



March 2004

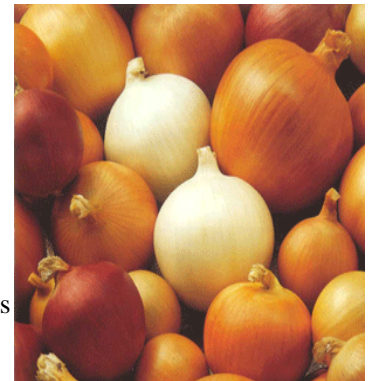
HG/2004-03

# Onions in the Garden

*Dan Drost*, Vegetable Specialist

## Summary

The onion is a cool-season biennial that prefers full sun and fertile, well-drained soils. Incorporate plenty of organic matter and a complete fertilizer into the area before planting. Plant seeds  $\frac{1}{4}$ - $\frac{1}{2}$  inch deep in rows 8-16 inches apart. Seeds, sets or transplants should be 3-4 inches apart in the row. If planted at closer spacing, thin to the suggested spacing and use the pulled plants as green onions. Sidedress onions with nitrogen in May and June to ensure good growth and high yields. Onions require regular watering, so maintain soils near field capacity. Water stress will reduce yields and bulb size. Organic mulches help conserve water, supply extra nutrients and reduce weeding. Control weeds, insects and diseases throughout the year. Harvest onions when the tops have fallen over and papery skins have formed. Bulbs store best in cold, dry conditions to maintain best quality. Excellent varieties include Utah Sweet Spanish, Fiesta, Sweet Sandwich, and Walla Walla..



## Recommended Varieties

Evergreen White Bunching is a good mild green onion. Utah Sweet Spanish, Fiesta, Walla Walla, and Sweet Sandwich are excellent bulb onions. These will store for 2-4 months. Crystal White Wax is a nice pickling onion. Many of these varieties come as seeds, sets or transplants so check for availability with your local garden center or seed catalog.

## How to Grow

**Soils:** Onions will grow in all soil types provided they are rich, well drained, moist, and fertile.

**Soil Preparation:** Before planting, incorporate 4-6 inches of well-composted organic matter and 1-2 lb of all-purpose fertilizer (16-16-8) per 100 square feet. Work compost and fertilizer into the soil to a depth of 6-8 inches.

**Plants:** For early production, use transplants or sets for planting out in late March or early April. Transplants need 6-8 weeks of growth before planting in the garden. Plant onion seeds  $\frac{1}{4}$ - $\frac{1}{2}$  inches deep in late March or early April.

**Planting and Spacing:** After seeds emerge, thin to 3-4 inches apart in rows 8-16 inches apart. Thin before plants compete with each other or they start to bulb. Transplants and sets should be planted at the same final spacing as seeds. Green onions can be left at closer spacing and the plants thinned as they are used. High-density plantings will reduce bulb size unless adequate water and nutrients are supplied. If you plan to store transplants or sets, plant out in late April. Later plantings are less likely to produce seed stalks. Onion seeds can also be planted in mid to late August for overwintering. Overwintered onions should be mulched late in the year to minimize winter damage. Overwintered onions generally mature in June or July.

**Water:** Onions require regular watering throughout growth for best production. Soils need to be maintained near field capacity. Moisten the soil thoroughly to a depth of 18 inches every 7 days. Water needs are critical since rooting depth in onions is shallow. Drought stress during growth will decrease yield, reduce bulb size and affect flavor. Stop watering when the plants start to mature (tops fall over). Excess water as the crop matures delays curing and may cause storage problems.

**Fertilization:** In addition to the fertilizer used at planting, onions need additional nitrogen fertilizer to produce optimum yields. Sidedress onions with  $\frac{1}{2}$  lb of nitrogen fertilizer (21-0-0) per 100 square feet in late May and June. Do not fertilize after mid-July as extra nutrients stimulate late season growth and reduce storage potential of dry onions.

**Mulches:** Organic mulches help conserve water, supply extra nutrients and reduce weeding. Mulches are also used for overwintered onions to minimized winter damage.

## PROBLEMS

**Weeds:** Control weeds through regular shallow cultivation to avoid root damage that slows plant growth by damaging shallow roots. Weed control is particularly important during the first 2 months of growth when plants are growing slowly and compete poorly. Mulching with compost, grass clippings or leaves will smother weeds.

### Insects and Diseases:

Insect	Identification	Control
Thrips	Tiny, slender insects that feed on leaves. Leaves turn silver or gray, may twist and die. Thrips hide near where the leaf and bulb meet.	Spray with registered chemicals
Onion Maggot	White worm that feeds on seedlings, roots or bulbs.	Apply diazinon granules at planting.
Disease	Symptom	Control
Neck Rot	Fungal disease that occurs during storage. Watery decay inside the bulb..	Avoid excess moisture near harvest. Cure bulbs well before storing.
Basal Rot	Fungal disease that attacks the area where roots and leaves join. The area rots and plant growth is slow and weak.	Use 5-year crop rotation. Solarize the soil where onions are to be planted. Avoid over-watering.
Pink Root	Fungal disease that changes roots to a pink color. Roots eventually die and yields are severely reduced	Use 5-year crop rotation. Solarize the soil where garlic is to be planted.

## Harvest and Storage

Onions vary in their maturity times. Green onions may be harvest as early as 50 days after seeding. Bulb onions generally require 100-120 days to mature. Leave bulb onions in the ground until the tops fall over. Once the tops fall over, lift the bulbs but leave them in the garden to dry for 2-3 weeks. The tops will help protect the bulbs from the sun. When fully cured the onion skin should be papery and the roots dry. Mature bulbs may be braided into onion ropes or stored in open meshed sacks. Cut off the leaves about 1-2 inches above the bulb. Onions store best in cold (32-40F), dry conditions. Check regularly and use bulbs that are softening or sprouting first.

## Productivity

One set, transplant, or seed will yield one onion. Plant 15-25 feet of row per person.

## Nutrition

One cup of raw chopped onions is very low in saturated fat, cholesterol and sodium. It is also a good source of dietary fiber, Vitamin B6 and Folate, and a very good source of Vitamin C.

## Frequently Asked Questions

- **Why can't I get my onions to form a bulb?** Onions form bulbs under long days and hot weather. If planted in June, most will grow leaves and never form a bulb.
- **Is it best to plant onion seeds, onion transplants or onion sets in the garden?** Onion sets are easiest to handle and develop quickly for green onions as well as onions for winter storage. Onion transplants are slower to develop but also produce good crops. Seeds for onions must be planted early in the garden and thinned after they emerge. The thinned plants are suitable for green onions the remaining plants will produce bulbs for storage in September.
- **Is there any way to prevent onions from going to seed?** Plant onion sets of bulbs no larger than 5/8 inch in diameter. Larger bulbs have a greater tendency to bolt in the garden.

---

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, Jack M. Payne, Vice President and Director, Cooperative Extension Service, Utah State University.