

# Mulching Strawberries For Winter Protection

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The strawberry is one of the more important home and market garden crops in North Dakota. Its scope is universal as far as the home garden is concerned while the market garden crop is most highly developed around the larger towns of the state.

The strawberry is a hardy plant and if given the correct care will produce a crop almost every year. One of the most serious problems in production is the late spring frost that will kill the blossoms. A situation of this kind occurred in 1955 when a temperature of 22 degrees was observed on May 8. In our northern area we can expect an occasional early frost of this nature.

There is, however, a means of protection that will enable the grower to help control some of the detrimental effects of the winter season on strawberry plants. Even if the strawberry is planted in sheltered areas, an artificial covering will be beneficial in reducing winter injury. This covering is known as a mulch.

What are some of the injuries to the strawberry that can occur during the winter and early spring season? Three conditions are mainly responsible for winter injury to strawberries.

1. Exposure to winds and low temperatures during the winter.
  2. Alternate freezing and thawing during the early spring months.
  3. Destruction of plants and/or flowers by late spring frosts.
- Any one of the above conditions or combinations of any or all can cause injury to the crop with a consequent reduction in yield.

How do these factors operate to injure the plants? The first factor, exposure of the plant tissues to low temperatures, can cause injury. The buds for the coming season are formed during the previous August and September and these can be destroyed by exceptionally cold temperatures. Wind will damage the unprotected plant by causing excessive moisture loss. In a climate like ours where winter winds are common, this type of loss can be excessive.

Survival through the cold winter months does not always indicate that a crop is made. The period in the early spring when alternate freezing and thawing takes place can be very harmful to the strawberry crop. This alternate freezing and thawing may cause the plants to "heave." That is, because of the contraction of the soil surface caused by these alternate freezes and thaws, the plants are moved upward from their original setting. This causes exposure of the vital crown parts and the roots. Here these plant parts can be injured severely or killed by exposure to the elements, the cool temperature, drying winds or hot sun.

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As mentioned earlier, survival past the thaw period does not always indicate a prospective crop. Even though the strawberry plant is tolerant to a certain degree of frost, the flower is not, and freezing temperatures will kill the flowers and buds, with the result that the crop will be reduced.

Winter protection by mulching the plants will aid in reducing the above conditions that are harmful to strawberry plants and production. Strawberries should be mulched soon after winter sets in. It is best to attempt to get them covered before snow falls, because it is not uncommon to have severe open weather in the late fall before snow arrives. It is at this time that wind and water loss damage can occur. Mulch is best applied after the first solid freeze-up. The subsequent snowfall will help hold the mulch in place. Often snow comes before the mulch can be applied, in that case it can be applied over the snow covered strawberry rows.

The mulch cover will protect the plants from the alternate freezing and thawing period in the spring, by acting as insulation. It will keep the covered area at a more constant temperature and the thawing out will be more gradual.

The gradual thawing of the soil in the spring will tend to make the plant delay growing for as much as 10 days to 2 weeks. The strawberry plant will not start growth until the temperatures are a few degrees above freezing. This means that blossoming will be later also. Consequently, this delay may make the difference between no crop and a poor one, or a poor and a good crop, because of the avoidance of occasional late frosts.

A number of materials can be used as mulches, but the most common are hay and straw. Leaves, sawdust and ground corncobs will pack and tend to smother the crop, however these materials can be used between the rows. Clean straw from grain or soybeans is perhaps the best because it eliminates the weed problem that can occur with hay or weedy straw. The mulch should be applied to a depth of 5 or 6 inches, preferably before snow arrives. One disadvantage of having to apply mulches before snow arrives is that the mulch may harbor rodents. Firming the mulch at the time of application will help hold it in place until snow cover.

The mulch should be removed from the strawberries in the spring as soon as the plants begin to show indications of growth. If left on too long after growth starts the strawberry plants can be killed or injured. The mulch can either be removed from the area or it can be placed between the rows. The latter arrangement is perhaps better since it will tend to conserve the moisture in the soil. It also tends to control early growth of weeds between the rows and helps to keep the berries clean, since splashing of soil by rains is reduced. In most seasons the mulch need not be removed before the last of April. However, this period can vary depending on the earliness or lateness of the individual season.