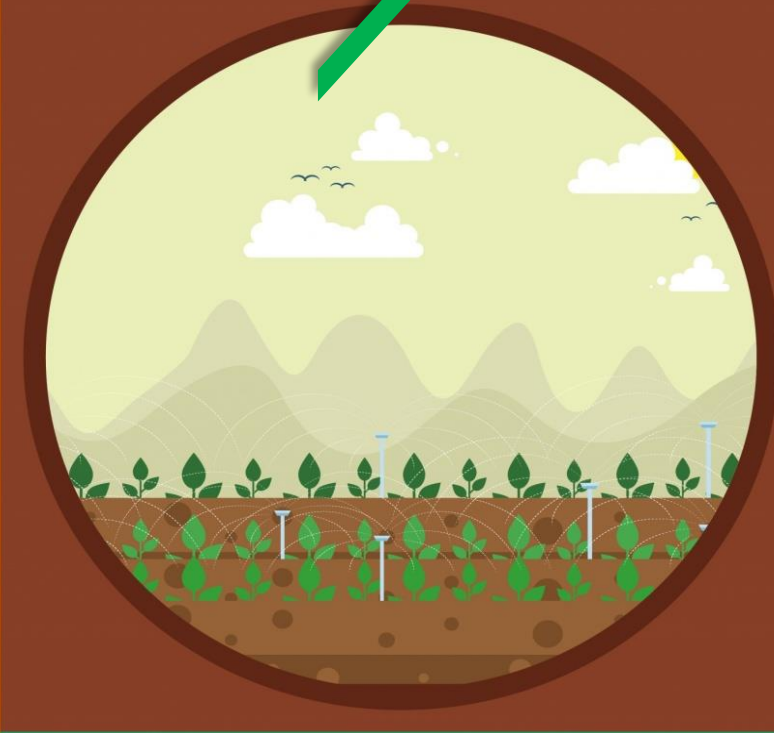




Stress Management Agro-Advisory for the State of Maharashtra

March 07-20, 2025



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Managing Abiotic and Biotic Stresses in Agriculture

Agro-Advisory for the State of Maharashtra

(Mar 07-20, 2025)

Advisory No.: NIASM/MH/25-05

Date: Mar 07, 2025

1. Weather Forecast (India Meteorological Department, New Delhi)

1.1. Rainfall

- No rainfall is expected in most parts of the state over the next two weeks.

1.2. Temperature

- The maximum temperature is expected to range between 34-38 °C, remaining near normal in most parts of the state.
- During 7-13th March, the minimum temperature is expected to range between 16-20°C, remaining 1-2°C below normal in most parts of the state, while during 14-20th March, it may vary between 18-22°C, remaining up to 2°C above normal in Madhya Maharashtra and 1-2°C below normal in most parts of the state.

2. Managing Abiotic Stresses

2.1. Atmospheric Stresses

2.1.1. Crops

- **Dragon fruit:** Spray of Kaoilin @ 8-10% to avoid sunburn injury to cladodes.

2.1.2. Livestock

- Avoid overcrowding of animals in livestock shed
- Control of ecto-parasites and endo-parasites should be carried out
- The floor of the animal shed should be kept clean and dry
- Maintain the surrounding of animal shed clean and hygienic and remove the unwanted vegetation nearby the sheds.

2.2. Water Stresses

2.2.1. Crops

- **Vegetable crops:** Use of mulching and drip irrigation system for new transplantation in vegetable crops for efficient use of water and to avoid weed growth.
- Light irrigation is to be applied in vegetable crops as and when required.
- **Brinjal:** Use of grafted eggplant seedlings for transplanting. Foliar application of salicylic acid (0.3-0.5g/L) at monthly interval after transplanting will help to overcome the effect of water stress.

2.2.2. Livestock

- Silage can be prepared if excess green fodder is available for future use during scarcity periods.
- Mixed silage of sugarcane tops up to 50% level may be prepared with jowar or maize fodder in case excess green fodder is available. The silage thus prepared may be useful for feeding livestock during the upcoming summer/ scarcity period.

2.2.3. Fisheries

Preparation of the pond for stocking of the fish

1. Construction of new pond, strengthening of embankment and side slopes may be completed during this period with optimum depth of 2.0-3.0 m with 1.5 m height to maintain water throughout the year at maximum possible capacity
2. Apply cow dung @ 0.75-1.0 ton/ha after application of lime at the corner of the pond
3. Measure turbidity of the pond water with the Secchi disc for maintenance of pond water transparency (30-45 cm)
4. Application of powdered lime at pond bottom @ 120-130 kg/ha and after 10 days of lime application water may be filled in the fish pond
5. Monitor the water quality parameters viz. dissolved oxygen (6.0-7.0 ppm), pH (7.0-8.5), ammonia (0.05 ppm), nitrate (50-150 ppm), nitrite (0.1 ppm), CO₂ (less than 10 ppm), and H₂S (0.002 ppm) in fish pond carefully.

Recommendation for stocked fish

6. Fish farmers are advised to use high protein diets (30-35 %) during this month.
7. Fish farmers must use farm made pellet feeds to reduce feed wastage and achieve better feed conversion efficiency.
8. To avoid the fungal, bacterial and parasitic diseases, fish farmers may use potassium permanganate @ 1-2 kg/acre or limestone @ 50-75 kg/acre. Salt application @ 100 kg/acre also helps in protecting fish against disease outbreak during winters
9. Time to time the growth of the fish may be checked for better maintenance of fish stock and diseases protection
10. The unutilized feed in the feeding tray may be checked frequently to avoid ammonia toxicity
11. The farmers are advised to aerate their ponds either by adding fresh water or by using aerators to maintain oxygen level in fish pond

2.3. Soil Stresses

- **All orchards:** Cover the tree basins or the bunds with green mulch or agro-wastes for regulation of soil temperature, moisture retention and to avoid salinity build up at root zone area.
- **Pomegranate:** After harvesting of *Haste bahar* crop, undertake pruning operation to remove the bearing branches, and apply 20 kg FYM along with Neem-cake @ 2 kg per plant.

3. Managing Biotic Stresses

3.1. Crops

- **Mango:** Spray Dimethoate 30EC @ 1.5 ml/L followed by Deltamethrin 2.8EC @ 1ml/L when fruits are marble sized to manage stone weevil and fruit borer infestation. If floral malformation is seen, remove and destroy affected portion along with sufficient shoot and follow it up with spray of Carbendazim 50WP @ 1.5 g/L.
- **Pomegranate:** To manage thrips, install yellow/ blue sticky traps @ 75 per hectare randomly at 15 cm below from the canopy top of the plant. To control fruit borer infestation, remove all the damaged fruits with holes and dispose them by burying in pit and take a spray with any one of the insecticide Cyantraniliprole 10.26% OD @ 0.75 ml/L or Chlorantraniliprole 18.5% SC @ 0.75 ml/L or Flonicamid 50% WG @ 0.75-1.0 ml/L water.
- **Brinjal:** To manage mango fruit and shoot borer, use water trap/Leuci lure pheromone traps @ 12/ ha to monitor, attract and kill male moths and change the vial once in three weeks. Also spray Chlorantraniliprole 18.5 SC @ 0.3 ml/L once in 15 days depending upon the population of the pest.
- **Solanaceous and Cucurbitaceous vegetables:** Fluctuation in daily mean temperature may increase the infestation of mites and to manage them, spray Spiromesifen 22.9 SC @ 0.5 ml/L or Abamectin @ 0.5 ml/L.

- **Dragon fruit:** Pruning of diseased cladodes followed by fungicide spray Mancozeb + Carbendazim @2.5g/L or Bordeaux mixture @10g/L after harvesting fruits.
- **All vegetable crops:**
 - To avoid incidence of disease and pest in solanaceous vegetable crops, maintain optimum /recommended plant spacing.
 - Procure healthy and disease-free seedlings from certified nursery only.
 - Spray liquid formulation of *Trichoderma* sp. @ 5ml/litre as a preventive measure for effective management of diseases
 - To manage soil-borne pathogens, apply *Trichoderma* sp. + *Pseudomonas* sp. @ 1litre/acre through drip irrigation system.
 - Follow integrated pest and diseases management practices such as disease-free seedlings from certified nursery, drenching with copper oxychloride @ 2.5 g/L of water to avoid post-transplanting damping-off in addition to use of systemic insecticides like Imidacloprid @ 0.5 ml/L to manage sucking pests.

3.2. Livestock

- There is a very high risk of Anthrax in Parabhani and Pune district. There is a very high risk of Haemorrhagic Septicaemia (HS) in the Ahmadnagar, Hingoli, and Nashik districts. There is a very high risk of Black quarter (BQ) in Ahmadnagar, and Latur districts. There is a very high risk of Enterotoxaemia in Latur and Satara districts and high risk in Mumbai suburban.
- Affected animals may be isolated and treated with suitable antibiotics and vaccination is to be done in consultation with the local veterinarians.
- There is a very high risk of Foot and Mouth Disease (FMD) in Ahmadnagar and Nashik districts.
- There is a very high risk of Peste des Petits Ruminants (PPR) in the Ahmadnagar, Amaravati, Dhule, Jalgaon, Nanded, Nandurbar, Nashik, and Pune districts.
- There is a very high risk of Lumpy skin disease (LSD) in Bid, Hingoli, Latur, Nanded, Osmanabad (Dharashiv), Parabhani and Solapur districts.
- There is a very high risk of Sheep and Goat Pox in Ahmadnagar, Nashik, Pune, Sangli and Satara districts.
- Vaccination for FMD, PPR, and Sheep and Goat Pox in the concerned districts may be done in consultation with the local veterinarians.
- Monitor animals for any sickness particularly related to digestive, dermal, or respiratory problems, and treat them by consulting a veterinarian.
- Regular deworming should be carried out by consulting local Veterinarians.
- For treatment of ectoparasitic infestation, dipping (if not done during the last three months) needs to be carried out with Ectomin/Butox, post-shearing on sunny days. Anti-parasitic drugs should be used under the guidance of a veterinarian.
- Spot the sick animals and isolate them in a separate shed for treatment.

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