

Important Physiological Disorders of Cauliflower and their Management

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Introduction:

Cauliflower (*Brassica oleracea* var. *botrytis*) is the most popular vegetables among cole crops. The edible part is called curd. Curd colour varies with the variety and environment. It may be white, creamy white, yellow, green or red. It is extensively grown in Bihar, Uttar Pradesh, Orissa, West Bengal, Assam, Haryana, and Maharastra. It is rich source of vitamins and minerals like Vit. A and C, potassium, magnesium, sodium, calcium etc.



Various physiological disorders occur in cauliflower which may be due to genetically, environmental, organic and

inorganic nutritional imbalance. Cauliflower is sensitive to a number of disorders which reduce the quality and yield of the produce. Being a thermo-sensitive crop with the temperature fluctuation disorder will found in a crop and finally yield of the crop will reduces. The major disorder of cauliflower are blindness, leafiness or bracting, pinking, multiple curds, browning, whip tail,

1. Browning:

Causes:

Browning is caused due to boron deficiency.

Symptoms:

Sometimes during the reproductive stage, developing heads begin to discolor, a phenomenon called browning. A deficiency may cause a progression of issues beginning with saturated stems and florets, followed by discoloration, deformation, and bitter flavor.

The water soaked in early stages. Areas occur on surface of stem and curd. In advanced deficiency stage, brown or pinkish colored

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Areas are seen on curd surfaces, and are thus often referred to as brown red or red rot or the curd browning. In the young stage of the plant itself the growing point may die.



Control:

Boron deficiency may be corrected through the application of borax. The amount of borax depends on the type of soil, the pH of soil and the extent of the deficiency. 10-15 kg borax / ha is sufficient in acid soil, also while greater quantities may be required as natural and alkaline soils.

2. Whiptail:

Causes:

The whiptail disorder is caused by a molybdenum deficiency.

Symptoms:

Chlorosis of the leaf margins are the deficiency symptoms in young plants, and the entire leaves may turn white. The blades on the leaf are not developing properly. Only midribs develop when the deficiency is serious. This disorder is usually referred to as 'Whiptail.'

The plant's growing point is also deformed which impedes curd growth.



Control:

Application of the lime in acidic soils is done to increase molybdenum availability. The amount of lime is determined by measuring the soil's pH in the first place. Alternatively, Sodium Molybdate application of soil (10-15 kg / ha) effectively controls the symptoms of the deficiency.

3. Buttoning:

Causes:

Buttoning can also be caused by insufficient water, a shortage of nitrogen, excessive salt, or weed competition. This disorder is mainly caused due to the deficiency of nitrogen and transplanting of aged seedling leads to buttoning.

Symptoms:

Known as buttoning is the development of small premature curds or buttons while the plants are young. The button heads are exposed, and typically thin, poorly formed leaves are present in the plants that display this

condition. Several factors such as poor supply of nitrogen, implanting of overage plantlets, harsh climatic situations and unsuitable planting time are stated to cause buttoning.

Symptoms:

When a cauliflower fails to produce a head, the condition is sometimes referred to as “blind” or “blind bud.” Blindness in



Control:

Adequate supply of nitrogen and moisture for rapid vegetative growth of plant is considered important for preventing the occurrence of button plants. Growers are advised not to plant older seedlings. It is also necessary to delay planting until weather conditions are favourable for plant growth.

cauliflower is characterized by plants without the terminal buds and large, dark green, thick and leathery foliage. Axillary buds develop in some cases, but plants do not bear marketable heads.

4. Blindness:

Causes:

This disorder is very common on overwintered plants and one of the causes is believed to be due to the effect of low temperature on the small growing plants. One reason this happens is because there are genetic deficiencies in the seed itself. Another may be physical damage to the central growing point by disease, animals, insects, or people working near the plants.



Control:

To avoid the occurrence of blindness, select good quality seed that is not known to have this tendency. Careful handling of the plants. Exposure of the plant to low temperature should be avoided.

5. Hollow Stem:

Causes:

Hollow stem can also be caused by Boron deficiency.

Symptoms:

In heavy soils, particularly with nitrogen, rapidly growing plants may develop hollow stem. Curling and rolling of the leaves, deformed foliage, brown curds or brown flower bud and hollow stem centers are the main symptoms of the hollow stem. Boron deficiency is the main culprit of the disorder.



Control:

It can be controlled by providing close spacing and proper use of nitrogenous fertilizers.

6. Leafiness:

Causes:

It is occurred due to high temperature.

Symptoms:

Small thin leaves from curds are formed which reduces their marketability. Very lesser green leaves usually appear among the curd section because of heritable or inheritable factors. The occurrence of high

temperatures during curding phase is said to aggravate leafiness.



Control:

This disorder can be controlled to a great extent by selecting varieties according to their adaptability.

