

**ICAR- All India Coordinated Research Project on Spices  
Indian Institute of Spices Research  
Kozhikode-673012, Kerala**

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### **Contingent Plan for Management of Water Stress**

**Spices (Black pepper, Small and Large Cardamom, Ginger, Turmeric, Nutmeg, Cinnamon, Coriander, Cumin, Fennel, Fenugreek)**

#### **Points to be taken care during late onset of monsoon**

- 1. Moisture conservation by earthing up, mulching and addition of coir pith etc to conserve moisture*
- 2. Use of drought tolerant and or short duration varieties and alternate crops*
- 3. Where there is no other alternative reduction in canopy*

#### **In addition follow cropwise recommendations**

##### **1. Black Pepper**

- Delay taking up of new planting/gap filling
- Mulching of the basin to avoid evaporation
- Provide micro life saving irrigation (6-8 l/day/vine)
- Avoid digging/intercultural operations which leads to lose of moisture
- Burry the coconut husk around the base which conserve moisture
- Provide sufficient shade to the newly planted vines
- In the nursery take care of the plants by proper irrigation

##### **2. Cardamom**

- Delay new planting/gap filling
- Apply mulch and avoid disturbing the soil
- Provide life saving micro irrigation @ 9 l/clump/day
- Avoid application of chemical fertilizers
- Provide adequate shade to the young plants
- Avoid pruning of shade trees

##### **3. Ginger and Turmeric**

- Delay sowing of crop
- Develop nursery in portray – you can maintain for 1 ½ months.
- Grow short duration varieties
- If planted Provide mulch on the beds
- Give life saving, micro irrigation depending up on the availability of stored water.
- If the drought persist at later stage harvest the crop in case of ginger, harvest the crop for vegetable purpose.

#### **4. Nutmeg**

- Provide adequate shade to young plants
- Delay taking up of new planting
- Provide adequate green mulch
- Provide life saving irrigation if tree are drying.
- Reduce the canopy.

#### **5. Seed spices (Coriander, Cumin, Fennel, Fenugreek)**

Seed spices cultivation season is *Rabi* (Sowing in Oct-Nov) delayed monsoon doesn't affect the seed spices much and in South India Coriander and Fenugreek grown for leaf purpose during this time for that delay the sowing, go for short duration varieties and provide micro irrigation

##### **In general recommendations for seed spices**

- Store the seeds in cool dry place
- Treat the seeds with PGPR which helps in good storage, viability, germination and growth of plants
- Select short duration varieties and leafy types
- Provide sub surface micro irrigation
- In case of fennel transplanting can be taken up by establishing nursery in protray