ideal temperatures, the shelf-life will be reduced. Similarly, if a crop is stored at a lower than ideal temperature, freezing or chilling injury could compromise the shelf-life.

**Table 1. Fruit and vegetable storage conditions and shelf-life.**

| Crop               | Ideal Storage Temperature (°F) | Shelf-Life at Ideal Storage Temperature |
|--------------------|--------------------------------|---|
| Apples             | 30-40                          | 1-12 months                             |
| Asparagus          | 32-35                          | 2-3 weeks                               |
| Beans, Butter/Lima | 37-41                          | 5-7 days                                |
| Beans, Snap        | 40-45                          | 7-10 days                               |
| Beets, Topped      | 32                             | 4-6 months                              |
| Blackberries       | 31-32                          | 2-3 days                                |
| Blueberries        | 31-32                          | 1-2 weeks                               |
| Boysenberries      | 31-32                          | 2-3 days                                |
| Broccoli           | 32                             | 10-14 days                              |
| Brussels sprouts   | 32                             | 3-5 weeks                               |
| Cabbage            | 32                             | 3-6 weeks                               |
| Cantaloupe         | 32-36                          | 5-14 days                               |
| Carrots, Mature    | 32                             | 7-9 months                              |
| Cauliflower        | 32                             | 3-4 weeks                               |
| Celery             | 32                             | 2-3 months                              |
| Cherries           | 30-31                          | 2-3 weeks                               |
| Collards           | 32                             | 10-14 days                              |
| Corn               | 32                             | 5-8 days                                |
| Cucumbers          | 50-55                          | 10-14 days                              |
| Eggplant           | 46-54                          | 1 week                                  |
| Grapes             | 31-32                          | 2-8 weeks                               |
| Kale               | 32                             | 2-3 weeks                               |
| Lettuce            | 32                             | 2-3 weeks                               |
| Mustard            | 32                             | 10-14 days                              |
| Okra               | 45-50                          | 7-10 days                               |
| Onions, Green      | 32                             | 3-4 weeks                               |
| Onions, White      | 32                             | 1-8 months                              |
| Parsnips           | 32                             | 4-6 months                              |
| Peaches            | 31-32                          | 2-4 weeks                               |
| Pears              | 29-31                          | 2-7 months                              |
| Peas, English      | 32                             | 1-2 weeks                               |
| Peas, Southern     | 40-41                          | 6-8 days                                |
| Peppers, Bell      | 45-55                          | 2-3 weeks                               |
| Plums              | 31-32                          | 2-5 weeks                               |
| Potatoes, Irish    | 40                             | 4-5 months                              |
| Potatoes, Sweet    | 55-60                          | 4-7 months                              |

| Crop             | Ideal Storage Temperature (°F) | Shelf-life at Ideal Storage Temperature |
|------------------|--------------------------------|---|
| Pumpkins         | 50-55                          | 2-3 months                              |
| Radish           | 32                             | 3-4 weeks                               |
| Raspberries      | 31-32                          | 2-3 days                                |
| Rhubarb          | 32                             | 2-4 weeks                               |
| Rutabaga         | 32                             | 4-6 months                              |
| Spinach          | 32                             | 10-14 days                              |
| Squash, Summer   | 41-50                          | 1-2 weeks                               |
| Squash, Winter   | 50-55                          | 2-6 months                              |
| Strawberries     | 32                             | 5-7 days                                |
| Tomatoes, Ripe   | 46-50                          | 4-7 days                                |
| Tomatoes, Cherry | 47-50                          | 4-7 days                                |
| Turnips          | 32                             | 4-5 months                              |
| Watermelon       | 50-60                          | 2-3 weeks                               |

From Hardenburg *et al.*, 1986. The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks. U.S. Department of Agriculture, Agriculture Handbook No. 66 (revised) 130 p.

At times, even when crops have the same ideal storage temperature, they should not be stored together. Some crops (mainly true fruits) produce high levels of ethylene, the ripening hormone. Ethylene can compromise the quality and reduce the shelf-life of crops by causing bitterness, softening, discoloration and stem detachment. Moreover, onions and peppers can impart off-flavors to apples and potatoes, if they are stored together. Commodities also differ in ideal relative humidity conditions. Most fruits and vegetables are composed of more than 80 percent water; therefore, the higher the relative humidity in the air surrounding the commodity during storage, the longer the shelf-life. The ideal relative humidity for the majority of fruits and vegetables is 90-95 percent; however, root crops, like onions and garlic, will be damaged and decay more quickly at high humidity and should be stored at 65-75 percent relative humidity, if possible. Table 2 shows crop storage compatibility.

**Table 2. Storage compatibility.**

| Group 1. Temperature 32-36 °F, Relative Humidity 90-95%                                       |             |                       |                |                |
|---|-------------|-----------------------|----------------|----------------|
| Apples*   | Berries     | Grapes                | Pears*         | Rutabagas      |
| Asian pears*  | Cantaloupe* | Parsnips              | Plums*         | Turnips        |
| Beets, topped   | Cherries    | Peaches*              | Radishes       |                |
| *These items can produce high levels of ethylene that can be detrimental to items in Group 2. |             |                       |                |                |
| Group 2. Temperature 32-36 °F, Relative Humidity 90-95%                                       |             |                       |                |                |
| Beets, topped   | Cabbage     | Cherries              | Greens         | Radishes       |
| Berries   | Carrots     | Corn                  | Lettuce        | Rhubarb        |
| Broccoli  | Cauliflower | Grapes                | Parsnips       | Rutabagas      |
| Brussels sprouts  | Celery      | Onions, Green         | Peas           | Turnips        |
| Group 3. Temperature 32-36 °F, Relative Humidity 65-75%                                       |             |                       |                |                |
| Garlic  | Onions      | Shallots              |                |                |
| Group 4. Temperature 50 °F, Relative Humidity 90-95%  |             |                       |                |                |
| Beans <sup>†</sup>  | Eggplant    | Peppers               | Squash, Summer | Tomatoes, Ripe |
| Cucumbers   | Okra        | Potatoes <sup>†</sup> | Squash, Winter | Watermelon     |
| <sup>†</sup> Fifty degrees is slightly above ideal conditions for these commodities.          |             |                       |                |                |

Adapted from Boyhan *et al.*, 2009. Postharvest Handling and Transportation of Fruits and Vegetables. The University of Georgia Cooperative Extension Fact Sheet 100. 4 p.

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