

# Growing Vine Crops in Minnesota

COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES

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Cucumbers, muskmelons, watermelons, pumpkins, and squash are among the most popular vine crops in the garden. Many of the vine crops, or cucurbits, are eaten as vegetables, but they are botanically fruits. They thrive best in hot weather, and all have similar cultural requirements.

Vine crops “run” on the ground and take up a lot of space. In small gardens they may be trained to a trellis, or bush-type varieties may be used.

## Preparing the Soil and Fertilizing

Muskmelons and watermelons prefer a sandy loam soil that warms up early in the spring. Other vine crops do well in heavier soils, although more fruit belly rot may occur. The soil should be well drained and moisture retentive. Before adding any compost, manure, or fertilizer, a representative soil test should be taken. Refer to BU-1731, *Soil Test Interpretations and Fertilizer Management for Lawns, Turf, Gardens, and Landscape Plants*, available through your local University of Minnesota Extension Service office. Have your soil tested before adding fertilizer. Without a test, it is impossible to know how much or which type of fertilizer to apply. Excessive amounts of nutrients, especially phosphorus, can pollute our lakes, streams, and rivers.

Continuous use of high phosphorus fertilizer such as 10-10-10 or 15-30-15 results in phosphorus buildup in the soil. If your soil tests high in phosphorus, use a low phosphorus (such as 32-3-10, 27-3-3, or 25-3-12) or no phosphorus (such as 30-0-10 or 24-0-15) fertilizer at the rate of 1/2 pound (1 cup) per 100 square feet. You can also improve both heavy clay soils and lighter sandy soils by adding organic matter. Addition of manure or compost is beneficial for vine crops and improves soil structure. Plow or till well-rotted manure and fertilizer, into the soil before planting.

In midseason you should apply a side dressing of nitrogen fertilizer such as 1/2 cup 46-0-0 or 1 cup

27-3-3 for each 25 feet of row. If you use manure or compost, additional fertilizer applications may be reduced or eliminated, depending on how much organic matter you apply. Do not use “Weed and Feed” type fertilizers on vegetables. They contain weed killers that will kill vegetable plants.

The optimum pH range for vine crops is between 6 and 6.5. Liming will raise the pH of acid soils. Use a soil test to determine if any special fertilization or liming is required. Refer to publication BU-1731 for more specific information.

Vine crops can be seeded directly in the garden. Plant cucumbers May 10. Space them at least 12 inches apart. Plant the other vine crops May 20. Space muskmelon and watermelon plants 24 inches apart. Space pumpkin and squash 24-36 inches apart; use the closer spacing if the variety is a “bush” type. Spacing between rows should be 5-6 feet apart.

If you wish you may start the vine crops indoors in peat pots and transplant them to the garden on the above dates. Use a separate container (or cell in a seedling tray) for each seed to prevent damage to the roots when transplanting. **Do not** start the seeds too early. Tall, overgrown plants will not do well after they are transplanted. Many seed companies suggest planting in hills. This means to plant five or six seeds in a clump. After emergence, thin back leaving the one or two strongest seedlings.

In general, you can plant outside one week earlier or later for each 100 miles south or north of Minneapolis-St. Paul.

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## Watering

Proper watering will enhance good production. Vine crops need at least 1 inch of water from rainfall or irrigation each week during the growing season. Always soak the soil thoroughly when watering. There is little or no value in a light watering that only wets the surface of the soil. On most soils, watering once a week is sufficient. Sandy soils should be watered more frequently but with lower amounts applied at any one time.

## Controlling Weeds

Frequent shallow cultivation will kill weeds before they become a problem. The roots of the vine crops are close to the surface of the soil, so it is important not to cultivate too deeply or too close to the plants. Cultivate just deep enough to cut the weeds off below the surface of the soil. Continue cultivating as long as you can do so without injuring the vines, usually when the vines begin to spread between the rows. When cultivation is no longer possible, pull the large weeds by hand.

## Harvesting

Pick cucumbers and summer squash when they reach a usable size. If very large cucumbers are left on the vine, the plant yield will decline.

Harvest often, but be careful not to disturb the vine. Do not pick fruit when the vines are wet, because of the danger of spreading diseases.

Pick winter squash and pumpkins before a hard freeze. A light frost that kills the vine will usually not harm the fruit.

Harvest muskmelon when the fruit changes color; separate from the vine with a slight twist. Do not wait for the melons to separate from the vine on their own. Harvest watermelon when the underside of the fruit is greenish-yellow, the surface color of the fruit becomes dull, and the early tendrils (which look like curly strings) near the fruit on the stem dry and turn brown.

## Common Problems/Observations

Poor fruit set, especially in cucumber, could be due to improper pollination. Pollination may be hindered by cold rain and cloudy weather. Tasteless melons could be due to dark, cloudy weather, or disease.

Many varieties have separate sexes in flowers. This characteristic is referred to as a Monoecious flowering habit. Blossom drop of male flowers is, to some extent, normal because only the female flowers produce fruit, which can be identified by the swollen ovary at the base of the flower.

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