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# Center for Smart Agriculture

## Production management of medicinal and aromatic crops



**Module 3:** Nutrient Management  
**Session 13:** Fertilizer Application



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## Aloe

### **Manuring**

It is a newly domesticated crop and its full production technology including manurial requirement is yet to be worked out.

Application of a mixture of 150kg/ha of nitrogen, potassium and phosphorus is recommended.

The fertilizers are applied in the soil near the root system, after the plants are established.



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**Tulsi**

## **Fertilizer application**

The application of 120 kg/ha, 105 kg/ha of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O is recommended for saline and alkaline soils at Lucknow.

The optimum fertilizer dose recommended for this crop is 120 kg N and 60 kg P<sub>2</sub>O<sub>5</sub>/ha.



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**Tulsi**

## **Fertilizer application**

Half the dose of N and the entire dose of P<sub>2</sub>O<sub>5</sub> are given as a basal dose. Whereas, the remaining N is applied in two split doses, after the first and second cuttings.

The application of the micronutrients Co and Mn at 50 and 100 ppm concentrations, respectively, is reported to increase the oil-yield significantly.



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## Periwinkle

### Fertilizer application

At the time of land preparation, apply FYM (Farm Yard Manure) @50-100 quintals.

Apply fertilizer dose of potassium and phosphorus in two split doses. Once it is given after annual pruning and then it is again done in the month of June and July.



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**Coleus**

## **Manures and Fertilizers**

The crop requires plenty of organic manure.

In addition to 25 tonnes of FYM, addition of 1 ton vermicompost, 150 kg of neem cake, 500 kg of gypsum are applied to condition the soil and to improve its fertility by organic means.

Many farmers adopt organic farming by avoiding chemical fertilizers and pesticides.



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## Coleus

### **Manures and Fertilizers**

‘Panchagavya’ 3% organic spray is given along with root drenching.

A fertilizer dose of 40 kg N, 60 kg P<sub>2</sub>O<sub>5</sub> and 50 kg K<sub>2</sub>O per hectare is recommended for Tamil Nadu.

Half the dose of N, the whole P and K may be applied as the basal dose followed by the remaining half N, 30 days after planting as top dressing.



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## Citronella

### Fertilizer application

Citronella The crop requires FYM 10 t/ha and NPK at 25:40:40 kg/ha as basal dose.

75 kg N/ha can be applied in 3 equal splits of 25 kg each at 3, 6 and 9 months after planting.

For poor and medium fertility soil N, P<sub>205</sub>, K<sub>20</sub> @ 200:80:75 kg/ha/year should be applied. In the first year the organic, P and K fertilizers are mixed into the soil at final land preparation.



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## Citronella

### Fertilizer application

Nitrogen should be applied at 4 equal splits (@ 50 kg N) in the first year- first application at about one month after planting with weeding and rests after each harvest.

In subsequent years the basal dose may be applied along with the first dose of N.

N as urea is top dressed soon after the regenerated crop is established and thereafter once in every two months.



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## Citronella

In the subsequent years N dose may be increased by 50 kg for the additional split application.

During rainy season crop may suffer iron deficiency leading to leaf chlorosis resulting decrease in yield and oil quality.

This may be rectified by spraying 0.25% ferrous Sulphate solution at 10-15 days intervals for 3-4 times interval



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## Lemon Grass

### **Manures and fertilizers**

The Aromatic Plants Research Station Odakkali (Kerala) recommends 100 kg of N/ha.

Under North East conditions, application of 60kg of N, 50 kg P and 35 kg K is recommended per hectare.

In North India, Jammu lemon grass (*C.pendulus*) is cultivated under irrigated condition as a source of citral.

The cultural practices are almost similar to East India lemon grass.



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## Lemon Grass

### **Manures and fertilizers**

It is propagated exclusively by slips, which are planted on flat beds. A spacing of 50 x 50cm is adopted.

A dose of 260 kg N, 80 kg P<sub>2</sub>O<sub>5</sub> and 120 kg K<sub>2</sub>O per hectare is recommended in 3-4 split doses.

The crop responds to irrigation especially during hot summer months.



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## Vetiver

### **Manuring and fertilization**

In poor soils 40kg each of nitrogen, phosphorus and potassium per acre is applied before final ploughing.

In second year of crop growth 40 kg nitrogen is top-dressed after rain in June.

In the first year depending on soil fertility and crop growth 20 kg N may be top-dressed at about 4 months after planting.



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## Vetiver

### **Manuring and fertilization**

Depending on availability, the crop may be given 10-12 t/ac FYM or compost at planting supplemented with urea one month after planting to stimulate growth.

### **Fertilizer requirement per crop cycle (18 months)/hectare**

A fertilizer dose of 100 kg N, 40 kg P<sub>2</sub>O<sub>5</sub> and 40 kg K<sub>2</sub>O per hectare is recommended.



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## Rose

Use a high-nitrogen **fertilizer** or top dress with alfalfa meal (5-1-2) for the first **application** to jump-start leaf development, along with epsom salts to encourage new cane development and lusher growth.

Add a slow-release **fertilizer** when shoots are 4 to 5 inches long.



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**Thank You**