H16 (Revised April 2023)

Strawberries

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Strawberries are one of the most prized fruits grown in North Dakota gardens. This publication will serve as a guide to home production.

Types and Cultivars

Three types of strawberries are grown in North Dakota. June-bearing cultivars are the most common and produce their entire crop between mid-June and mid-July. Everbearing strawberries produce a crop in late June and early July, with a second, lighter crop starting in late summer and continuing as long as weather conditions are favorable. The third type, day-neutral strawberries, produces berries from July until the first hard freeze because the plants continuously produce flower buds. However, temperatures in excess of 85 degrees Fahrenheit will inhibit flower bud production and reduce yield.

Unlike the first two types, day-neutral strawberries are grown as annuals. They are well-suited for growing in containers or under protected environments such as high tunnels or low tunnels.

Many cultivars of strawberries are available on the market, but not all are hardy under North Dakota growing conditions.

The following June-bearing cultivars are recommended:

- **AC Wendy** – This is the earliest of the June-bearing cultivars and produces large fruits.
- **Annapolis** – This is an early cultivar that is pale red and has good yield.
- **Honeoye** – This is a vigorous producer of good-flavored fruit. It is excellent for fresh or preserving purposes.
- **Glooscap** – It is productive and produces medium fruits that are excellent for processing because the cap separates easily.
- **Cavendish** – This cultivar is a mid-season producer with large, firm berries and good disease resistance.
- **Mesabi** – This midseason cultivar has good disease resistance and excellent flavor.
- **Sparkle** – It is a late-season cultivar with smaller fruits.

The following everbearing cultivars are recommended for general planting:

- **Ft. Laramie** – This all-season everbearing cultivar produces many runners. Plants are very cold hardy. Fruits are sweet-tasting with exceptional aroma.
- **Ogallala** – This is a productive cultivar that has become popular with home gardeners. The berries are large and of good quality.

The following day-neutral cultivars are recommended for container production or in tunnels:

- **Seascape** – This is a cultivar that produces large berries with a firm texture.
- **Albion** – It is commonly grown in low tunnel production and has an exceptional sweet flavor.

Culture

Watering – Normal rainfall in North Dakota is not quite enough for highest yields. Strawberries usually need irrigation. Drip irrigation is better than sprinklers for avoiding foliar diseases.

Site and soil – The site for a strawberry planting should be well-drained and preferably on loamy soil. However, satisfactory crops may be produced on heavy clay or light sandy soils if amended with organic matter. Full sun exposure is best. Remove or eradicate all weeds before planting.

Composted manure is a good organic fertilizer for strawberries, but the manure should be applied in the fall because of food safety concerns.

Commercial fertilizers may be used and are best applied in the spring.

Time to plant – The best time to plant strawberries usually is in early spring **(Figure 1)**. However, they may be planted in late summer (before Aug. 15), provided enough soil moisture is available to establish the plants before winter. Applying mulch for winter protection is especially important for late-summer planted strawberries.

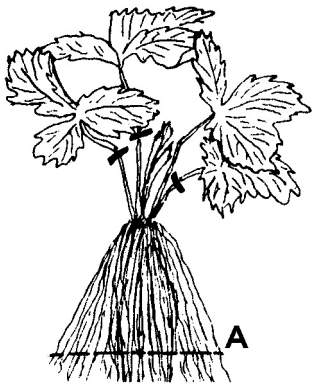


Figure 1. Prune plants just before they are set out. (A) Remove dead leaves and any flowers.

Planting stock – Use only vigorous, young plants when starting a new patch. Young plants can be distinguished from old ones by their light-colored roots. Old strawberry plantings may be diseased; therefore, buying new, healthy plants from a reputable dealer is highly recommended. Proper depth of planting is important as shown in **Figure 2**. Water plants after setting.

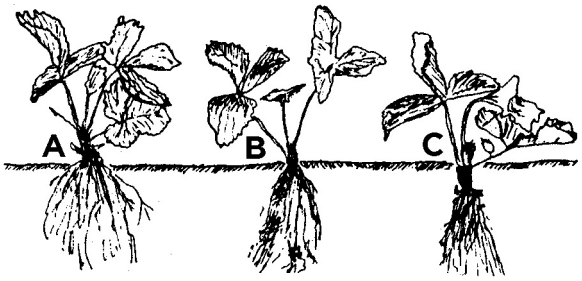
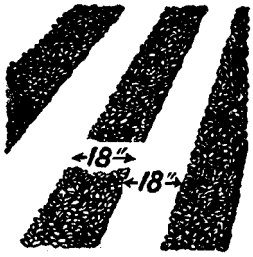


Figure 2. Strawberry plants should be set carefully at the proper depth. (A) Too shallow (B) Correct (C) Too deep.

Planting Systems

The matted-row system is used most commonly for June-bearing strawberries. Rows are spaced 3 to 4 feet apart and plants are set 18 to 30 inches apart in the row. Allow runners to form a mat 15 to 18 inches wide, with plants 4 to 6 inches apart. Early runners should be allowed to root while later ones should be removed. Many home gardeners allow the plants to grow too close together; this results in small and inferior berries.



The hill system sometimes is used to obtain large berries of exceptional quality. It requires more hand work than the matted-row system. Space double rows 2 to 3 feet apart, with plants 12 to 15 inches apart in the rows. Remove the runners as they appear.

Remove blooms – With spring-planted everbearing and day-neutral cultivars, keep the blossoms removed until July 1, then allow them to bloom and produce a crop. The production of fruit on newly set plants restricts vegetative growth and results in poor yields. Do not allow June-bearing plants to produce a crop the same season as planted to allow the plants to establish.

Weed control – Hand hoeing and shallow cultivation are necessary for weed control. Chemical weed control has been successful in strawberries. Be sure to follow directions for time and rate of application for approved chemicals.

Winter Protection: Mulching

When the ground is frozen in the fall, cover your strawberries with a 4-inch layer of clean straw. Soybean straw is very satisfactory. It is frequently free of weed seeds and it is not inclined to pack down. Do not depend on snow for winter protection.

When the plants begin growth in the spring, remove the mulch. Allow part of the mulch to remain between the rows to help keep down weeds and also to conserve moisture. A mulch under the berries keeps them from becoming soiled.

Under ordinary conditions, you should not expect your strawberry bed to bear more than two seasons in succession due to insect, disease and weed problems.

Start new beds from the old (as long as your planting is healthy), using only young plants. Bed renovation should not be attempted unless the plants are vigorous and relatively free from weeds, insects and diseases.

Bed renovation is accomplished in the matted-row system by narrowing the rows with a cultivator or hoe to a strip 8 to 10 inches wide.

Thin the plants, leaving only the most healthy and vigorous. Then proceed as with a new planting. You may want to purchase healthy, disease-free plants instead of renovating an old bed because plants may be infected with viruses.

Diseases and Insects

Strawberry diseases are not a serious problem in North Dakota. Winter injury may be confused with or complicated by certain types of root diseases. However, adequate mulch protection and moisture with good surface drainage usually prevent these troubles.

Viruses are responsible for reducing yields. Destroy any bed suspected of having a virus infection and make a new planting with healthy stock.

In most plantings, preventative measures are more effective than spraying for control of strawberry diseases. Sanitary measures such as mowing and burning leaves after berry harvest, clean tillage, and removal of weeds and rubbish bordering the planting, coupled with the use of healthy planting stock and short rotations, are practical things you can do to prevent disease problems in your strawberry bed.

An invasive insect called spotted wing drosophila is a pest in North Dakota strawberries. Everbearing strawberries are at more risk of infestation because spotted wing drosophila populations peak in late summer. Refer to publication E1715, "Integrated Pest Management of Spotted Wing Drosophila in North Dakota," for information on insect identification and treatment options.

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