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LECTURE -14

PHYSIOLOGICAL DISORDERS OF FLOWERING PLANTS



Physiological Disorders of Rose

❖ Bent neck

It is characterized by the bending of stems of cut rose flowers after harvesting and is an important factor in determining post harvest quality.

Reasons

- Too soft growth
- pre-matured bud harvest
- Exposure to high temperature.
- Low humidity
- High microbial growth





Remedies

- The flowers exhibiting bent neck or pre matured cutting should be recut under water and submerged in hot water for few hours.
- Use of 200 ppm cobalt nitrate along with 10% sucrose in floral preservatives .
- Growing resistant varieties such as First Red and Saphir.
- Fumigation with methyl bromide reduce the incidence of bent neck.



Bull head

It is also a common disorder of rose observed mainly in low temperature during night.

Reason

- It occurs due to abnormal production of cytokinins and gibberlins.

Remedy

- Maintaining the night temperature and frequently foliar spray with cytokinin and gibberllins.





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Blind shoots

This may be defined as a stem that fails to develop a bud .

Reasons.

- Low photosynthetic accumulation rate results in upto 57% of shoots developing into blind shoots.
- This problem occurs in poly house or green houses but in open condition it is very rare.





Remedies

- Blind shoots pinched back hard by 1 or 2 nodes in the month of November resulted into production of flowering stems.
- Lightining with sodium lamps is also found to decrease the number of blind shoots significantly.
- Increase carbon di oxide level from November-february is helpful in reducing blind shoots.
- Foliar spray of ascorbic acid @ 1000 ppm also reduced blind shoot production.



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Limp necks

The area of the stem just below the flower “wilts” and will not support the head.

Reason

- This may be due to insufficient water absorption.

Remedy

- Cutting off the lower 1 to 2 inches of stem and placing the cut stem in water at 37°C will revive the flower.





Blackening of rose petals

This is caused by low temperature and high anthocyanin content.

This effect was more pronounced at low temperature (20°C at day and 4°C at night) than in higher temperature (30°C at day and 20°C at night).

Colourfading

- The off- coloured flowers are seem to be a problem with some yellow varieties.
- In these varieties the petals may be green or a dirty white instead of a clear yellow.
- Raising the night temperature several degrees will reduce the number of off-coloured flowers.



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Physiological disorders in lily

Bud blasting and abscission

- ✓ Bud blasting is characterized by a weathering and bleaching of the flower bud, followed by necrosis and bud drop.
- ✓ This may occur at any stage of bud development. Bud abortion also occurs in the late spring and the early summer due to high temperature.
- ✓ Factors contributing to this disorder include shortage of water at top of the plant, competition for limited nutrients and high level of soil nitrate that is more than 50 ppm.
- ✓ Bud blasting or abscission can be eliminated by providing artificial light about 450 watts/m² one month before flowering.



Leaf scorch

- ✓ It is also known as leaf burn and tip burn.
- ✓ Scorch is noticed particularly at the critical visible bud stage and will produce white bands across the leaves that eventually become necrotic.
- ✓ This necrotic tissue can serve as starting point for disease development, such as botrytis.
- ✓ **Remedies:** Use of fungicide spray when the first sign of scorch appears controls the damage.
- ✓ A foliar application of 1% calcium chloride just before the visibility of buds has been found successful in reducing leaf scorch.



Physiological disorders in anthurium

Folder ears

The basal lobes of the flowers are not fully unfolded in this disorder. The problem probably occurs during the early stage. There is no known solution.

Sticking

The flower does not open because the spathe is stuck as a result of sticking. It is variety dependent disorder and occurs especially during periods in which growth is rapid.

Cracks:

This disorder often occur at the sides of the spathe. Lower humidity during the night is effective to reduce cracks in anthuriums.



Physiological disorders in gerbera

Bushiness

An abnormality characterized by numerous leaves, short petioles and small laminae, which give some cultivars of gerbera a bushy appearance known as bushiness.

Nodes are not clearly distinguished and no internode elongation is seen.

Stem break

It is common post harvest disorder in cut gerberas. This is mainly caused by water imbalances.

It could be ethylene controlled and associated with early senescence associated with water stress.



Physiological disorders in gerbera

Yellowing and purple margin

- ✓ Nitrogen deficiency causes yellowing and early senescence of leaves.
- ✓ Phosphorus deficiency causes pale yellow colour with purple margin.
- ✓ Increase in levels of nitrogen and phosphorus were found to promote development of suckers and improve flowering in gerbera.



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