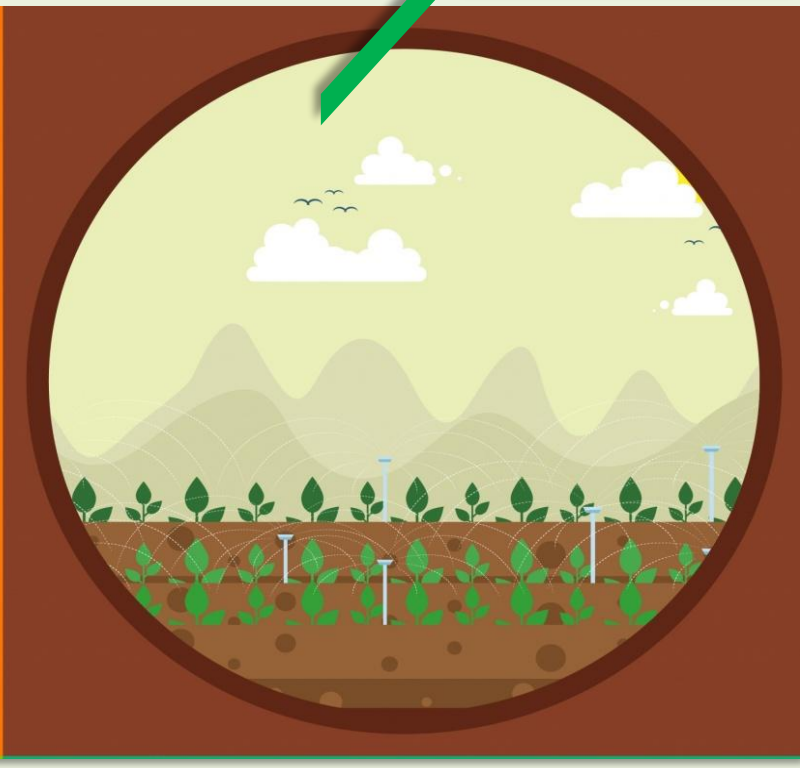
Stress Management Agro-Advisory for the State of Maharashtra

October 24 - November 06, 2025



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Managing Abiotic and Biotic Stresses in Agriculture

Agro-Advisory for the State of Maharashtra

(October 24 - November 06, 2025)

Advisory No.: NIASM/MH/25-18 **Date: Oct 24, 2025**

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

1.1.Rainfall

- Daily rainfall is expected to range between 1-5 mm, remaining 1-3mm above normal in most parts of the state.

1.2. Temperature

- Maximum temperature is likely to range between 28–32ºC, remaining near normal in most parts of the state.
- Minimum temperature is expected to range between 18–22ºC, remaining 1–3ºC below normal in most parts of the state.

2. Managing Abiotic Stresses

2.1. Atmospheric Stresses

2.1.1. Crops

- **Grape:** Complete forward pruning during this period. The pruning need to be staggered by following local weather forecast.
- **Dragon fruit:** Remove overgrown and sun burnt shoots after harvesting fruits.

2.1.2. Livestock

- Avoid overcrowding of animals in livestock shed
- To protect the animals from hailstorms, the animals should not be left tied up or restrained outside during a storm.
- Repair the roofs of shed and ensure that animal sheds are leak-proof and well-ventilated.
- Establish proper drainage systems to prevent waterlogging and moisture buildup.
- 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

- **Grape:** Pre-pruning water stress for 10-15 days is mandatory to encourage natural defoliation, therefore withhold irrigation during pre-pruning period.
- **Pomegranate:** Avoid any irrigation water imbalance in *Mrig bahar* orchards near maturity, to avoid fruit cracking.
- **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.
- Store sufficient dry fodder to meet the needs during the rainy season, as green fodder has high moisture content during this time.
- Store feed and fodder in dry, well-ventilated areas to prevent mould growth and spoilage.

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), CO_2 (less than 10 ppm), and H_2S (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:** It is time for tillage in between rows and soil pulverization in the plant basins to break topsoil compaction, to improve soil aeration and weed management.
- **Grape:** Supply 80Kg N per ha through drip irrigation during 1 to 20 days after forward pruning.

3. Managing Biotic Stresses

3.1. Crops

- **Grape:** Spray Imidachloprid 200SL @ 0.8 ml/L immediately after pruning to control damage of sprouting buds by flea beetle. Prophylactic spray Cymoxanil 8% + Mancozeb 64% @ 1.5 g/L at three leaf stage to be done for control of Downy mildew infection.
- **Guava**: Use pheromone trap bottles containing 100ml solution of 0.1% Methyl eugenol and 0.1 Malathion for integrated management of fruit fly pest. Tie the trap bottles at 1.5 to 2 meter height in orchard @ 8 Nos/ ha.
- **Sweet orange**: To manage fruit sucking moth pest, spray neem oil @ 10 ml/L water and destroy all the fallen fruits by burying in the pit. Poison baiting with 10 ml Chlorpyriphos 20EC mixed with 100 g jaggery and 100 ml sweet orange juice in 900 ml water (two per 25 trees).

- **Acid lime:** If citrus trees are showing oozing symptoms of gum then scrap the area with a sharp knife and apply Mefenoxam MZ-68 or Fosetyl Al paste on it. Apply Bordeaux paste on the tree trunk up to height of 60 cm by paint brush.
- **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 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, maintan 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 (VHR) of Haemorrhagic Septicaemia (HS) in the Ahmadnagar, Latur, Osmanabad, Pune, Sangli, Satara, Solapur and Yavatmal districts.
- 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 Peste des Petits Ruminants (PPR), Classical Swine Fever (CSW) and Sheep and Goat Pox in the Ahmadnagar, Amaravati, Dhule and Nashik districts.
- There is a very high risk of Foot and Mouth Disease (FMD) in Ahmadnagar, Latur, Osmanabad, Pune, Sangli, Solapur and Yavatmal districts.
- There is a very high risk of African swine fever in Akola and Mumbai districts and Lumpy Skin Disease in the Akola district.
- Vaccination for FMD, PPR, LSD and Sheep and Goat Pox in the concerned districts may be done in consultation with the local veterinarians.
- There is a very high risk of Theileriosis and Trypanosomiasis in Akola district.
- Ensure 100% vaccination with timely boosters for PPR, HS and S & G pox alongside routine testing in VHR districts to enable early disease detection.
- Enforce strict biosecurity protocols, including controlled farm access, equipment disinfection, and quarantine for newly introduced animals.
- Control vector populations through integrated management practices, including tick control, fly-proof shelters, and molluscicide use in snail-infested areas.
- 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.

4. General

- **Dragon fruit:** Manual pollination is highly recommended to improve fruit set, quality and size when flowering coincides with continuous overnight rains. Red flesh types respond extremely well to cross pollination as much of them are self-incompatible
- **Citrus:** Looking into deficiency symptoms at the time of growth in new flush, spray solution containing Sulphates of Zinc (0.5%), Manganese (0.05%), Iron (0.25%), Magnesium (0.5%), Boron (0.1%) and Molybdenum (0.003%). In addition to that, apply 25 g each of Sulphate of Zinc, Manganese and Iron per tree.
- **Foliar spray solution:** Use good quality water for spraying of agrochemicals preferably neutral or slightly acidic. If water is alkaline (pH~8), use Citric acid @ 0.5 g/L, to increase spray efficacy. Use sticker and spreader adjuvants during rainy days.

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