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# Center for Smart Agriculture

## Applied Hi-Tech Horticulture



**Module 2:** Innovative Technologies in Hi-Tech Horticulture

**Sessions 19:** Methods, technique and advantages of fertigation



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## **Method of fertigation:**

Fertigation is a method of fertilizer application in which fertilizer is incorporated within the irrigation water by the drip system.

- Fertilizer use efficiency is increased from 80 to 90 per cent.



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## **Advantages of fertigation**

- ✓ Nutrients and water are supplied near the active root zone through fertigation which results in greater absorption by the crops.
- ✓ As water and fertilizer are supplied evenly to all the crops.
- ✓ 25-50 per cent higher yield.
- ✓ Fertilizer use efficiency through fertigation ranges between 80-90 per cent.
- ✓ 25% nutrient saving.
- ✓ Water, time, labour and energy use is also reduced substantially.



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## Precautions during fertigation

- ✓ Fertilizer tank must be used to inject water soluble fertilizer solution.
- ✓ Fertigation should be given last half an hour and another 5-6 hrs after completion of fertigation
- ✓ Concentration of solution should never exceed more than 10 percent.



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# Equipments for fertigation

1. Fertilizer tank (By pass system)
2. Venturi Injector
3. Fertilizer injection pump



5 Venturi



Fertilizer Injection pump

Fertilizer mixing tank



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## **Fertilizer Injector**

Modern fertigation equipment should be able to regulate:

- ✓ quantity applied
- ✓ duration of applications
- ✓ proportion of fertilizers
- ✓ starting and finishing time
- ✓ It is important to select an injection method that best suits the irrigation system and the crop to be grown.
- ✓ Each fertilizer injector is designed for a specified pressure and flow range.



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**Fertigation unit**



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## Fertilizers commonly used in fertigation

<b>Name</b>	<b>N-P-K</b>
Ammonium nitrate	34-0-0
Ammonium sulphate	21-0-0
Urea	46-0-0
Monoammonium phosphate	12-61-0
Diammonium phosphate	18-46-0
Potassium chloride	0-0-60
Potassium nitrate	13-0-44
Potassium sulphate	0-0-50
Monopotassium phosphate	0-52-34
Phosphoric acid	0-52-0



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**THANK YOU**