

Pomegranate Advisory for August-September

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Bahar – Mrig

A. Nutrient Management –

Current Stage of the Orchard – Flowering and fruit setting

- Foliar application of micronutrient mixture @ 1.0-1.5 kg ha⁻¹
- Fertigate N:P:K::00:52:34 (Mono-Potassium Phosphate) @ 8.5 kg/ha/application -Give 3 applications at 7 days interval through irrigation
- Apply Gypsum @ 1.70- 1.80 kg /plant and MgSO₄ @ 700 g/plant followed by thorough mixing with the soil and watering. Magnesium sulphate can also be applied through drip system.
- Fertigate N:P:K::00:52:34 (Mono-Potassium Phosphate), urea and 0-0-50 @ 8.50, 22.50 and 16.30 kg/ha/application respectively -Give 5 applications at 7 days interval through irrigation
- Foliar application of micronutrient mixture @ 1-1.5 kg ha⁻¹
Two foliar application of gibberellic acid @ 50 ppm at 15 days interval.

B. Insect Pest Management

- Fruit borer (Egg stage): Spray Azadirachtin/Neem oil 1% (10000ppm) @ 3ml+0.25ml spreader sticker/l water or Pongamia oil @ 3ml+0.25ml spreader sticker/ l water **or** combination of both of the above @ 3+3 ml/l with 0.25 ml spreader sticker.
- Fruit borer (Larval stage/bored holes): Remove all the bored fruit and dispose of by burying in a pit and take the spray with Cyantraniliprole 0.75 ml/l +0.25 ml spreader sticker /l water **or** Chlorantraniliprole 18.5 SC 0.75ml/l+0.25 ml spreader sticker /l water.

Bahar – Hasta

A. Nutrient Management –

Current Stage of the Orchard – Release of stress

- Apply 25-30 kg FYM **or** 15-20 kg FYM + 2 kg vermi-compost + 2kg neem-cake per tree **Or** 7.5 kg well decomposed poultry manures + 2 kg neem-cake per tree.
- Apply 2.5- 2.8 kg Gypsum and 800 g Magnesium sulphate per tree followed by mixing with rhizosphere soil.
- Apply bio-formulation of *Azospirillum* sp., *Aspergillusnizer*, *Trichoderma viridae* and *Penicillium pinophilum* @ 10-20 g/plant after incubating separately with well decomposed farmyard manure for 15 days maintaining 60% moisture content in the mixture and periodical stirring under shed.
- Also apply Arbuscular Mycorrhizal Fungi, AMF (*Glomus* sp.) @ 10-15g per tree.
Give light irrigation immediately after manures application.

B. Insect Pest Management –

1. Traps Installation: Install blue/yellow stick trap 10-15 days after first irrigation @ 25-30/ acre and trap need to be tied 10-15cm lower to the top canopy and it may get replaced based on the surface coverage of the trap area by pest or at 20-25 days' interval.
2. Vegetative stage: Spray Azadirachtin/Neem oil 1% (10000ppm) @ 3ml+0.25ml spreader sticker/l water or Pongamia oil @ 3ml+0.25ml spreader sticker/ l water **or**

combination of both the above @ 3+3 ml/l with 0.25 ml spreader sticker. 7-10 days' interval

3. Flower bud/flowering stage: 7-10 days after first spray take second spray with Cyantraniliprole @ 0.75 ml/l + 0.25 ml spreader sticker /l water or Chlorantraniliprole 18.5%EC @ 0.75ml/l + 0.25 ml spreader sticker or Flubendiamide 19.92% w/w + Thiacloprid 19.92% w/w @ 0.5 ml/ l. + 0.25 ml spreader sticker

4. Root-Knot Nematode infested plot: Apply Fluensulfone 2% GR @ 40/plant at the time of first irrigation in a pit of 5-10 cm deep below each dripper equally or by dissolving the 40/g in 4-5 litre water and drenching circularly around the plant/ for more than 2 years' plants.

Bahar – Ambia

A. Nutrient Management –

Current Stage of the Orchard – Fruit harvesting and allowing orchard for rest.

- Undertake light pruning if not done after harvesting of previous crop.
 - Apply 20-25 kg FYM or 13-15 kg FYM + 2kg vermin-compost + 2 kg neem-cake per tree
Or 7.5 kg well decomposed poultry manures + 2 kg neem-cake per tree.
 - Apply 205 g N (446 g neem-coated urea/tree) 50 g P₂O₅ (315 g Single Super Phosphate/tree) and 152 g K₂O per tree (254 g Murate of Potash or 304 g Sulphate of Potash per tree) followed by light irrigation.
 - Apply bio-formulation of *Azospirillum* sp., *Aspergillus niger*, *Trichoderma viridae* and *Penicillium pinophilum* @ 10-20 g/plant after incubating separately with well decomposed farmyard manure for 15 days maintaining 60% moisture content in the mixture and periodical stirring under shed.
 - Also apply Arbuscular Mycorrhizal Fungi, AMF (*Glomus* sp.) @ 10-15g per tree.
- N.B.- Apply bio-fertilizer 10-15 days after chemical fertilizer application and give light irrigation after application.

B. Insect Pest Management –

Regular monitoring/observation for fruit fly/sucking bugs/insects etc.

Fruit piercing moths:

1. Remove Tinospora Gulvel/ from field boundaries.
2. Take bagging of individual fruits/tree/rows with Poly Propylene Non-Owen Bags (PPNW)/ covers at last week of July/ first week of August. Before bagging take the spray if bacterial blight, mealybugs or as per pest presence.
3. If bagging is delayed then take spray with Azadirachtin/Neem oil 1% (10000ppm) @ 3ml + Fish Oil Resin Soap @ 0.5-1.0 ml/l water preferably on border row plants.
4. Fruit fly damage: Install McPhail traps with Torula yeast/ *Bactrocera dorsalis* lure and replace at 15-20 days' interval.

Note: These recommendations for N-P₂O₅-K₂O are applicable if the leaf test report reveals N-P₂O₅-K₂O concentrations are within the optimum concentration range. If any nutrient is below the optimum range, it is advised to increase the above recommendation by 25%.

Nutrients	Optimum conc. range in leaves
Nitrogen (%)	1.32-2.15
Phosphorus (%)	0.18-0.24

Potassium (%)	1.29-1.99
Calcium (%)	0.64-1.20
Magnesium (%)	0.23-0.45



Colletotricum fungal infection on fruits



Sphaceloma fungal Scab



Cercospora Fungal fruit spots



Bacterial Blight fruit cracking



Partial Fungal Wilt



Correct way of Drenching

<p align="center">Management of Diseases for all seasons</p>
<p align="center">Spray During crop season for Bacterial blight (7-10 days interval)</p> <p align="center">Bordeaux mixture (0.5% except 1% just after pruning) <i>altered with</i> streptocycline (5g/10 l) or 2-bromo, 2-nitro propane-1, 3-diol (Bronopol) @ 5g/10 l + copper oxychloride or copper hydroxide (20-25g/ 10 l) + Spreader sticker (5 ml /10l)</p> <p>Depending on fungal problems present in the orchard Copper based formulations may be replaced with appropriate fungicides</p> <p align="center">4 sprays of Salicylic acid@ 0.3g/l 4 sprays of Micronutrients</p>
<p align="center">Emergency Sprays for bacterial blight</p> <p>Take 1-2 sprays at 4 day interval soon after blight infection seen on fruits in green lemon stage</p> <ol style="list-style-type: none"> 1. streptocycline (5g/10l)+ Bronopol (5g/10l) + Kocide (20g/10 l) + spreader sticker (5ml/10l). 2. streptocycline (5g/10l)+ Bronopol (5g/10l)+ carbendazim(10g/10 l) + spreader sticker (5ml/10l)
<p align="center">Precautions</p> <ul style="list-style-type: none"> • Take only need based sprays at recommended doses • Reduce number of sprays. • Take additional spray after the rains • Use non-ionic spreader sticker except with Bordeaux mixture. • Before every spray remove and burn all bacterial blight/rot affected fruits • Prepare Bordeaux mixture fresh and use on the same day • Take sprays in the evening.
<p align="center">During rest period (10-15 days interval)</p> <p align="center">Bordeaux mixture (1%) OR copper oxychloride or copper hydroxide or suitable fungicide+ (20-25g/ 10 l) + Spreader sticker (5 ml /10l)</p>
<p align="center">Some promising fungicides for Pomegranate fungal Scab, Spots and Rots</p>

- T1: Mandipropamid 23.4% SC @ 1ml/l
- T2: Propiconazole 25% EC @ 1ml/l + Azoxystrobin @ 1ml/l
- T3: Azoxystrobin 20% + difenoconazole 12.5% SC @ 2ml/l
- T4: Chlorothalonil 50% + metalaxyl M 3.75% @ 2ml/l
- T5: Bordeaux mixture @ 0.5%
- T6: Copper Oxychloride 45% + Kasugamycin 5% @ 2.5g/l
- T7: Zineb 68% + Hexaconazole 4% WP @ 2.5g/l
- T8: Tricyclazole 18% + Mancozeb 62% WP @ 2.5g/l
- T9: Chlorothalonil 75% WP @ 2g/l
- T10: Propiconazole @ 1ml/l

Note:

- i. Best results are obtained with 2 sprays starting during flowering and fruit setting stage at 15 days interval with any of the above. This will avoid several sprays at later stages.
- ii. Always use spreader sticker with sprays except Bordeaux mixture
- iii. Need based sprays be used later
- iv. No pesticide should be used more than 2 times in a season except copper fungicides

Fungal Wilt Management

NOTE: Prefer drenching soon after harvest in rest period, or initial stage of crop regulation
Use only one of the following methods

I. (1st drenching Propiconazole 25% @ 2ml/l + Chlorpyrifos @ 2ml (10l solution). After 30 days of first application 2nd drenching Aspergillus niger AN 27 fungus @ 5gm/plant with 2Kg FYM/plant 3rd application after 30 days of 2nd application - VAM fungus (Vesicular arbuscular mycorrhizae - Rhizophagus irregularis @ 25gm/plant with 2Kg FYM/plant) –

OR

II. Propiconazole 25% @ 2ml/l + Chlorpyrifos @ 2ml (3 drenchings at 20 days interval)

OR

III. 1st drenching Fosetyl Al 80% WP @ 6gm/plant (10l solution)] [2nd drenching Tebuconazole 25.9% w/w EC @ 3ml/plant (10 l solution)] [3rd @ 6gm/plant (10 l solution)] [4th drenching Tebuconazole 25.9% @ 3ml/plant (10l solution)] (20 days interval)

Advantages of applying bioformulation Aspergillus niger AN 27 (Fungus)

1. Only biopesticide and biofertilizer patented in the world using Aspergillus niger
2. Controls all types of wilt pathogens including nematodes,
3. Works in all types of climatic, soil and water conditions
4. Releases beneficial hormones promoting plant growth, flowering and fruit yield.
5. Increases resistance in plants to diseases and other stress conditions.
6. Aspergillus niger AN 27 and VAM fungus (Vesicular arbuscular mycorrhizae - Rhizophagus irregularis (previously known as Glomus intraradices) have synergistic effect.
7. VAM fungus establishes in pomegranate roots and helps under water stress conditions
8. Both are phosphate solubilizers

Important Links for details :-

For the information on management of diseases on Pomegranate in above bahars, farmers are advice to use following links.

1. Adhoc list of chemicals :-<http://nrcpomegranate.icar.gov.in/files/Advisory/30.pdf>
link
- 2.IDIPM Schedule :- <http://nrcpomegranate.icar.gov.in/files/Advisory/12.pdf>
- 3.Wilt disease management :- <http://nrcpomegranate.icar.gov.in/files/Advisory/34.pdf>