



Stress Management Agro-Advisory for the State of Maharashtra

March 20 - April 02, 2026



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Managing Abiotic and Biotic Stresses in Agriculture

Agro-Advisory for the State of Maharashtra

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Advisory No.: NIASM/MH/26-04

Date: Mar 20, 2026

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

1.1. Rainfall

- No rainfall is expected across the state during the next two weeks.

1.2. Temperature

- Maximum temperature is likely to range between 36-40 °C, remaining near normal in most parts of the state.
- Minimum temperature is expected to range between 20-24 °C, remaining 1- 2°C above normal in most parts of the state.

2. Managing Abiotic Stresses

2.1. Atmospheric Stresses

2.1.2. Livestock

- The animals should be kept under shed during hot hours.
- The sheds should be covered with thatch material to protect the animals from heat stress.
- The roof should be painted with white paint.
- Grazing of animals should be done during 6-10 am and in evening from 5-6 pm so that direct exposure to sunlight may be avoided in peak hours.
- Proper ventilation in animal shed
- Animals should be fed in cool hours
- Animals should be fed with good quality green fodder
- Wet gunny bags should be tied in the animal shed to protect from hot winds
- Avoid overcrowding in animal shed.
- Control of external endoparasites should be carried out.
- Install fan/foggers, wherever possible to reduce the heat stress.
- Provide natural/artificial shade to animals.

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

- 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 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

- 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 water holding capacity throughout the year.
- Apply cow dung @ 0.75-1.0 ton/ha after lime application in corner of the pond
- cow dung, urea and SSP application applied only after pond filled with water
- Measure turbidity of the pond water with the Secchi disc for maintenance of pond water transparency (30-45 cm)
- Apply powdered lime in pond bottom @ 120-130 kg/ha and after 10 days of lime application water may be filled in the fish pond
- Monitor 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

- Fish farmers are advised to use high protein diets (30-35 %) during this month.
- Fish farmers must use farm made pellet feeds to reduce feed wastage and achieve better feed conversion efficiency.
- To avoid the fungal, bacterial and parasitic diseases, fish farmers may advise to 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
- Time to time the growth of the fish may be checked for better maintenance of fish stock and diseases protection
- The unutilized feed in the feeding tray may be checked frequently to avoid ammonia toxicity
- 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:** Pulverize the soil in tree basins to break compaction of top soil to improve soil aeration and weed management.

3. Managing Biotic Stresses

3.1. Crops

- **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 Chlorpyrifos 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, 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 (VHR) of Haemorrhagic Septicaemia (HS) in the Ahmadnagar, Dhule, Hingoli, Nashik, Pune and Solapur districts and VHR of Anthrax in Pune and Yavatmal districts. VHR of Black quarter (BQ) in Ahmadnagar, Bid and Latur districts and Enterotoxaemia in Kolhapur, Latur, Mumbai, Mumbai Suburban and Satara 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) in Ahmadnagar, Akola, Amravati, Bid, Buldana, Dhule, Jalgaon, Jalna, Kolhapur, Mumbai Suburban, Nanded, Nandurbar, Nashik, Osmanabad, Pune and Satara districts, and Sheep and Goat pox in Ahmadnagar, Buldana, Dhule, Jalgaon, Latur, Mumbai Suburban, Nashik, Palghar, Pune, Ratnagiri, Sangli, Satara and Thane districts.
- There is a very high risk of Foot and Mouth Disease (FMD) in Ahmadnagar, Kolhapur, Nashik, Pune, Solapur and Wardha districts.
- There is a very high risk of Lumpy Skin Disease (LSD) in Bid, Buldana, Hingoli, Kolhapur, Latur, Nanded, Nandurbar, Osmanabad, Parbhani, Sangli, Satara, Solapur and Washim.
- There is a very high risk of Classical Swine Fever (CSF) in Ahmadnagar, Jalgaon, Nagpur, Nashik and Pune districts and African Swine Fever (ASF) in Ahmadnagar, Amravati, Nashik, and Sangli districts
- Vaccination for FMD, PPR, LSD, ASF CSF and Sheep and Goat Pox in the concerned districts may be done in consultation with the local veterinarians.
- VHR of Fascioliasis in Latur, Mumbai, Mumbai Suburban and Satara districts.

- There is a very high risk of Theileriosis in Ahmadnagar, Amravati, Bid, Nashik, Sangli and Solapur districts. and Trypanosomiasis in Ahmadnagar, Amravati, Nashik, and Sangli districts.
- 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

- **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.

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