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**Domain**

**Smart Agriculture**

**Course**

**Management of high-value cut-flowers**

**Project topic**

**Management of Dendrobium orchid  
inside the polyhouse**



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## Irrigation

The porous media hold little water and should be irrigated whenever the media and root mass become dry.

Frequency of irrigation depends on season and weather conditions.

Media must be dried out between waterings.

In dry periods Dendrobiums need frequent irrigation once in a day. But in humid, cooler areas irrigation may be done once to three times per week.

Under watering causes shriveling of the leaves and canes, drying of root tips and stunted growth. Over watering invites root diseases and partial yellowing of leaves.

It is advisable to apply water to the root zone.



### *Quality of Water*

- **The water used for irrigation should be at room temperature.**
- **Fresh water with neutral pH is ideal.**
- **De-ionized or rainwater is used.**
- **Liquid Fertilizer can be applied later but only in very dilute amounts.**



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## Nutrient Management

Application of nutrients in optimum proportions, quantities and frequencies is the key factor in regulating growth and flowering of Dendrobium.

Floral characters can be improved by increasing the level and frequency of nutrient application.





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## Nutrient management

### Growth phase: First year (for growth of young plant)

- 20:10: 10 NPK @ 0.1% (1g/ litre of water) - Foliar application at 15 days interval.
- Calcium nitrate @ 0.05%; Magnesium sulphate @ 0.1 %; Micronutrient [Ferrous sulphate-50 ppm Fe, Boric acid-50 ppm B, Zinc sulphate-50 ppm Zn] foliar application at bimonthly interval.





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## Nutrient management

**Flowering phase: Second year onwards**

**February to May (for flowering)**

- 10:20:20 NPK (@ 2g/ litre of water) foliar application at monthly interval.
- Calcium nitrate @ 0.05% (0.5g/ litre of water) - foliar application at monthly interval.
- Magnesium sulphate @ 0.1 % (1g/ litre of water) - foliar application at monthly interval.
- Micronutrient [Ferrous sulphate-50ppm Fe (0.25g/L), Boric acid-50 ppm B (0.28g/ litre of water), Zinc sulphate-50 ppm Zn (0.22g/ litre of water)] foliar application at monthly interval.





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## **June to September (for vegetative growth)**

- 20: 10: 10 NPK @ 0.2% (2g/ litre of water) - Foliar application at 15 days interval.
- Calcium nitrate @ 0.05% (0.5g/ litre of water) - foliar application at monthly interval.
- Magnesium sulphate @ 0.1 % (1g/ litre of water) - foliar application at monthly interval.
- Micronutrient [Ferrous sulphate-50ppm Fe (0.25g/ litre of water), Boric acid-50 ppm B (0.28g/ litre of water), Zinc sulphate-50 ppm Zn (0.22g/ litre of water)] foliar application at monthly interval.





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**October to January**

**(for vegetative  
growth and flower  
bud initiation)**

20: 20: 20 NPK @ 0.2 %  
(2g/Liter) - Foliar  
application at monthly  
interval.

