



Reviewed June 2010

# Cabbage in the Garden

*Dan Drost and Michael Johnson*

## Summary

Cabbage is a cool season vegetable that prefers sunny locations and fertile, well-drained soil. Incorporate plenty of organic matter and a complete fertilizer into the area before planting. Plant seeds  $\frac{1}{4}$ - $\frac{3}{4}$  inch deep, 2-3 weeks before the last frost in the spring. Thin seedlings or transplant cabbage 12-18 inches apart in the row with rows 2-3 feet apart. Avoid fertilization during head formation as this causes excessive leaf growth and head splitting. Irrigation should be deep and infrequent. The use of plastic or organic mulches helps conserve water and reduces weed growth. Control insects and diseases throughout the year. Harvest cabbage when the heads reach full size, but before they split open.



## Recommended Varieties

There are many good cabbage varieties for sale in local gardening outlets and through seed catalogs. Most grow well in Utah. Golden Acre (65 days), Ruby Ball (55 days), Savoy Ace (80 days), and Danish Ball Head (100 days) have excellent production, eating quality, and storage potential

## How to Grow

**Soils:** Cabbage prefers fertile, well-drained soil rich in organic matter for best growth. Most soils in Utah are suitable for cabbage production.

**Soil Preparation:** Before planting, incorporate 2-4 inches of well composted organic matter and apply 4-6 cups of all-purpose fertilizer (16-16-8 or 10-10-10) per 100 square feet.

**Plants:** Cabbage can be grown from seed or transplants. Seeds should be planted  $\frac{1}{4}$ - $\frac{3}{4}$  inch deep and thinned to the final stand when plants have 3-4 true leaves. Plants removed at thinning can be transplanted to adjacent areas. Transplants are used to provide earlier harvest. Transplants should have 4-6 mature leaves and a well developed root system before planting out. Generally 5-6 weeks are required to grow transplants to this size.

**Planting and Spacing:** Seeded or transplanted cabbage should be spaced 12-18 inches between plants in the row and rows 2-3 feet apart. Cabbage grows best when temperatures do not exceed 80°F and is not seriously damaged by temperatures down to 25°F. Transplants should be planted 2-3 weeks before the last frost free date for the growing area. Seeded cabbage may be planted at the same time. For fall maturing

cabbage, select early maturing cultivars and plant 50-75 days before the anticipated maturity date. The maturity date should be about 1-2 weeks after the first fall frost. High temperatures reduce growth, decrease quality, and may cause internal tipburn to form.

**Water:** Water cabbage deeply and infrequently while trying to maintain even soil moisture. About 1-2 inches of water are required per week. Use drip irrigation if possible to conserve water. Applying mulch around the plant also helps conserve soil moisture and reduces weed growth. Moisture fluctuations during heading will cause maturing heads to split open.

**Fertilization:** Apply 1/2 cup per 10 feet of row of a nitrogen-based fertilizer (21-0-0) 4 weeks after transplanting or thinning to encourage plant growth. Avoid applying additional nitrogen after heads begin to form. High nitrogen levels at this time cause loose heads and splitting to occur. Place the fertilizer 6 inches to the side of the plant and irrigate it into the soil.

**Mulches and Row Covers:** Plastic mulches help conserve water, reduce weed growth and allow earlier planting and maturity, especially with transplants. Hot caps and fabric covers are used to protect seedlings and transplants from frosts. Fabric covers also protect young plants from insect pests. Apply organic mulches when temperatures increase. These will cool the soil and reduce water stress. Organic mulches such as grass clippings, straw, and shredded newspaper also help control weeds.

## Problems

**Weeds:** Plastic and organic mulches effectively control weeds. Be sure to control weeds when plants are small and be careful not to damage roots when cultivating.

**Insects and Disease:**

Insect	Identification	Control
Aphids	Green or black soft-bodied insects that feed on underside of leaves. Leaves become crinkled and curled.	Use insecticidal soaps, appropriate insecticides, or strong water stream to dislodge insects.
Cabbage Worms and Loopers	Worms and loopers are light to dark green. Adult loopers are gray or brown moths while cabbage worms are white butterflies. Worms and loopers chew holes in leaves and hide in cabbage heads.	Control worms and loopers with appropriate insecticides or biological measures.
Flea Beetles	Small black beetles that feed on seedlings. Adults chew tiny holes in cotyledons and leaves. Beetles can reduce plant stands or may kill seedlings.	Control beetles with appropriate insecticides at seeding or after seedlings have emerged from the soil.

Disease	Symptom	Control
Alternaria Leaf Spot	Damping off of seedlings. Leaf spots on leaves or heads is a more common symptom. Spots form concentric circles which have a black sooty color.	Apply appropriate fungicide. Avoid overhead irrigation. Practice good sanitation. Rotate crops.

Deficiency	Symptom	Control
Tipburn	Nutrient deficiency which causes breakdown of the leaf tissue near the center of the head. Affected tissue becomes dry and brown or black.	Avoid excess fertilizer and water stress during head development. Keep plants evenly moist during growth.

## Harvest and Storage

Cabbage heads should be harvested when the heads reach full size and are firm and compact. Cut the stem below the head leaving 2-3 wrapper leaves for protection. Cabbage can be stored for 2-6 months at 32°F and 95% relative humidity. Avoid storing cabbage with apples, pears, or other ethylene producing fruits as bitter flavors will develop.

## Productivity

Plant 3-4 cabbages per person for fresh use and additional 5-10 plants for storage, canning or freezing. Expect 150 lbs per 100 feet of row.

## Nutrition

Cabbage has no fat, is low in calories, high in vitamin C, and is a source of fiber, calcium, iron, and folic acid.

## Frequently Asked Questions

***When I harvest my cabbage, I notice that the outside leaves are green and healthy, but when I cut into the cabbage the leaf edges are tan or dark brown. Why is this?*** Tipburn is caused by a calcium deficiency in the younger, internal leaves in the cabbage plant. Most soils in Utah are very high in calcium so plants have access to plenty of this nutrient. However, when plants go through irregular growth periods, calcium is not adequately transported to these younger, inner leaves and this causes the leaf edges to “burn” or turn brown. Uniform irrigation moderate fertilizer additions, and mulches can help prevent this problem.

***How do I prevent head-splitting in mature cabbage?*** Pull the cabbage head up out of the soil in order to break some of the side roots. This will stop excess water from being transported into the head, which causes splitting.

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions.

Utah State University employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities.

This publication is issued in furtherance of Cooperative Extension work. Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Noelle E. Cockett, Vice President for Extension and Agriculture, Utah State University. (HG/Garden/2005-03pr)