

CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089

Period: 1st to 15th January, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
January	27.7	9.95	81.1	35.5	4.30	2.46	0.00
(1 - 15)							
2023	(28.2)	(13.8)	(82.1)	(46.9)	(3.7)	(3.4)	(0.2)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

Fortnight from 1st to 15th January, 2023

During the First fortnight of the month i.e., 1st to 15th January, 2023, the mean maximum temperature increased by 0.3 °C and the mean minimum temperature decreased by 3.15 °C as compared to previous fortnight. The mean maximum temperatures increased by 0.4 °C and mean minimum temperature decreased by 0.2 °C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning increased by 3.0 % and in the afternoon decreased by 12.6 % as compared to the previous fortnight. There is no rainfall reported during this fortnight.

Crop weather situation

In this fortnight, both mean minimum and mean maximum temperatures are lower than the average of previous 5 years. There has been a significant reduction in mean minimum temperature by 3.85°C as compared to previous 5 years. The lower temperatures might reduce K, P and micronutrients uptake. Hence P and K need to be compensated by the extra application of 20% of recommended dose. For banana Zn SO₄ @ 0.5%, Fe SO₄ @ 0.2 %, Cu SO₄ @ 0.2 % and H₃BO₃ @ 0.1 % may be applied. For transplanted rabi vegetables, Arka Vegetable Special may be applied through foliar spray. If deficiency symptoms of micronutrients appear, corrective foliar application with the deficient micronutrient can be taken up.

Sparse flowering was observed during the fortnight in most commercial varieties / hybrids of mango such as Alphonso, Raspuri, Dushehari, Totapuri and Amrapali.

Incidence of insect pests

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Hoppers on mango:

- Incidence of hoppers is expected on mango. Spray Azadirachtin 10000 ppm @ 3 ml/L, if the hopper population is low to moderate. If the number exceeds 4 per panicle spray with imidacloprid 200 SL @ 0.3 ml/l or lambda cyhalothrin 5 EC @ 0.5 ml/l at early panicle emergence. This will also take care of thrips. Addition of sticker is essential. Avoid spraying on full bloom to protect pollinators.
- For organic orchards, application of entomopathogen *Metarhizium anisopliae* formulation @ 5ml/L is recommended.

Flower webbers/inflorescence caterpillars on mango:

- Besides hoppers, inflorescence caterpillars which web the flowers and feed inside are potential pests on mango during January. Application of lambda cyhalothrin 5EC @ 0.5ml/L or cypermethrin 25 EC @ 1ml/L are useful to control the pest.

Banana skipper:

- Skipper butterfly is becoming a serious pest on banana. The larvae roll the leaves and feed by remaining inside. Affected leaves to be mechanically removed and destroyed. In case of severe infestation, spraying of quinolphos 25EC @ 2ml/L or chlorpyrifos 20EC @ 2.5ml/L is advised.

Onion thrips

- Both on bulb and seed crops, thrips are expected to increase with ensuing rise in temperatures. Spraying with imidacloprid 17.8SL (0.3ml/L) or fipronil 5SC (1.5 ml/L) would be effective.

Tomato fruit borer:

- With the prevailing weather, incidence of tomato fruit borer may increase on tomato. For its management, spray *HaNPV* @ 250 LE/ha during evening hours or spray indoxacarb 14.5 SC @ 0.75ml/l or spinosad 45 SC @ 0.3ml/l, if the incidence is very high. Proper waiting periods are to be followed before harvest of tomatoes.

Tomato moth:

- Install tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5SC @ 0.75 ml/litre or spinosad 45SC @ 0.3ml/l

Midge on chillies:

- Severe incidence of midges is observed on chilli which causes maximum damage at flowering stage. Spray thiamethoxam 25WG @ 0.3 g/l for their management.

Black thrips on chilli (tentative management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under Nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG@40g/acre, Fipronil 40%+ imidacloprid 40% @40g/acre, Cyantraniliprole 10% @240ml/acre, acetamiprid 20SP@40g/acre, spirotetramat 150 OD@160ml/acre, pongamia oil 2.5ml/litre
- Every 15 days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (only under outbreak conditions).
- Note: None of these chemicals are approved by CIBRC, it's only an adhoc recommendation

Aphids on cucurbits

- Aphid infestation may increase on different cucurbits. Spray imidacloprid 17.8 SL @ 0.5 ml/l for their management.

Disease scenario**Fruit crops****Grapes**

- Rust might continue to be noticed in grape vine orchards (*var* Bangalore Blue) and could be managed by the treatment with Chlorothalonil 75%WP 2g /L/ Mancozeb 75% WP (2 g/L) along with sticker @ 0.5 ml/ l.

Papaya

- Infection of Black spot and powdery mildew may be noticed. Application of Thiophanate methyl 70% WP 1ml/L along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

Banana

- Sigatoka leaf spot (*Mycosphaerella* sp.), disease needs proper attention. Sigatoka could be managed by spraying propiconazole 25%EC (0.1%).

Vegetable crops

- Powdery mildew incidence will be high in all vegetables (solanaceous and cucurbitaceous). Hexaconazole 25 % EC at 1ml/L along with sticker 0.5ml/ l will be effective in controlling the powdery mildews in vegetables.

Ornamentals

- Powdery mildew severity increases in rose and gerbera. Spraying azoxystrobin 25 % SC at 1 ml/ l along with sticker 0.5ml/l will help in reducing powdery mildew spread under protected cultivation.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
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Period: 16th to 31st January, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
January	28.3	11.2	76.6	36.1	4.36	3.03	0.00
(16 - 31) 2023	(28.8)	(12.9)	(84.0)	(44.5)	(4.1)	(3.3)	(0.2)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

Fortnight from 16th to 31st January, 2023

During the Second fortnight of the month i.e., 16th to 31st January, 2023, the mean maximum and mean minimum temperature increased by 0.6 °C and 1.25 °C respectively as compared to previous fortnight. The mean maximum temperatures increased by 0.6 °C and mean minimum temperature decreased by 0.9 °C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning decreased by 4.5 % and in the afternoon increased by 0.6 % as compared to the previous fortnight. There is no rainfall reported during this fortnight.

Crop weather situation

In the fields with vegetables, in addition to frequent irrigation mulching may be provided to conserve moisture and to ensure prolonged availability of irrigated water to the plants. Spraying vegetable special may be followed for better yield & quality of vegetable crops. Spraying with Mango special in mango orchards can be taken up along with adequate irrigation.

Incidence of insect pests

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Hoppers on mango:

- Incidence of hoppers is expected on mango. Spray Azadirachtin 10000 ppm @ 3 ml/L, if the hopper population is low to moderate. If the number exceeds 4 per panicle spray with imidacloprid 200 SL @ 0.3 ml/l or lambda cyhalothrin 5 EC @ 0.5 ml/l at early panicle emergence. This will also take care of thrips. Addition of sticker is essential. Avoid spraying on full bloom to protect pollinators.
- For organic orchards, application of the entomopathogen *Metarhizium anisopliae* formulation @ 5ml/L is recommended.

Flower webbers/inflorescence caterpillars on mango:

- Besides hoppers, inflorescence caterpillars which web the flowers and feed inside are potential pests on mango during January. Application of lambda cyhalothrin 5EC @ 0.5ml/L or cypermethrin 25 EC @ 1ml/L are useful to control the pest.

Banana skipper:

- Skipper butterfly is becoming a serious pest on banana. The larvae roll the leaves and feed by remaining inside. Affected leaves to be mechanically removed and destroyed. In case of severe infestation, spraying of quinolphos 25EC @ 2ml/L or chlorpyrifos 20EC @ 2.5ml/L is advised.

Tomato fruit borer:

- With the prevailing weather, incidence of tomato fruit borer may increase on tomato. For its management, spray *HaNPV* @ 250 LE/ha during evening hours or spray indoxacarb 14.5 SC @ 0.75ml/l or spinosad 45 SC @ 0.3ml/l, if the incidence is very high. Proper waiting periods are to be followed before harvest of tomatoes.

Black thrips on chilli (tentative management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under Nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG @ 40g/acre, Fipronil 40% + imidacloprid 40% @ 40g/acre,

Cyantraniliprole 10% @240ml/acre, acetamiprid20SP@40g/acre, spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre

- Every 15days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (only under outbreak conditions).

Note: None of the above-mentioned chemicals are approved by CIBRC, it's only an adhoc recommendation

Aphids on cucurbits

- Aphid infestation may increase on different cucurbits. Spray imidacloprid 200 SL @ 0.5 ml/l or thiamethoxam 25 WG @ 0.3 g/l for their management.

Aphids on Beans and rose

- Aphids incidence is observed on beans and rose. Thoroughly spray neem soap or Pongamia soap (1 %) or pulverised neem seed powder extract (NSPE) 4 % for their management.

Thrips on rose

- For the management of thrips on rose, spray fipronil 5 SC @ 1.5 ml/litre or imidacloprid 200 SL @ 0.5 ml/l.

Mites on tomato

- Incidence of mites is observed and may increase on tomato. For their management spray spiromesfin 22.9 SC @ 1 ml/l or fenazaquin 10 EC @ 3 g/L.

Mites on Rose

- During the period, incidence of mites is observed heavily on roses grown under polyhouse conditions. Spray spiromesfin 22.9 SC @ 1 ml/l for their management.

Disease scenario

Disease management advisories based on the weather data of second fortnight of January 2023

Fruit crops:

Grapes

- Rust might continue to be noticed in grape vine orchards (*var* Bangalore Blue) and could be managed by the treatment with Chlorothalonil 75% WP 2g /L/ Mancozeb 75% WP (2 g/L) along with sticker @ 0.5 ml/ l.

Vegetable crops:

Chilli

- Powdery mildew incidence will be high in chilli. To manage this disease foliar spray of Tebuconazole 25% WG (1.5g/L) or Azoxystrobin 18.2% w/w + difenoconazole 11.4% w/w SC @1ml/L or Tebuconazole 50% + Trifloxystrobin 25% WG (0.5g/l) at 10 -12 day intervals (2-3 sprays) is required.

Ornamentals:

Rose

- Cool and dry weather conditions favour powdery mildews development in rose. The disease can be effectively managed by spraying Azoxystrobin 23% SC @1ml/L or Tebuconazole +Trifloxystrobin @ 1ml/L 2 times at 15 days interval.

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Period: 1st to 15th February, 2023

Latitude : 13°7' N

Longitude : 72°29' E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
February	30.6	10.5	69.1	28.9	5.7	3.2	0.0
(1 - 15) 2023	(30.2)	(14.0)	(76.5)	(37.8)	(5.1)	(3.8)	(2.4)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

Fortnight from 1st to 15th February, 2023

During the first fortnight of the month i.e., 1st to 15th February, 2023, the mean maximum temperature increased by 2.3°C and mean minimum temperature decreased by 0.7°C as compared to previous fortnight. The mean maximum and mean minimum temperatures increased by 1.4°C and 1.1°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and afternoon decreased by 7.5% and 7.2% respectively as compared to the previous fortnight. There is no rainfall reported during this fortnight.

Crop weather situation

The weather was very dry during last fortnight with high evaporation and no rainfall. Foliar application of nutrients in the evening in crops under active growth is suggested. Frequent irrigation with mulching to ensure better moisture availability is advised.

Incidence of insect pests

Under the prevailing weather situation, following pests are expected under Bangaluru conditions on various horticultural crops. Various management options for their management are mentioned below.

Hoppers on mango:

- Incidence of hoppers is expected on mango. Spray Azadirachtin 10000 ppm @ 3 ml/L, if the hopper population is low to moderate. If the number exceeds 4 per panicle spray with imidacloprid 200 SL @ 0.3 ml/l or lambda cyhalothrin 5 EC @ 0.5 ml/l at early panicle emergence. This will also take care of thrips. Addition of sticker is essential. Avoid spraying on full bloom to protect pollinators.
- For organic orchards, application of the entomopathogen *Metarhizium anisopliae* formulation @ 5ml/L is recommended.

Flower webbers/inflorescence caterpillars on mango:

- Besides hoppers, inflorescence caterpillars which web the flowers and feed inside are potential pests on mango during January. Application of lambda cyhalothrin 5EC @ 0.5ml/L or cypermethrin 25 EC @ 1ml/L are useful to control the pest.

Banana skipper:

- Skipper butterfly is becoming a serious pest on banana. The larvae roll the leaves and feed by remaining inside. Affected leaves to be mechanically removed and destroyed. In case of severe infestation, spraying of quinolphos 25EC @ 2ml/L or chlorpyrifos 20EC @ 2.5ml/L is advised.

Tomato fruit borer:

- With the prevailing weather, incidence of tomato fruit borer may increase on tomato. For its management, spray *HaNPV* @ 250 LE/ha during evening hours or spray indoxacarb 14.5 SC @ 0.75ml/l or spinosad 45 SC @ 0.3ml/l, if the incidence is very high. Proper waiting periods are to be followed before harvest of tomatoes.

Tomato moth:

- Install tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5 SC @ 0.75 ml/litre or spinosad 45 SC @ 0.3ml/l

Mites on tomato

- Incidence of mites is observed and may increase on tomato. For their management spray spiromesfin 22.9 SC @ 1 ml/l or fenazaquin 10 EC @ 3 g/L.

Midge on chilli:

- Severe incidence of midges is observed on chilli which causes maximum damage at flowering stage. Spray thiamethoxam 25 WG @ 0.3 g/l for their management.

Black thrips on chilli (Ad – hoc recommendation only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under Nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG@40g/acre, Fipronil40%+ imidacloprid40% @40g/acre, Cyantraniliprole 10% @240ml/acre, acetamiprid20SP@40g/acre, spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre
- Every 15days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (only under outbreak conditions).

Note: None of the above-mentioned chemicals are approved by CIBRC, it's only an adhoc recommendation

Mites on chilli

- For their management spray spiromesfin 22.9 SC @ 1 ml/l or fenazaquin 10 EC@ 3 g/L.

Aphids on cucurbits

- Aphid infestation may increase on different cucurbits. Spray imidacloprid 200 SL @ 0.5 ml/l or thiamethoxam 25 WG @ 0.3 g/l for their management.

Aphids on beans and rose

- Aphids incidence is observed on beans and rose. Thoroughly spray neem soap or Pongamia soap (1 %) or pulverised neem seed powder extract (NSPE) 4 % for their management.

Thrips on rose

- For the management of thrips on rose, spray fipronil 5 SC @ 1.5 ml/litre or imidacloprid 200 SL @ 0.5 ml/l.

Mites on rose

- During the period, incidence of mites is observed heavily on roses grown under polyhouse conditions. Spray spiromesfin 22.9 SC @ 1 ml/l for their management.

Disease scenario

Disease management advisories based on the weather data of First fortnight of February 2023

Fruit crops:

Grapes

- Anthracnose and powdery mildew infection maybe noticed. Application of Azoxystrobin 23% SC @ 1ml/L along with sticker @ 0.5 ml/ l is recommended for the management of diseases.

Mango

- Powdery mildew requires attention. Application of Hexaconazole 25%EC @ 1ml/L is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Thiophanate methyl @ 1ml/L is recommended along with sticker @ 0.5 ml/ L.

Vegetable crops:

- Powdery mildew incidence will be high in all vegetables (solanaceous and cucurbitaceous). Hexaconazole 25%EC @ 1g/L along with sticker 0.5ml/ l will be effective in controlling the powdery mildews in vegetables.

Ornamentals:

- Chrysanthemum rust severity increases. Spray of chlorothalonil 75%WP at 2g/L at 15 days interval will reduce the incidence. In severe cases it can be alternated with propiconazole 25%EC at 1ml/L.

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Period: 16th to 28th February, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
February (16 - 28) 2023	32.1	9.0	51.2	26.4	6.75	3.31	0.0
	(31.8)	(13.8)	(70.6)	(33.0)	(6.0)	(4.0)	(3.0)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

Fortnight from 16th to 28th February, 2023

During the Second fortnight of the month i.e., 16th to 28th February, 2023, the mean maximum temperature increased by 1.5°C and mean minimum temperature decreased by 1.5°C as compared to previous fortnight. The mean maximum temperature increased by 1.6°C and mean minimum decreased by 0.2°C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning increased by 17.9% and in the afternoon decreased by 2.5% as compared to the previous fortnight. There was no rainfall reported during this fortnight.

Crop weather situation

Frequent irrigation has to be provided to fruits and vegetable crops as the day temperature and evaporation rate are high. Boron application has to be provided for mango to avoid fruit drop and N & K for better size. Measures to conserve soil moisture have to be followed and soil application of fertilizers may be avoided.

❖ Incidence of insect pests

Under the prevailing weather situation, the following pests are expected under Bangalore conditions. Various pest management options are also mentioned below.

Hoppers on mango:

- On mango, incidence of hoppers may continue wherever flowering is delayed. Spray azadirachtin @ 3ml/L. or thiamethoxam @ 0.3 g/L or lambda cyhalothrin 5 EC @ 0.5 ml/l at early panicle emergence. This will also be helpful in checking the thrips.

Mango stone weevil management:

- Wherever fruits reached lemon size (2-4 cm diameter), a spray of deltamethrin 2.5 SC @ 1ml/L will be effective.

Fruit fly management:

- In orchards where fruit set occurred early and they attained full size, erect methyl eugenol based fruit fly traps @ 6/acre. Collect and destroy fallen fruits.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., Lambda cyhalothrin 5EC @1ml/l or indoxacarb 14.5SC@ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @2ml/l or IIHR neem soap @10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt@1ml or Azadirachtin 1% @2ml/l.

Flower webbers/inflorescence caterpillars on mango:

- Besides hoppers, inflorescence caterpillars which web the flowers and feed inside are potential pests on mango during January. Application of lambda cyhalothrin 5EC @ 0.5ml/L or cypermethrin 25 EC @1ml/L are useful to control the pest.

Mealy bugs on grapes:

- Incidence of mealybugs may increase during this period.
- Encourage natural enemies such as lady bird beetle. If incidence is high than spray difenthiuron 50 WP 1g/litre and repeat the spray after 2 weeks.

Leaf miner on tomato:

- Incidence of leaf miner is observed on tomato. For its management spray neem seed kernel extract 4% from nursery till flowering @ 7-10 days intervals.

Mites on tomato:

- For the management of mites on tomato, spray spiromesifen 22.9 SC @ 1ml/litre

Whiteflies on tomato:

- Incidence of whiteflies is noticed on tomato. For their management spray difenthiuron 50 WP 1g/litre.

Tomato moth:

- Install Tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5 SC @ 0.75 ml/litre or spinosad 45 SC @ 0.3ml/l

Brinjal shoot and fruit borer:

- For the management of brinjal shoot and fruit borer, spray rynaxypyr 18.5 SC @ 0.3 ml/l rotate with emamectin benzoate 5 SG 0.3g/liter followed by indoxacarb 14.5 SC @ 0.5 ml/litre.

Midge on chilli:

- Severe incidence of midges is observed on chilli which causes maximum damage at flowering stage. Spray thiamethoxam 25 WG @ 0.3 g/l for their management.

Black thrips on chilli (Ad – hoc recommendation only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under Nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG@40g/acre, Fipronil40%+ imidacloprid40% @40g/acre, Cyantraniliprole 10% @240ml/acre, acetamiprid20SP@40g/acre, spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre
- Every 15days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (only under outbreak conditions).

Note: None of the above-mentioned chemicals are approved by CIBRC, it's only an adhoc recommendation

Mites on chilli:

- For their management spray spiromesfin 22.9 SC @ 1 ml/l or fenazaquin 10 EC @ 3 g/L.

Thrips on rose:

- For the management of thrips on rose, spray fipronil 5 SC @ 1.5 ml/litre or imidacloprid 200 SL @ 0.5 ml/l.

❖ Disease scenario

Disease management advisories based on the weather data of Second fortnight of February 2023

Fruit crops:

Grapes

- Anthracnose may be noticed. For anthracnose application of Difenconazole (0.05%) + Mancozeb (0.2%) whereas for powdery mildew Application of Azoxystrobin (0.1%) along with sticker @ 0.5 ml/ l is recommended for the management of disease. Rust might continue to be noticed in grape vine orchards (var Bangalore Blue) and could be managed by the treatment with Chlorothalonil (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l.

Mango

- Powdery mildew requires attention. At this point of time application of wettable sulphur is not advisable because of high temperature. Anthracnose spots might further increase on foliage. Application of Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) is recommended along with sticker @ 0.5 ml/ l.
- Sooty mould should be still taken care. Application of Copper oxychloride (0.3%) along with sticker (@ 0.5 ml / L) is recommended. Further hopper and other insect management is important with suitable insecticides (Imidacloprid @ 0.5%).

Vegetable crops:

- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Tebuconazole (0.1%) /Difenconazole (0.05%) along with sticker 0.5ml/l will be effective.

Virus diseases:

- Change in weather especially low humidity with increase in temperature favours sucking pests which are vectors of many virus diseases. Seed treatment with imidacloprid or spray of acephate (0.2%) will be effective in controlling vector population.

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Latitude : 13⁰7¹ N

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Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
March	31.53	11.47	61.67	25.93	7.1	4.7	0.0
(1 - 15) 2023	(32.8)	(15.9)	(62.9)	(29.6)	(7.1)	(4.2)	(6.0)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

Fortnight from 1st to 15th March, 2023

During the first fortnight of the month i.e., 1st to 15th March, 2023, the mean maximum temperature decreased by 0.57°C and mean minimum temperature increased by 2.47°C as compared to previous fortnight. The mean maximum and mean minimum temperature increased by 1.0°C and 2.1 °C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning increased by 10.47% and in the afternoon decreased by 0.47% as compared to the previous fortnight. There was no rainfall reported during this fortnight.

Crop weather situation

The fortnight has been very dry with lower relative humidity and no rainfall. In fruit crops, wherever possible the basins should be covered with mulch to minimize evaporation & frequent irrigation to be provided to minimize fruit drop. A 0.1% Boric acid spray can be given in mango and papaya to reduce fruit drop.

❖ Incidence of insect pests

Under the prevailing weather situation, the following pests are expected under Bangalore conditions. Various pest management options are also mentioned below.

Hoppers on mango:

- On mango, incidence of hoppers may continue wherever flowering is delayed. Spray azadirachtin @ 3ml/L. or thiamethoxam @ 0.3 g/L or lambda cyhalothrin 5 EC @ 0.5 ml/l at early panicle emergence. This will also be helpful in checking the thrips.

Mango stone weevil management:

- Wherever fruits have reached lemon size (2-4 cm diameter), a spray of deltamethrin 2.5 SC @ 1ml/L will be effective.

Fruit fly management:

- In orchards where fruit set has occurred early and they have attained full size, erect methyl eugenol-based fruit fly traps @ 6/acre. Collect and destroy fallen fruits.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., Lambda cyhalothrin 5EC @1ml/l or indoxacarb 14.5SC@ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @2ml/l or IIHR neem soap @10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt@1ml or Azadirachtin 1% @2ml/l.

Mealy bugs on grapes:

- Incidence of mealybugs may increase during this period.
- Encourage natural enemies such as lady bird beetle. If incidence is high than spray difenthiuron 50 WP 1g/litre and repeat the spray after 2 weeks.

Leaf miner on tomato:

- Incidence of leaf miner is observed on tomato. For its management spray neem seed kernel extract 4% from nursery till flowering @ 7-10 days intervals.

Tomato moth:

- Install Tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5 SC @ 0.75 ml/litre or spinosad 45 SC @ 0.3ml/l

Mites on tomato:

- For the management of mites on tomato, spray spiromesifen 22.9 SC@ 1ml/litre

Whiteflies on tomato:

- Incidence of whiteflies is noticed on tomato. For their management spray difenthiuron 50 WP 1g/litre.

Black thrips on chilli (Ad – hoc recommendation only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG @40g/acre, fipronil40%+ imidacloprid 40% @40g/acre, Cyantraniliprole 10% @240ml/acre, acetamiprid 20SP@40g/acre, spirotetramat 150 OD @160ml/acre, pongamia oil 2.5ml/litre
- Every 15days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (only under outbreak conditions).

Note: None of the above-mentioned chemicals are approved by CIBRC, it's only an adhoc recommendation

Brinjal shoot and fruit borer:

- For the management of brinjal shoot and fruit borer, spray rynaxypyr 18.5 SC @ 0.3 ml/l rotate with emamectin benzoate 5 SG 0.3g/liter followed by indoxacarb 14.5 SC @ 0.5 ml/litre.

Thrips on rose:

- For the management of thrips on rose, spray fipronil 5 SC @ 1.5 ml/litre or imidacloprid 200 SL @ 0.5 ml/l

❖ **Disease scenario**

Disease management advisories based on the weather data of first fortnight of March 2023

Fruit crops:

Mango

- To manage anthracnose on leaves give foliar sprays with Carbendazim (1g/L) / Thiophanate methyl (1g/L) / Prochloraz (1g/L) or Chlorothalonil (2g/L) at 14 days intervals beginning fruits attaining pea nut size. Protective irrigation during water scarcity to reduce trees vulnerability to die back and gummosis infection.

Vegetable crops:

Tomato

- Virus diseases transmitted by sucking pests severity are expected to increase. To manage sucking pests spray neem oil (Azadirachtin 10000ppm) @2ml/L or neem soap or pongamia soap (10 g/l) spinosad @0.25ml/L spray, Give separate foliar spray of Sea weed Extract @2ml/L and additional spray of Arka vegetable Special @ 5g/L.

Flower crops:

Rose

- Warm and dry weather conditions favours powdery mildew development. The disease can be effectively managed by spraying Azoxystrobin (1ml/L) or Tebuconazole +Trifloxystrobin at (1ml/L) 3 to 4 times at 15 days interval.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 31st March, 2023

Latitude : 13°7' N

Longitude : 72°29' E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
March (16 - 31) 2023	32.64	18.56	79.19	42.06	6.46	2.31	47.40
	(34.2)	(17.5)	(69.3)	(32.0)	(7.1)	(3.6)	(13.7)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st March, 2023**

During the second fortnight of the month i.e., 16th to 31st March, 2023, the mean maximum and minimum temperature increased by 1.11°C and 7.09°C respectively as compared to the previous fortnight. The mean maximum and minimum temperature increased by 1.4°C and 1.6°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 17.52 % and 16.13 % respectively as compared to the previous fortnight. There was 47.40 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

Rainfall received in the fortnight is much lesser than average values of previous 5 years. Mulching may be applied to reduce the evaporation losses. Farmers may sow mucuna in mango, guava & sapota orchards as cover crop.

❖ **Incidence of insect pests**

Under the prevailing weather situation during second fortnight of March 2023, the following pests are expected under Bangalore conditions. Various pest management options are also mentioned below.

Hoppers on mango:

- On mango, incidence of hoppers may continue wherever flowering is delayed. Spray azadirachtin @ 3ml/L. or thiamethoxam @ 0.3 g/L or lambda cyhalothrin 5 EC @ 0.5 ml/l at early panicle emergence. This will also be helpful in checking the thrips.

Mango stone weevil management:

- Wherever fruits have reached lemon size (2-4 cm diameter), a spray of deltamethrin 2.5 SC @ 1ml/L will be effective.

Fruit fly management:

- In orchards where fruit set has occurred early and they have attained full size, erect methyl eugenol-based fruit fly traps @ 6/acre. Collect and destroy fallen fruits.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit.
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., lambda cyhalothrin 5EC @ 1ml/l or indoxacarb 14.5SC@ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @ 2ml/l or IIHR neem soap @ 10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt@ 1ml or azadirachtin 1% @ 2ml/l.

Mealy bugs on grapes:

- Incidence of mealybugs may increase during this period.
- Encourage natural enemies such as lady bird beetle. If incidence is high than spray difenthiuron 50 WP 1g/litre and repeat the spray after 2 weeks.

Leaf miner on tomato:

- Incidence of leaf miner is observed on tomato. For its management spray neem seed kernel extract 4% from nursery till flowering @ 7-10 days intervals.

Tomato moth:

- Install Tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre.
- Spray indoxacarb 14.5 SC @ 0.75 ml/litre or spinosad 45 SC @ 0.3ml/l

Mites on tomato:

- For the management of mites on tomato, spray spiromesifen 22.9 SC @ 1ml/litre.

Whiteflies on tomato:

- Incidence of whiteflies is noticed on tomato. For their management spray difenthiuron 50 WP 1g/liter.

Brinjal shoot and fruit borer:

- For the management of brinjal shoot and fruit borer, spray rynaxypyr 18.5 SC @ 0.3 ml/l rotate with emamectin benzoate 5 SG 0.3g/liter followed by indoxacarb 14.5 SC @ 0.5 ml/litre.

Black thrips on chilli (Adhoc recommendation only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to raise seedlings under nylon mesh thrips proof conditions and use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- Mix 1kg *Beauveria bassiana*, 1 kg *Lecanicillium lecanii* , 2 kg jaggery, 2 kg gram individually , filter and make up volume to 200 liters (1 acre) and close air tight for 5-6 days and spray on the crop.
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG @40g/acre, fipronil40%+ imidacloprid 40% @40g/acre, cyantraniliprole 10% @240ml/acre, acetamiprid 20SP@40g/acre, spirotetramat 150 OD @160ml/acre, pongamia oil 2.5ml/litre
- At every 15days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (only under outbreak conditions).

Note: None of the above-mentioned chemicals are approved by CIBRC, it's only an adhoc recommendation

Thrips on rose:

- For the management of thrips on rose, spray fipronil 5 SC @ 1.5 ml/litre or imidacloprid 200 SL @ 0.5 ml/l.

❖ **Disease scenario**

Disease management advisories based on the weather data of second fortnight of March 2023

Fruit crops:

Mango

- Severity of Anthracnose spots might increase. Anthracnose spots might further increase on foliage. The anthracnose could be effectively managed by four pre harvest sprayings with Carbendazim (1g/L) / Thiophanate methyl (1g/L) / Prochloraz (1g/L) or Chlorothalonil (2g/L) at 14 days interval beginning fruits attaining pea nut size.

Grape

- Anthracnose infection maybe noticed. Application of Thiophanate methyl (1g/L) / Carbendzim + Mancozeb (2g/L) along with sticker @ 0.5 ml/ l is recommended for the management of disease.

Vegetable crops:

Tomato

- Change in weather especially low humidity with increase in temperature favours sucking pests which are vectors of many virus diseases. Manage vectors with insecticide application; Neem oil (Azadirachtin 10000ppm) @2ml/L or spinosad0.25ml/L spray. Give foliar spray of Arka Vegetable Special@ 5g/L to enhance disease tolerance. Foliar spray of Sagarika (Organic bio-stimulant /Sea weed extract-IFFCO) @ 2ml per litre to enhance tolerance to virus diseases.

Chilli

- Powdery mildew severity in chilli increases under prevalent weather condition. For powdery mildew management application of Difenconazole (0.5ml/L) is recommended.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th April, 2023

Latitude : 13⁰7¹ N

Longitude : 72⁰29¹E

Altitude : 890 M

Fortnight	Temperature (⁰ C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
April	33.70	17.75	73.33	34.87	7.25	2.75	1.0
(1 - 15) 2023	(34.5)	(18.9)	(69.2)	(33.4)	(6.8)	(3.6)	(13.4)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th April, 2023**

During the first fortnight of the month i.e., 1st to 15th April, 2023, the mean maximum temperature increased by 1.06°C and mean minimum temperature decreased by 0.81°C as compared to the previous fortnight. The mean maximum and minimum temperature increased by 0.3°C and 1.4°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon decreased by 5.86 % and 7.19 % respectively as compared to the previous fortnight. There was 1.0 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

The fortnight has been dry with almost no rainfall. Low moisture in soil might result in limited nutrient uptake. Vegetable special may be sprayed on vegetable crops and banana special spray may be taken up in banana. Frequent protective irrigations are necessary for vegetables and other crops in prime growth stage.

❖ **Incidence of insect pests**

Under the prevailing conditions, the following pests are expected under Bangalore condition. Expected pests and their management are presented below.

Mango fruit fly, *Bactrocera dorsalis*:

As the fruits have attained maturity stage, incidence of fruit fly is expected. For its management following management measures are suggested.

Management:

- Install methyl eugenol traps @ 6 /acre. Traps can be procured from IIHR or KVKs or firms licensed to manufacture IIHR traps.
- Collection and destruction of fallen fruits
- Bait splash on tree trunks with 10% jaggery solution mixed with deltamethrin 2.8EC (5ml/litre)
- Community approach at village level is recommended for the effective management of this pest.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit.
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., lambda cyhalothrin 5EC @ 1ml/l or indoxacarb 14.5SC @ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @ 2ml/l or IIHR neem soap @ 10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt @ 1ml or azadirachtin 1% @ 2ml/l.

Grapes Flea Beetle: Incidence of flea beetle is expected on newly pruned vines.

Management

- Remove all loose bark
- Rake the soil in basin to expose grubs and pupae to sunlight
- At early bud sprout –spray of imidacloprid 200 SL @ 0.3ml/L or Lambda-cyhalothrin 5 EC @ 0.5ml/L

Grape thrips: On newly pruned grapes, thrips infestation on leaves is expected. Spray *Metarhizium anisopliae* formulation @ 2ml/L two times at weekly interval or fipronil 5SC @ 1.5 ml/L twice at fortnightly interval

Brinjal shoot and fruit borer:

- Release of *Trichogramma chilonis* @ 75,000 per week (for four weeks), if the incidence is moderate.
- Install pheromone traps in the field
- If the incidence is very severe, for the management of brinjal shoot and fruit borer, spray Rynaxypyr 20 SC @ 0.3 ml/l rotate with Emamectin benzoate 5 SG @ 0.3g/liter followed by indoxacarb 14.5 SC @ 0.75 ml/litre.

Mites on tomato and Ridge gourd

- Rising temperatures favour mite multiplication. For the management of mites, spray spiromesifen 22.9SC @ 0.5ml/L or fenazaquin 10 EC @ 1.5ml/L at fortnight interval.

Black thrips on chilli (Adhoc recommendation only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid solution @ 0.5 ml per litre of water for one hour during transplanting
- Mix 1kg *Beauveria bassiana*, 1 Kg *Lecanicillium lecanii* , 2 kg jaggery, 2kg gram individually , filter and make up volume to 200 liters (1 acre) and close air tight for 5-6 days and spray on the crop.
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+, neem oil 2.5ml/litre, fipronil 80WG@40g/acre, Fipronil 40%+imidacloprid 40% @40g/acre, Cyantraniliprole 10% @240ml/acre , acetamiprid 20SP@40g/acre, spirotetramat 150OD@160ml/acre, pongamia oil 2.5ml/litre.
- Every 15 days interval chlorpyrifos soil drenching is required to kill pupa that are in soil (**only under outbreak conditions**).

Note: None of the above-mentioned chemicals are approved by CIBRC, it's only an adhoc recommendation

Two spotted spider mite, *Tetranychus urticae* on rose

Management:

- During the period, severe incidence of mites is observed on roses grown under polyhouse conditions. Spray abamectin 1.9EC @ 0.5 ml/l or fenazaquin 10 EC @ 1.5ml/L at fortnight interval for their management.

❖ **Disease scenario**

Disease advisories based on the weather data for first fortnight of April 2023

Fruit crops:

Mango

- To prevent anthracnose on fruits give pre harvest sprays with Carbendazim (1g/L) / Thiophanate methyl (1g/L / Prochloraz (1g/L) or Chlorothalonil (2g/L) at 14 days interval. Give protective irrigation during water scarcity to reduce trees vulnerability to die back and gummosis infection

Papaya

- To manage Papaya Ring spot virus apply FYM enriched (25 kg/ plant) + Arka Microbial Consortium (50 g/plant) + bioagents (Pseudomonas + Pochonia + Trichoderma) + 250g neem cake to soil. Give foliar spray of neem oil @2ml/l. Give additional spray of sagarika @ 2.0ml/L

Vegetable crops:

Cucurbits

- Change Gummy stem blight disease severity is expected to increase. To manage this disease give protective sprays with. Chlorothalonil 75%WP@ 2g/L, followed by foliar spray of tebuconazole.25.9 EC @ 1ml/L. Provide optimum irrigation to prevent splitting of stems.

Chilli

- Prevailing weather conditions aggravate Chilli leaf curl virus problem in chilli. To manage vectors transmitting this disease follow insecticide application; Neem oil (Azadirachtin 10000ppm) @2ml/L, Imidachloprid 70%WG @ 2g/15L, neem soap or pongamia soap (5g/l), Spinosad 0.25ml/L. To enhance disease tolerance give foliar spray of sea weed extract Sagarika @ 2.0ml/L

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 30th April, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
April	33.94	19.17	75.73	40.40	6.85	3.02	4.8
(16 - 30) 2023	(34.6)	(22.3)	(73.0)	(40.9)	(6.2)	(3.2)	(43.6)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 30th April, 2023**

During the second fortnight of the month i.e., 16th to 30th April, 2023, the mean maximum and mean minimum temperature increased by 0.24°C and 1.42°C respectively as compared to the previous fortnight. The mean maximum and mean minimum temperature increased by 0.1°C and 3.4°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 2.4 % and 5.53 % respectively as compared to the previous fortnight. There was 4.8 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

Compared to last five years average, very less rainfall (about 11%) was received in the fortnight. Deep ploughing/digging can be taken up in the interrow vacant areas of fruit crops to facilitate percolation of pre monsoon rains which will increase the storage of moisture in soil. Farmers are advised to draw soil samples and get it analyzed before sowing or planting of kharif crops.

❖ **Incidence of insect pests**

Under the prevailing conditions, the following pests are expected under Bangalore condition. Expected pests and their management are presented below.

Mango fruit fly, *Bactrocera dorsalis*:

As the fruits have attained maturity stage, incidence of fruit fly is expected. For its management following management measures are suggested.

Management:

- Install methyl eugenol traps @ 6 /acre. Traps can be procured from IIHR or KVKs or firms licensed to manufacture IIHR traps.
- Collection and destruction of fallen fruits
- Bait splash on tree trunks with 10% jaggery solution mixed with deltamethrin 2.8EC (5ml/litre)
- Community approach at village level is recommended for the effective management of this pest.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit.
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., lambda cyhalothrin 5EC @ 1ml/l or indoxacarb 14.5SC @ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @ 2ml/l or IIHR neem soap @ 10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt @ 1ml or azadirachtin 1% @ 2ml/l.

Grapes Flea Beetle: Incidence of flea beetle is expected on newly pruned vines.

Management

- Remove all loose barks
- Rake the soil in basin to expose grubs and pupae to sunlight
- At early bud sprout –spray of imidacloprid 200 SL @ 0.3ml/L or Lambda-cyhalothrin 5 EC @ 0.5ml/L

Grape thrips: On newly pruned grapes, thrips infestation on leaves is expected. Spray *Metarhizium anisopliae* formulation @ 2ml/L two times at weekly interval or fipronil 5SC @ 1.5 ml/L twice at fortnightly interval

Brinjal shoot and fruit borer:

- Release of *Trichogramma chilonis* @ 75,000 per week (for four weeks), if the incidence is moderate.
- Install pheromones traps in the field
- If the incidence is very severe, for the management of brinjal shoot and fruit borer, spray Rynaxypyr 20 SC @ 0.3 ml/l rotate with Emamectin benzoate 5 SG @ 0.3g/liter followed by indoxacarb 14.5 SC @ 0.75 ml/litre.

Mites on tomato and Ridge gourd

- Rising temperatures favour mite multiplication. For the management of mites, spray spiromesifen 22.9SC @ 0.5ml/L or fenazaquin 10 EC @ 1.5ml/L at fortnight interval.

Thrips, *Scirtothrips dorsalis* on chilli

- Incidence of thrips may increase on chilli and capsicum. For its management, spray fipronil 5SC @ 1.5 ml/l or spinetoram 11.7 SC@ 1ml/litre or spinosad 45 SC @ 0.5ml/litre alternating with imidacloprid 200 SL @ 0.5 ml/l at fortnightly interval if the crop is at early stage of infestation. Addition of 2 ml of neem oil or pongamia oil per every litre of insecticide spray solution enhances the efficacy of the chemicals against the pest.

Two spotted spider mite, *Tetranychus urticae* on rose

Management:

- Spray abamectin 1.8 EC @ 0.5 ml/l under polyhouse conditions.

❖ Disease scenario

Disease advisories based on the weather data for second fortnight of April 2023

Fruit crops:

Mango

- With summer shower, anthracnose spots spread on foliage and start appearing on fruits. To manage this disease spray chlorothalonil 75% WP or mancozeb 75% WP@ 2g/L. If severity is more spray azoxystrobin 23% SC (1ml/l) or tebuconazole 50% + trifloxystrobin 25% WG (0.75 to 1g/l) or carbendazim 12% + mancozeb 63% WP (1.5g/l). Addition of sticker @ 0.5 ml/ l while spraying is recommended.

Vegetable crops:

Tomato and Brinjal

- Bacterial wilt problem is expected to aggravate in solanaceous crops like tomato, brinjal and capsicum. Soil drench with copper oxychloride 50% WP @ (3g/l) to wilt and

surrounding plants. Regulate irrigation, do not over irrigate. Avoid root damage during inter-cultivation or weeding in case of non mulched crop.

Chilli

- Warm and dry weather with intermittent rain increases chilli leaf curl disease intensity. Field spread occurs due to whitefly insect vector. To manage this insect vector spray neem soap/pongamia soap @10g/L or neem oil 2ml/L. To enhance disease tolerance, give foliar spray of Arka vegetable special@ 3g/L and separate foliar spray of Sagarika @ 2ml per litre.

Flower crops:

Gladiolus

- Fusarium corms rot and wilt increases with prevailing high temperature in gladiolus. To manage this disease follow corm treatment and drenching with carbendazim 50%WP @1g/l or tricyclazole 75% WP@1g/l. Alternatively treat corm treatment and drenching with *Bacillus amyloliquefaciens* @ 5ml/l and 7-10 ml/L(drenching) can be done at 10-15 days interval. Maintain optimum soil moisture after drenching bio-agent.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th May, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
May	31.05	21.29	88.87	62.93	4.92	2.07	109.4
(1 - 15) 2023	(33.7)	(21.2)	(78.2)	(49.2)	(5.6)	(3.7)	(63.0)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th May, 2023**

During the first fortnight of the month i.e., 1st to 15th May, 2023, the mean maximum temperature decreased by 2.89°C and mean minimum temperature increased by 2.12°C as compared to the previous fortnight. The mean maximum and minimum temperature decreased by 0.9°C and 1.1°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 13.14 % and 22.53% respectively as compared to the previous fortnight. There was 109.4 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

The fortnight has received a significantly higher rainfall compared to the average rainfall of last five years. Higher rainfall may increase fruit drop in mango. In crops like papaya which do not tolerate water stagnation, adequate drainage may be provided to remove excess standing water. In acidic soils, lime application may be taken up.

❖ **Incidence of insect pests**

Under the prevailing conditions, the following pests are expected under Bangaluru condition. Expected pests and their management are presented below:

Mango fruit fly, *Bactrocera dorsalis*:

As the fruits have attained maturity stage, incidence of fruit fly is expected. For its control following management measures are suggested.

Management:

- Install methyl eugenol traps @ 6 /acre. Traps can be procured from IIHR or KVKs or firms licensed to manufacture IIHR traps.
- Collection and destruction of fallen fruits
- Community approach at village level is recommended for the effective management of this pest.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit.
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., lambda cyhalothrin 5EC @ 1ml/l or indoxacarb 14.5SC @ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @ 2ml/l or IIHR neem soap @ 10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt@ 1ml or azadirachtin 1% @ 2ml/l.

Brinjal shoot and fruit borer:

- Release of *Trichogramma chilonis* @ 75,000 per week (for four weeks), if the incidence is moderate.
- Install pheromones traps in the field
- Collect and destroy all the affected shoot and fruits
- Spray Rynaxypyr 20 SC @ 0.3 ml/l rotate with Emamectin Benzoate 5 SG @ 0.3g/litre followed by indoxacarb 14.5 SC @ 0.75 ml/litre.

Thrips, *Scirtothrips dorsalis* on chilli

- Incidence of thrips may increase on chilli and capsicum. For its management, spray fipronil 5SC @ 1.5 ml/l or spinetoram 11.7 SC @ 1ml/litre or spinosad 45 SC @ 0.5ml/litre alternating with imidacloprid 200 SL @ 0.5 ml/l at fortnightly interval if the crop is at early stage of infestation. Addition of 2 ml of neem oil or pongamia oil per every litre of insecticide spray solution enhances the efficacy of the chemicals against the pest.

Two spotted spider mite, *Tetranychus urticae* on rose

Management:

- Spray abamectin 1.8 EC @ 0.5 ml/l under polyhouse conditions.

❖ **Disease scenario**

Disease advisories based on the weather data for first fortnight of May 2023

Fruit crops:

Mango

- Stem end rot occur on mango fruits. Do careful harvesting and handling of the fruits to avoid bruise. Harvest fruits with 1- 2'' pedicle attached to avoid Lasiodiplodia fruit rot.

Pomegranate

- Nodal Blight needs further attention due to the intermittent summer showers. Spraying of copper oxy chloride along with the sticker @ 0.5ml/l should be followed at 15 - 20 days interval.

Banana

- Incidence of Sigatoka and other leaf spots needs attention. The disease can be managed by the foliar application of propiconazole 25% EC @ 1ml/L

Vegetable crops:

Tomato

- Under prevailing weather conditions of summer showers, bacterial leaf and fruit spot infection appears on fruits and leaves. To manage this disease give protective foliar spray with copper oxychloride 50% WP @ (3g/l), three sprays at 15 day intervals.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 31st May, 2023

Latitude : 13⁰7¹ N

Longitude : 72⁰29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
May	33.21	21.04	83.31	53.75	5.82	2.04	41.50
(16 - 31) 2023	(32.20)	(20.9)	(82.5)	(55.7)	(5.5)	(4.4)	(103.7)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st May, 2023**

During the second fortnight of the month i.e., 16th to 31st May, 2023, the mean maximum temperature increased by 2.05°C and mean minimum temperature decreased by 0.25°C as compared to the previous fortnight. The mean maximum and minimum temperature decreased by 1.5°C and 0.3°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon decreased by 5.56% and 9.18% respectively as compared to the previous fortnight. There was 41.50 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

The fortnight has received very less rainfall than the average of last five years. Farmers are advised to go for ploughing wherever soil moisture condition is favorable. After adequate moisture is built up in soil, basal dose of fertilizer application may be taken up in fruit crops. If not already done, it is time for lime application and incorporation into soil in acidic soils.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Different management options for their management are mentioned below.

Mango stem borer:

- This period coincides with the emergence of adult beetles of trunk borer, *Batocera rufomaculata*. Plug active holes (can be diagnosed with the presence of fresh chewed wood material and excreta) with cotton dipped in dichlorovos @ 5ml/L and close with mud. Affected tree trunks can be wrapped with nylon mesh to trap the emerging beetles.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit.
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., lambda cyhalothrin 5EC @ 1ml/l or indoxacarb 14.5SC @ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @ 2ml/l or IIHR neem soap @ 10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt @ 1ml or azadirachtin 1% @ 2ml/l.

Fruit fly on cucurbits:

- For the management of fruit fly (*Zeugodacus cucurbitae*) on cucurbits, following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.

Thrips, *Scirtothrips dorsalis* on chilli:

- Incidence of thrips may increase on chilli and capsicum. For its management, spray fipronil 5SC @ 1.5 ml/l or spinetoram 11.7 SC @ 1ml/litre or spinosad 45 SC @ 0.5ml/litre alternating with imidacloprid 200 SL @ 0.5 ml/l at fortnightly interval if the crop is at early stage of infestation. Addition of 2 ml of neem oil or pongamia oil per every litre of insecticide spray solution enhances the efficacy of the chemicals against the pest.

Root-knot nematode in tomato:

- Raise healthy transplants on soil applied with FYM or vermicompost @ 5 tons/ha enriched with *Trichoderma harzianum* @ 2kg + *Paecilomyces lilacinus* @ 2kg + *Pseudomonas fluorescens* @ 2kg /ton of FYM.

- In standing crop, apply neem cake enriched with above biopesticides @ 50g/ m². This can also be mixed with water and applied as soil drench @ 2l/m². The same can be thoroughly filtered and sent along with drip or sprayed.

Whitefly on Gerbera (polyhouses):

- Spray diafenthiuran 50WP @ 1 g/l followed by dinetofuran 20SG @ 1g/litre
- Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population.

Rose Thrips:

- Spray imidacloprid 17.8SL @ 0.5 ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with imidacloprid 17.8SL @ 0.5ml/l for killing pupae in the soil.

Midge on crossandra:

- Incidence of midge is increasing on crossandra. For its management spray imidacloprid 17.8SL @ 0.5 ml/l.

❖ Disease scenario

Disease advisories based on the weather data for second fortnight of May 2023

Fruit crops:

Papaya

- Infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may further increase. Application of Thiophanate methyl m @ 1g/L along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

Pomegranate

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may increase further. Application of Chlorothalonil @ 2g/l along with the sticker @ 0.5ml/l is effective for the disease control. Nodal Blight needs further attention. Application of Copper Oxy Chloride @2g/l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

Vegetable crops:

Tomato

- In tomato it is time to monitor the bacterial spot and canker. Continuous rain and warm weather favour the disease. Spray of copper oxy chloride @3g/l to reduce the disease spread.

Flower Crops:**Rose**

The black spot of rose can be managed by spray with trifloxystrobin + tebuconazole@ 1g/l at 15 days interval

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th June, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
June	31.78	21.49	86.00	61.13	6.01	4.43	37.60
(1 - 15) 2023	(30.6)	(20.7)	(85.0)	(64.5)	(5.2)	(5.9)	(57.0)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th June, 2023**

During the first fortnight of the month i.e., 1st to 15th June, 2023, the mean maximum temperature decreased by 1.43°C and mean minimum temperature increased by 0.45°C as compared to the previous fortnight. The mean maximum and minimum temperature decreased by 1.6°C and 0.2°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 2.69 % and 7.38 % respectively as compared to the previous fortnight. There was 37.60 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

High temperature and low rainfall were recorded in the last fortnight compared to the average of previous 5 years. Wherever soil moisture is conducive field preparation, basal dose of FYM and fertilizer application may be taken up for kharif vegetable crops.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Different management options for their management are mentioned below.

Mango stem borer:

- This period coincides with the emergence of adult beetles of trunk borer, *Batocera rufomaculata*. Plug active holes (can be diagnosed with the presence of fresh chewed wood material and excreta) with cotton dipped in chlorpyrifos @ 5ml/L and close with mud. In case of severe infestation IIHR developed Sealer cum healer can be used. Affected tree trunks can be wrapped with nylon mesh to trap the emerging beetles.

Mango fruit borer:

- Collect the fallen fruits at regular intervals and destroy or bury them in a pit.
- First spray has to be given when fruits are at lemon size with any one of the insecticides viz., lambda cyhalothrin 5EC @ 1ml/l or indoxacarb 14.5SC @ 0.75ml/l or spinetoram 11.7SC @ 1.25ml/l. This has to be followed by second spray after 12-15 days with a botanical pesticide, azadirachtin 10000ppm @ 2ml/l or IIHR neem soap @ 10g/l.
- In case of orchards following organic /non chemical farming, first spray can be taken up with either Bt @ 1ml or azadirachtin 1% @ 2ml/l.

Fruit fly on cucurbits:

- For the management of fruit fly (*Bactrocera cucurbitae*) on cucurbits, following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.

Thrips, *Scirtothrips dorsalis* on chilli:

- Incidence of thrips may increase on chilli and capsicum. For its management, spray fipronil 5SC @ 1.5 ml/l or spinetoram 11.7 SC @ 1ml/litre or spinosad 45 SC @ 0.5ml/litre alternating with imidacloprid 200 SL @ 0.5 ml/l at fortnightly interval if the crop is at early stage of infestation. Addition of 2 ml of neem oil or pongamia oil per every litre of insecticide spray solution enhances the efficacy of the chemicals against the pest.

Root-knot nematode in tomato:

- Raise healthy transplants on soil applied with FYM or vermicompost @ 5 tons/ha enriched with *Trichoderma harzianum* @ 2kg + *Paecilomyces lilacinus* @ 2kg + *Pseudomonas fluorescens* @ 2kg /ton of FYM.
- In standing crop, apply neem cake enriched with above biopesticides @ 50g/ m². This can also be mixed with water and applied as soil drench @ 2l/m². The same can be thoroughly filtered and sent along with drip or sprayed.

Whitefly on Gerbera (polyhouses):

- Spray diafenthiuran 50WP @ 1 g/l followed by dinetofuran 20SG @ 1g/litre
- Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population.

Rose Thrips:

- Spray imidacloprid 17.8SL @ 0.5 ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with imidacloprid 17.8SL @ 0.5ml/l for killing pupae in the soil.

Midge on crossandra:

- Incidence of midge is increasing on crossandra. For its management spray imidacloprid 17.8SL @ 0.5 ml/l.

❖ Disease scenario

Disease advisories based on the weather data for the first fortnight of June 2023.

Fruit crops:

Mango

- Anthracnose and stem end rot are common in mango fruits during ripening. To avoid stem end rot harvest the fruit along with pedicel. Post-harvest treatment with hot water (52 oC) for ten minutes is also recommended to manage anthracnose.

Grape

- Grapevines should be continued to be protected against the infection of downy mildew by the application of 0.4g Dimethomorph + 2.00 g Mancozeb /l along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly.

Vegetable crops:

Tomato

- The continuous rain and warm weather favour bacterial leaf & fruit spot spread. To manage this disease foliar spray with copper oxychloride 50% WP @ (3g/l) is recommended.

Capsicum

- Prevailing rains increases damping off and wilt. To reduce this soil borne diseases, follow enrichment of FYM with Seed pro /Arka Microbial consortium and soil application to planting bed. Follow raised bed planting with proper drainage.

Flower Crops:

Rose

Black spot is likely to aggravate under prevailing weather conditions. The black spot of rose can be managed by spray with trifloxystrobin + tebuconazole @ 1g/l at 15 days int

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 30th June, 2023

Latitude : 13⁰7¹ N

Longitude : 72⁰29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
June	29.20	20.99	88.93	69.47	4.55	3.96	52.70
(16 - 30) 2023	(29.8)	(20.3)	(83.9)	(63.4)	(4.4)	(6.6)	(50.0)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 30th June, 2023**

During the second fortnight of the month i.e., 16th to 30th June, 2023, the mean maximum and minimum temperature decreased by 2.58° and 0.5°C respectively as compared to the previous fortnight. The mean maximum and minimum temperature decreased by 0.8°C and 0.4°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 2.93 % and 8.34 % respectively as compared to the previous fortnight. There was 52.70 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

The fortnight has received slightly higher rainfall than the average of last five years. Wherever sufficient soil moisture is there, field preparation may be completed so that transplanting of vegetable seedlings can be taken up. Full dose of FYM and recommended basal dose of N, P and K fertilizers for intended vegetable or fruit crop may be applied and incorporated well into the soil.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangaluru conditions on various horticultural crops. Various management options for their management are as below.

Mango stem borer:

- This period coincides with the emergence of adult beetles of trunk borer, *Batocera rufomaculata*. Plug active holes (can be diagnosed with the presence of fresh chewed wood material and excreta) with cotton dipped in chlorpyrifos @ 5ml/L and close with mud. In case of severe infestation IIHR developed Sealer cum healer can be used.

Fruit fly on cucurbits:

- For the management of fruit fly (*Bactrocera cucurbitae*) on cucurbits, following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.

Chilli Thrips

- Grow border crop (two rows) like maize 20-25 days before transplantation of main crop
- Install blue sticky traps @ 12-15/acre
- Need based spray of fipronil 5SC @ 1.5 ml/l or spinetoram 11.7 SC @ 1ml/litre or spinosad 45 SC @ 0.5ml/litre alternating with imidacloprid 200 SL @ 0.5 ml/l at fortnightly interval if the crop is at early stage of infestation.
- Addition of 2 ml of neem oil or pongamia oil per every litre of insecticide spray solution enhances the efficacy of the chemicals against the pest.

Cut worms

- Incidence of cutworms may be seen up to 15-20 days after transplantation of vegetable crops
- Young seedlings will be cut at ground level by cut worm larvae during night time
- Drench the soil around the root zone of the crop with imidacloprid 200 SL @ 5ml/l for killing larvae in the soil

Root-knot nematode in tomato:

- Raise healthy transplants on soil mixed with Neem cake @ 50kg + *Trichoderma harzianum* @ 1kg + *Paecilomyces lilacinus* @ 1kg /ton of soil.
- Apply 2 kg of Farm yard manure enriched with bio-pesticides *T. harzianum* and *P. lilacinus* at the time of planting

Legumes pod borer

- Spray indoxacarb 14.5 SC @ 0.75ml/litre at 10 days interval from flowering stage.

Whitefly on Gerbera (Under polyhouses condition):

- Spray diafenthiuran 50WP @ 1 g/l followed by dinetofuran 20SG @ 1g/litre
- Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population.

Rose Thrips:

- Spray imidacloprid 17.8SL @ 0.5 ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with imidacloprid 17.8SL @ 0.5ml/l for killing pupae in the soil.

Midge on crossandra:

- Incidence of midge is increasing on crossandra. For its management spray imidacloprid 17.8SL @ 0.5 ml/l.

❖ Disease scenario

Disease advisories based on the weather data for the second fortnight of June 2023.

Fruit crops:

Mango

- Apply Bordeaux paste to tree trunk up to 1m from ground. Spray Carbendazim (1g/L) or Thiophanate methyl (1g/L) or Chlorothalonil (2g/L) to control foliar blights and anthracnose. Follow field sanitation by weeding, collection and burning of infected plant parts.

Banana

- With monsoon rains, intensity of Sigatoka leaf spot increases on leaves. To manage Sigatoka leaf spot spray carbendazim+mancozeb (2g/L) or Propiconazole (1ml/L) along with spray adjuvant (0.5 ml/L).

Papaya

- Black spot intensity increases on leaves and fruits with prevailing rains. To manage this disease, remove and destroy dried infected leaves. It should be followed with foliar spray with Thiophanate methyl (1g/L).

Vegetable crops:

Tomato

- The Early blight start appearing on low lying leaves. Remove and destroy lower most old and diseased leaves in the morning. It should be followed by foliar application of mancozeb (2g/l) or tebuconazole 50% + trifloxystrobin 25% WG (0.75g/l) at fortnightly interval.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th July, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
July (1 - 15)	28.3	20.8	92.4	72.8	4.0	4.5	51.0
2023	(29.0)	(20.6)	(83.6)	(64.1)	(4.1)	(7.2)	(61.2)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th July, 2023**

During the first fortnight of the month i.e., 1st to 15th July, 2023, the mean maximum and minimum temperature decreased by 0.9°C and 0.19°C respectively as compared to the previous fortnight. The mean maximum temperature decreased by 0.8°C and mean minimum temperature increased by 0.3°C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 3.47 % and 3.33 % respectively as compared to the previous fortnight. There was 51.00 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

Compared to the average of last five years, less rainfall is received in this fortnight. Foliar application of Arka vegetable special may be given for standing vegetable crops. Excess nitrogen application should be avoided in tomato. Basin cleaning & fertilizer application may be carried out in perennial fruit crops. Foliar spray of nitrogen, potassium, zinc and boron may be given to guava crop which will help in getting bigger sized fruits.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bengaluru conditions on various horticultural crops. Various management options for their management are as below.

Mango stem borer:

- This period coincides with the emergence of adult beetles of trunk borer, *Batocera rufomaculata*. Plug active holes (can be diagnosed with the presence of fresh chewed wood material and excreta) with cotton dipped in chlorpyrifos @ 5ml/L and close with mud. In case of severe infestation IIHR developed Sealer cum healer can be used.

Fruit fly on cucurbits:

- For the management of fruit fly (*Bactrocera cucurbitae*) on cucurbits, the following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.

Chilli Thrips

- Incidence of thrips may increase on chilli and capsicum. For its management, **need based spray** of fipronil 5SC @ 1.5 ml/l or spinetoram 11.7 SC @ 1ml/litre or spinosad 45 SC @ 0.5ml/litre alternating with imidacloprid 200 SL @ 0.5 ml/l at fortnightly interval if the crop is at early stage of infestation. Addition of 2 ml of neem oil or pongamia oil per every litre of insecticide spray solution enhances the efficacy of the chemicals against the pest.

Cut worms

- Incidence of cutworms may be seen up to 15-20 days after transplantation of vegetable crops
- Young seedlings will be cut at ground level by cut worm larvae during night time
- Drench the soil around the root zone of the crop with imidacloprid 200 SL @ 5ml/l for killing larvae in the soil

Legumes pod borer

- **Need based Spray** spinosad 45 SC @ 0.5ml/litre or indoxacarb 14.5 SC @ 0.75ml/litre at 10 days interval from flowering stage

Root-knot nematode in tomato:

- Raise healthy transplants on soil applied with FYM or vermicompost @ 5 tons/ha enriched with *Trichoderma harzianum* @ 2kg + *Paecilomyces lilacinus* @ 2kg + *Pseudomonas fluorescens* @ 2kg /ton of FYM.

- In standing crop, apply neem cake enriched with above biopesticides @ 50g/ m². This can also be mixed with water and applied as soil drench @ 2l/m². The same can be thoroughly filtered and sent along with drip or sprayed.

Root-knot nematode in Okra

- Seed treatment with *Trichoderma harzianum* or *Pseudomonas fluorescens* @ 15-20g/kg seed.
- Soil application of FYM or vermicompost @5 tons/ha enriched with *Trichoderma harzianum* @ 2kg + *Paecilomyces lilacinus* @ 2kg + *Pseudomonas fluorescens* @2kg /ton of FYM..
- In standing crop, apply neem cake enriched with above biopesticides @ 50g/ m². This can also be mixed with water and applied as soil drench @ 2l/m². The same can be thoroughly filtered and sent along with drip or sprayed.

Whitefly on Gerbera (Under polyhouses condition):

- Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population.
- Spray Neem soap @ 10g/liter followed pongamia soap @ 10 g / liter
- **Need based spray** diafenthiuran 50WP @ 1 g/l followed by dinetofuran 20SG @1g/litre.

Rose Thrips:

- Grow border maize or sorghum to prevent pest migration
- Install blue sticky traps
- Spray imidacloprid 17.8 ml/l or dimethoate 30 EC @ 2ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with Chlorpyrifos 20 EC @ 5ml/l for killing pupae in the soil.

Midge on crossandra:

- Incidence of midge is increasing on crossandra. For its management spray imidacloprid 17.8SL@ 0.5 ml/l.

❖ Disease scenario

Disease advisories based on the weather data for the first fortnight of July 2023.

Fruit crops:

Papaya

- Foot rot caused by *Pythium* spp. and *Phytophthora* spp. occurs due to continuous rains. Avoid water logging by providing proper drainage to remove excess water. Application of farmyard manure or neem cake enriched with *Trichoderma harzianum* helps in preventive management. If disease is noticed in few plants, drench with copper oxychloride 50% WP (2.5g/l).

Vegetable crops:

Tomato

- The Early blight start appearing on low lying leaves. Remove and destroy lower most old and diseased leaves in the morning. It should be followed by foliar application of mancozeb (2g/l) or tebuconazole 50% + trifloxystrobin 25% WG (0.75g/l) at fortnightly interval.

Onion

- Late blight starts appearing in lower most soil touching lines. Remove lower most old and diseased leaves and give foliar spray of curative foliar spray of famoxadone 16.6%+ cymoxanil 22.1% SC (1g/l) or metiram 55% + pyraclostrobin 5% WG (3g/l).

Flower crops:

Chrysanthemum

- Leaf and flower blight caused by *Alternaria* spp. gets aggravated due to prevailing rains. To manage this disease spray difenoconazole 25% EC (0.5ml/l) or tebuconazole 20 EC (25.9% W/W) (0.5ml/l).

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 31st July, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
July (16 - 31)	27.36	20.58	89.88	74.44	3.94	6.50	98.80
2023	(28.7)	(20.3)	(84.9)	(65.9)	(4.0)	(5.9)	(77.2)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st July, 2023**

During the Second fortnight of the month i.e., 16th to 31st July, 2023, the mean maximum and minimum temperature decreased by 0.94°C and 0.22°C respectively as compared to the previous fortnight. The mean maximum and minimum temperature decreased by 0.3°C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning decreased by 2.52 % and in the afternoon increased by 1.64 % respectively as compared to the previous fortnight. There was 98.80 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

The fortnight has received very good rainfall which is more than the average of last five years. Wherever tomato crop is at fruit setting stage, foliar application of calcium and magnesium may be given to avoid blossom end rot. Under poor drainage conditions, nitrogen may be applied in legumes to facilitate nodulation and nitrogen fixation.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bengaluru conditions on various horticultural crops. Various management options for their management are as below.

Leaf Webber on mango:

- Remove and destroy the webbed portions wherever they are accessible
- For the management of this pest prune the affected shoots and spray lambda cyhalothrin 5EC @ 1ml/l.

Mango shoot borer

- Clip and destroy affected shoots
- Spray lambda cyhalothrin 5EC @ 1ml/l or Quinalphos 25 EC @ 2ml/l at the time of emergence of new flush. This will also take care of leaf eating weevil, *Rhynchaenus mangiferae*

Fruit fly on cucurbits:

- For the management of fruit fly (*Bactrocera cucurbitae*) on cucurbits, the following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.
- Bait Splash of 40/ acre (150g jaggery + 500ml water + 5ml lambda cyhalothrin 5EC).

Tomato moth

- Install tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5 SC @ 0.75 ml/litre or spinosad 45SC @ 0.3ml/l

Mites on tomato

- For the management of mites, spray wettable sulphur @ 3 g/l or propargite 57 EC @ 1.25 ml/l or fenazaquin 10EC @ 1.5ml/litre.

Chilli Thrips

- Spray fipronil 5 SC (1.5 ml/l) or imidacloprid 17.8 SL (0.3 ml/l) alternately at fortnightly interval.

Root-knot nematode in tomato:

- Raise healthy transplanted seedling on soil applied with FYM or vermicompost @ 5 tons/ha enriched with *Trichoderma harzianum* @ 2kg + *Paecilomyces lilacinus* @ 2kg + *Pseudomonas fluorescens* @ 2kg /ton of FYM.

- In standing crop, apply neem cake enriched with above biopesticides @ 50g/ m². This can also be mixed with water and applied as soil drench @ 2l/m². The same can be thoroughly filtered and sent along with drip or sprayed.

Rose Thrips:

- Spray imidacloprid 17.8SL @0.3ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with Chlorpyrifos 20 EC @ 5ml/l for killing pupae in the soil.

Mites on rose

- For the management of mites spray milbemectin1EC @ 1 ml/l.

Midge on crossandra:

- Under the prevailing conditions, incidence of midge increases on crossandra. For its management spray imidacloprid 17.8SL @ 0.3 ml/l.

Whitefly on Gerbera (polyhouses)

- Spray diafenthiuran 50WP @ 1 g/l followed by dinetofuran 20SG 1g/litre Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population

❖ Disease scenario

Disease advisories based on the weather data for the first fortnight of July 2023.

Fruit crops:

Pomegranate

- Foot Bacterial blight of pomegranate aggravates under prevailing weather condition. To manage this disease give foliar spray with copper oxychloride 50% WP @ 2.5g/L altered with 2-bromo, 2-nitro propane-1, 3-diol (Bronopol 95%) spray @ 0.5 g/L.

Papaya

- Foot rot caused by *Pythium* spp. and *Phytophthora* spp. occurs due to continuous rains. Avoid water logging by providing proper drainage to remove excess water. Application of farmyard manure or neem cake enriched with *Trichoderma harzianum* helps in preventive management. If disease is noticed in few plants, drench with copper oxychloride 50% WP (2.5g/l).

Vegetable crops:

Tomato

- Due to prevailing rains, bacterial leaf and fruit spot appears on fruits. To manage this disease, spray copper oxychloride 50% WP @ 2.5g/l.

Flower crops:

Chrysanthemum

- Leaf and flower blight caused by *Alternaria* spp. gets aggravated due to prevailing rains. To manage this disease spray difenoconazole 25% EC (0.5ml/l) or tebuconazole 20 EC (25.9% W/W) (0.5ml/l).

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th August, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
August (1 - 15)	29.47	20.27	89.67	66.47	4.99	3.84	12.70
2023	(28.0)	(20.3)	(84.7)	(67.9)	(4.0)	(6.7)	(51.5)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th August, 2023**

During the first fortnight of the month i.e., 1st to 15th August, 2023, the mean maximum temperature increased by 2.11°C and mean minimum temperature decreased by 0.31°C as compared to the previous fortnight. The mean maximum temperature decreased by 0.7°C and there was no change in the minimum temperature as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon decreased by 0.21% and 7.97% respectively as compared to the previous fortnight. There was 12.70 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

In kharif planted vegetable crops, bunds may be raised to avoid fruit spoilage by soil borne diseases which would occur when fruits touch the soil. Wherever soil conditions are conducive, intercultural operations may be taken up in kharif planted vegetables and fruit crops. For planting of papaya in September-October, land preparation and basal application of FYM and fertilizer may be taken up.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bengaluru conditions on various horticultural crops. Various management options for their management are as below.

Leaf Webber on mango:

- Remove and destroy the webbed portions wherever they are accessible
- For the management of this pest prune the affected shoots and spray lambda cyhalothrin 5EC @ 1ml/l.

Mango shoot borer

- Clip and destroy affected shoots
- Spray lambda cyhalothrin 5EC @ 1ml/l or Quinalphos 25 EC @ 2ml/l at the time of emergence of new flush. This will also take care of leaf eating weevil, *Rhynchaenus mangiferae*.

Fruit fly on cucurbits:

- For the management of fruit fly (*Bactrocera cucurbitae*) on cucurbits, the following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.
- Bait Splash of 40/ acre (150g jaggery + 500ml water + 5ml lambda cyhalothrin 5EC).

Tomato moth

- Install tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5 SC @ 0.75 ml/litre or spinosad 45SC @ 0.3ml/l

Mites on tomato

- For the management of mites, spray wettable sulphur @ 3 g/l or propargite 57 EC @ 1.25 ml/l or fenazaquin 10EC @ 1.5ml/litre.

Chilli Thrips

- Spray fipronil 5 SC (1.5 ml/l) or imidacloprid 17.8 SL (0.3 ml/l) alternately at fortnightly interval.

Root-knot nematode in tomato:

- Raise healthy transplanted seedling on soil applied with FYM or vermicompost @ 5 tons/ha enriched with *Trichoderma harzianum* @ 2kg + *Paecilomyces lilacinus* @ 2kg + *Pseudomonas fluorescens* @ 2kg /ton of FYM.

- In standing crop, apply neem cake enriched with above biopesticides @ 50g/ m². This can also be mixed with water and applied as soil drench @ 2l/m². The same can be thoroughly filtered and sent along with drip or sprayed.

Rose Thrips:

- Spray imidacloprid 17.8SL @0.3ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with Chlorpyrifos 20 EC @ 5ml/l for killing pupae in the soil.

Mites on rose

- For the management of mites, spray milbemectin1EC @ 1 ml/l.

Midge on crossandra:

- Under the prevailing conditions, incidence of midge increases on crossandra. For its management spray imidacloprid 17.8SL @ 0.3 ml/l.

Whitefly on Gerbera (polyhouses)

- Spray diafenthiothion 50WP @ 1 g/l followed by dinetofuran 20SG 1g/litre
- Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population

❖ Disease scenario

Disease advisories based on the weather data for the first fortnight of August 2023.

Fruit crops:

Pomegranate

- On fresh foliage and emerging flower buds infection of anthracnose might be noticed. This could be managed by spraying Chlorothalonil (2g/L) or /Antracol (2g/L) along with the sticker @ 0.5ml/l.

Vegetable crops:

Tomato

- Early blight problem aggravates under prevailing conditions. To manage this disease remove and destroy the lower most old and diseased leaves. It should be followed by foliar application of mancozeb (2g/l) or zineb75% WP (2g/l) or metiram70% WG 3g/L or pyraclostrobin 20% WG 1g/L or tebuconazole 50% + trifloxystrobin 25% WG (0.75g/l).

Okra

- Prevailing weather conditions favour powdery mildew disease development in okra. The disease can be effectively managed by spraying carbendazim (1g/l).

Flower crops:**Tube rose**

- Leaf and flower blight severity increases in tube rose. To manage this disease spray, carbendazim + mancozeb (1g/L) or hexaconazole (0.5 ml/L).

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 31st August, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
August (16 - 31)	31.15	20.88	81.19	54.63	5.66	2.98	9.5
2023	(28.7)	(19.8)	(85.9)	(66.1)	(3.8)	(3.7)	(82.8)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st August, 2023**

During the second fortnight of the month i.e., 16th to 31st August, 2023, the mean maximum and mean minimum temperature increased by 1.68°C and 0.61°C respectively as compared to the previous fortnight. The mean maximum temperature increased by 0.7°C and mean minimum temperature decreased by 0.5 °C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon decreased by 8.48% and 11.84% respectively as compared to the previous fortnight. There was 9.5 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

There has been severe rainfall deficit in the fortnight than the average of previous five years. Adequate irrigations may be given to the vegetable crops so that fruit size may not be affected due to low rainfall. In case of guava, due to Boron and Zn deficiency the fruits may be small and hard. Application of ZnSO₄ @ 50 g/tree or 1% spray and 0.1% Boric acid might improve the size of the fruit.

❖ Incidence of insect pests

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Hoppers and thrips on mango

New flush of certain varieties like Alphonso and Banganapalli attracts hoppers and thrips. Spraying with acephate 75SP @ 1.5 g /L along with sticker will check the infestation which otherwise may serve as source for flowering season.

Fruit fly on cucurbits:

- For the management of fruit fly (*Bactrocera cucurbitae*) on cucurbits, the following integrated approach may be followed. Installing cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.
- Bait Splash of 40/ acre (150g jaggery + 500ml water + 5ml lambda cyhalothrin 5EC).

Mites on tomato

- For the management of mites spray fenazaquin 10 EC @ 1.5ml/litre or spiromesifen 22.9EC* @ 0.5 ml/l

Black thrips on chilli (adhoc management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to raise seedlings under nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid 17.8 SL solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+ neem oil 2.5ml/litre, fipronil 80WG@40g/acre, Fipronil 40%+ imidacloprid 40% @40g/acre, Cyantraniliprole 10OD@240ml/acre, acetamiprid 20SP@40g/acre, spirotetramat 150 OD@160ml/acre, pongamia oil 2.5ml/litre or
- Spray twice @ minimum 15 days interval in a crop cycle 9.2% w/w DC Isocycloseram+10% w/v DC Isocycloseram* @ 1.2ml/liter
- Every 15 days interval (depending upon the outbreak) chlorpyrifos 50EC (2.5ml/l) soil drenching is required to kill pupa that are in soil.

- Note: none of these chemicals are approved by CIBRC except isocycloseram

***CIBRC label claim available**

Ash weevil on brinjal

- Collect and destroy adults
- Apply oiled neem cake with 8-10% oil to ridges @ 250kg/ha at planting and repeat at 30 days after planting
- In endemic areas, apply chlorpyrifos 1.5D @25-30kg/ha on 15 days after planting.

Rose Thrips:

- Spray dimethoate 30 EC @ 2ml/l with pongamia oil 0.5%.
- Apply Fipronil 5 SC @ 1.5 ml/l in case of severe infestations.
- Drench the soil with Chlorpyrifos 20 EC @ 5ml/l for killing pupae in the soil.

Mites on rose

- For the management of mites, spray milbemectin1EC @ 1 ml/l.

Midge on crossandra:

- Under the prevailing conditions, incidence of midge increases on crossandra. For its management spray imidacloprid 17.8SL @ 0.3 ml/l.

Whitefly on Gerbera (polyhouses)

- Spray diafenthuran 50WP @ 1 g/l followed by dinetofuran 20SG 1g/litre
- Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population.

Jasmine Bud borer

- Severe incidence of Jasmine bud borer is noticed during this period. Spray profenofos 50EC @1.5 ml/l for its management. If the incidence is severe spray indoxacarb 14.5 SC @ 0.75 ml/l

❖ Disease scenario

Disease advisories based on the weather data for the second fortnight of August 2023.

Fruit crops:

Mango

- Sprays of carbendazim (1g/L) or Thiophanate methyl (1g/L) or Chlorothalonil (2g/L) to manage foliar blights and anthracnose.

Papaya

- Anthracnose severity is expected to increase with prevailing weather. Spray application of thiophanate methyl M (0.1%) along with sticker @ 0.5 ml/L is recommended.

Vegetable crops:

Tomato

- Phytophthora blight (*Phytophthora infestans*) is expected to aggravate in tomato. To manage this disease, remove low lying infected leaves and spray mancozeb 75% WP or zineb 75% WP (2g/l) as protective sprays followed by Famoxadone 16.6% + Cymoxanil 22.1% SC (1g/l) or Metiram 55% + Pyraclostrobin 5% WG (3g/l) as curative spray.

Chilli

- Due to rain splash anthracnose spread is expected in green chillies. To manage this disease give a foliar spray of copper oxychloride 50% WP (2.5g/l) or mancozeb 75% WP (2 g/l) or propineb 70% WP (5g/l) or Zineb 75% WP (2g/l) as preventive measure followed by Difenoconazole 25% EC (0.5ml/l) as curative sprays.

Flower crops:

Tube rose

- To manage leaf and flower blight in tube rose spray Metiram 70WP (2g/L) or Difenconazole 25% EC (0.5 ml/L)

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th September 2023

Latitude : 13° 7' N

Longitude: 77°29' E

Altitude: 890 M

Fortnight	Temperature,		Relative Humidity,		Evaporation,	Wind speed,	Total Rainfall,
	°C		%		mm	km/h	mm
September 1 – 15, 2023	Mean	Mean	Mean At	Mean At			
	Max.	Min.	7.30 am	1.30 pm			
	29.39	21.17	86.27	64.93	5.12	6.78	102.20
	(28.9)	(19.7)	(84.3)	(65.2)	(4.1)	(4.1)	(106.9)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st August, 2023**

During the first fortnight of the month i.e., 1st to 15th September, 2023, the mean maximum temperature decreased by 1.76 °C and the mean minimum temperature increased by 0.22°C as compared to the previous fortnight. The mean maximum temperature increased by 0.20°C and mean minimum temperature decreased by 0.1 °C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 5.08% and 10.3% respectively as compared to the previous fortnight. There was 102.20 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

Wherever soil condition is congenial, field preparations for sowing rabi vegetables may be started. Adequate drainage must be ensured in papaya and banana orchards. In some places, heavy rainfall might have caused leaching of nutrients like B, N, Ca and Mg in porous soils. Top dressing of these nutrients will restore the required fertility.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Mango shoot borer

- Clip and destroy affected shoots

- Spray acephate 50 WP@ 1.5 g/l or Quinalphos 25 EC @ 2ml/l at the time of emergence of new flush. This will also take care of leaf eating weevil, *Rhynchaenus mangiferae*

Webber and ash weevil on Mango

- Incidence of webber and ash weevil become serious on new leaves. Remove webbed leaves wherever possible and burn them. Spray quinalphos 25 EC @ 2 ml/l or lamda cyhalothrin 5 EC @ 1ml /l for their management.

Pomegranate

Fruit sucking moth:

- Wherever matured fruits are there fruit sucking moth damage is expected. Netting the orchards is recommended

Thrips:

- On new flush, thrips incidence is expected. Spray fipronil 5 SC @ 1.5ml/L

Black thrips on chilli (tentative management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under nylon mesh thrips proof conditions, use thrips free seedlings
 - Barrier crop: sow maize all along the border 30 days before chilli transplantation
 - Root dipping of the seedlings in imidacloprid 17.8 SL solution @ 0.5 ml per litre of water for one hour during transplanting
 - After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+ neem oil 2.5ml/litre, fipronil80WG@40g/acre, Fipronil 40%+ imidacloprid40% @40g/acre, cyantraniliprole10OD@240ml/acre, acetamiprid20SP@40g/acre, spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre or
 - Spray twice Isocycloseram 9.2% (w/w DC) + Isocycloseram10% (w/v DC) @ 1.2ml/liter minimum @15 day interval in a crop cycle
 - Every 15 days interval (depending upon the outbreak) chlpropyrifos 50EC (2.5ml/l) soil drenching is required to kill pupa that are in soil.
- Note: none of these chemicals approved by CIBRC except isocycloseram

Fruit fly on cucurbits

- For the management of fruit fly on cucurbits, following integrated approach may be followed. Deployment of cue lure traps @ 15 traps/acre + sanitation (complete destruction of infested fruits at each harvest) + bait spray (lamda cyhalothrin 5 EC@ 1 ml + jaggery @ 10g/L) at 10 days interval from the date of flowering.
- Bait splash of 40/ acre (150g jaggery + 500mlwater + 5ml lamda cyhalothrin 5 EC)

Tobacco caterpillar on Tomato

- For the management of this pest, spray indoxacarb @ 0.75 ml/L or ranxypyr 18.5 SC @ 0.3ml/L.

Leaf hopper on okra/Bhendi

- Incidence of jassids is observed on okra. Spray imidacloprid 17.8 SL @ 0.3 ml/l, if the crop is at pre-flowering stage. Otherwise, spray neem or pongamia soaps @ 1 %, thoroughly covering lower surface of leaves.

Thrips on rose

- Incidence of rose thrips was observed more under polyhouse conditions. Spray acephate 75 SP @ 1 g/l or imidacloprid 17.8 SL @ 0.5 ml/l for its management.

Whitefly on Gerbera

- For the management of whitefly on gerbera diafenthiuron 50 WP @ 1g/liter followed by dinetofuran 20SG @ 0.3 g/l. Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population

❖ Disease scenario

Disease advisories based on the weather data for the first fortnight of September, 2023.

Fruit crops:

Banana

- Sigatoka leaf spot disease severity increases under prevailing weather conditions. Sigatoka could be managed by spraying propiconazole 25% EC at 1ml/L along with spray adjuvant @ 0.5ml/L.

Vegetable crops:

Cucurbits

- Prevailing humid cool conditions and frequent rains favours downy mildew development in cucurbits. To manage this disease give a foliar spray of zineb 75% WP @ 2g/L followed by ametoctradin + dimethomorph 20.27% w/w SC @ 2g/L at 10 days interval

Sweet Pepper

- Due to intense rainfall and water logging Phytophthora blight is likely to aggravate in sweet pepper. To manage this disease provide proper water drainage. Follow prophylactic foliar application of Chlorothalonil (2g/L) followed by curative application of Dimethomorph (1g/L).

CROP WEATHER SITUATION
METEOROLOGICAL DATA OF INDIAN INSTITUTE OF HORTICULTURAL
RESEARCH, HESSARAGHATTA, BANGALORE – 560 089

Period: 16th to 30th September 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm)
	Mean Max.	Mean Min.	Mean at 7.30AM	Mean at 1.30 PM			
September (16-30) 2023	29.50	21.19	89.13	66.53	4.60	3.90	119.90
	(28.9)	(19.8)	(82.7)	(61.1)	(3.6)	(3.9)	(46.0)

❖ * Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ Fortnight from 16th to 31st August, 2023

During the Second fortnight of the month i.e., 16th to 30th September, 2023, the mean maximum and minimum temperature increased by 0.11°C and 0.02°C respectively as compared to the previous fortnight. The mean maximum temperature remains constant and mean minimum temperature increased by 0.1 °C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 2.86% and 1.6% respectively as compared to the previous fortnight. There was 119.90 mm of rainfall reported during this fortnight.

❖ Crop weather situation

For banana planted in June- July, second split application of N, P₂O₅ and K₂O @ 50:30:60 g per plant may be applied. For banana in fruiting stage a foliar spray with banana special may be given. Also, vegetables planted late in the season needs topdressing with fertilizers now.

❖ Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Mango shoot borer

- Clip and destroy affected shoots
- Spray acephate 50 WP@ 1.5 g/l or Quinalphos 25 EC @ 2ml/l at the time of emergence of new flush. This will also take care of leaf eating weevil, *Rhynchaenus mangiferae*

Webber and ash weevil on Mango

- Incidence of webber and ash weevil become serious on new leaves. Remove webbed leaves wherever possible and burn them. Spray quinalphos 25 EC @ 2 ml/l or lambda cyhalothrin 5EC @ 1ml /l for their management.

Pomegranate

Fruit sucking moth:

- Wherever matured fruits are there fruit sucking moth damage is expected. Netting the orchards is recommended

Grapes

- Thrips, *Scirtothrips dorsalis* is expected to occur on leaves of newly pruned Bangalore Blue. Spray fipronil 5 SC @ 1.5ml/L

Fruit fly on cucurbits

- For the management of fruit fly on cucurbits, following integrated approach may be followed. Deployment of cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (imidacloprid 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.

Tomato moth

- Install tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5SC @ 0.75 ml/litre or spinosad 45 SC @ 0.3ml/l

Tobacco caterpillar on Tomato

- For the management of this pest, spray indoxacarb @ 0.75 ml/L

Leaf hopper on okra/Bhendi

- Incidence of jassids is observed on okra. Spray imidacloprid 17.8SL @ 0.3 ml/l, if the crop is at pre-flowering stage. Otherwise, spray neem or pongamia soaps @ 1 %, thoroughly covering lower surface of leaves.

Black thrips on chilli (tentative management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under Nylon mesh thrips proof conditions, use thrips free seedlings

- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid 17.8 SL solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+ neem oil 2.5ml/litre, fipronil80WG@40g/acre, Fipronil 40%+ imidacloprid40% @40g/acre, Cyantraniliprole10OD@240ml/acre, acetamiprid20SP@40g/acre, spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre or
- Spray twice @ minimum 15 days interval in a crop cycle Isocycloseram 9.2% (w/w DC) + Isocycloseram10% (w/v DC) * @ 1.2ml/liter
- Every 15days interval (depending upon the outbreak) chlorpyrifos 50EC (2.5ml/l) soil drenching is required to kill pupa that are in soil.

Note: none of these chemicals approved by CIBRC except isocycloseram

*CIBRC label claim available

Thrips on rose

- Incidence of rose thrips was observed more under polyhouse conditions. Spray acephate 70WP@ 1 g/l or imidacloprid 17.8SL@ 0.5 ml/l for its management.

Whitefly on Gerbera

- For the management of whitefly on gerbera spray dinetofuran 20SG @ 1 g/l or diafenthiuron 500SC@ 1ml/litre followed by spirotetramat 240 SC @ 1ml/litre. Install yellow sticky traps coated with adhesive or sticky glue at crop canopy level for monitoring adult whitefly population.

❖ Disease scenario

Disease advisories based on the weather data for the Second fortnight of September, 2023.

Mango

- Application of Bordeaux paste to tree trunk up to 1m from soil before start of north east monsoon October. Regular pruning and destruction of affected twigs or branches and application of Copper oxy chloride (0.3 %) soon after the pruning. First prophylactic spray to control powdery on foliage with Sulphur 80 % WP (2g/l) or Hexaconazole 5% EC (1ml/l).

Chrysanthemum

- Rust (*Puccinia horiana*) is expected to appear in Chrysanthemum. To manage this disease give foliar sprays of Chlorothalonil (2g/L) or Propiconazole at (1ml/L) 3 to 4 times at 15 days interval

Chilli

- Prevailing weather conditions favour development of powdery mildew (*Leveillula taurica*) disease in chilli. To manage this disease give foliar spray of Spraying of Tebuconazole 25% WG (1.5g/L), or Tebuconazole 25.9% m/m EC @ 1.5ml/L or Azoxystrobin 18.2% w/w + Difenoconazole 11.4% w/w SC @ 1ml/L, Azoxystrobin 8.3% + Mancozeb 66.7% WG (3g/L) or Tebuconazole 50% + Trifloxystrobin 25% WG (0.5g/l) at 10 -12 day intervals (2-3 sprays).

Capsicum

- Due to intense rainfall and water logging Phytophthora blight (*Phytophthora capsici*) is likely to aggravate in capsicum. To manage this disease provides proper water drainage. Follow prophylactic foliar application of Chlorothalonil (2g/L) followed by curative application of Dimethomorph (1g/L).

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th October, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
October (1 - 15)	30.11	20.45	89.27	55.33	4.71	2.72	77.80
2023	(29.1)	(19.5)	(86.8)	(63.0)	(4.0)	(2.6)	(129.5)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th October, 2023**

During the first fortnight of the month i.e., 1st to 15th October, 2023, the mean maximum temperature increased by 0.61°C and mean minimum temperature decreased by 0.74°C as compared to the previous fortnight. The mean maximum temperature increased by 0.2°C and mean minimum temperature decreased by 0.3 °C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning increased by 0.14% and in the afternoon decreased by 11.2% as compared to the previous fortnight. There was 77.80 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

The fortnight had been very dry with significantly lower rainfall than the average of previous five years. Mulching should be provided to reduce evaporation losses. In places where soil moisture is conducive, field preparation and application of manures and fertilizers may be done for planting of rabi vegetables.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Mango shoot borer

- Clip and destroy affected shoots
- Spray *Profenophos 50EC @ 2ml/l, Indoxacarb 14.5 SC@ 0.75ml/l or Quinalphos 25 EC @ 2ml/l at the time of emergence of new flush. This will also take care of leaf eating weevil, *Rhynchaenus mangiferae*

Webber and ash weevil on Mango

- Incidence of webber and ash weevil become serious on new leaves. Remove webbed leaves wherever possible and burn them. Spray quinalphos 25EC@ 2 ml/l or lambda cyhalothrin 5EC @ 1ml /l for their management.

Pomegranate:

Fruit sucking moth: Wherever matured fruits are there fruit sucking moth damage is expected. Netting the orchards is recommended, Spray cyantraniliprole 10.26% OD@1.25g/l

Grapes:

Thrips, *Scirtothrips dorsalis* is expected to occur on leaves of newly pruned Bangalore Blue. Spray Fipronil 5SC @ 1.5ml/L or *Metarhizium* formulations.

Fruit fly on cucurbits

- For the management of fruit fly on cucurbits, following integrated approach may be followed. Deployment of cue lure traps @ 10 traps/acre + Sanitation (complete destruction of infested fruits at each harvest) + Bait spray (Deltamethrin 0.1 % + jaggery @ 10g/L) at 10 days interval from the date of flowering.

Tobacco caterpillar on Tomato

- For the management of this pest, spray Indoxacarb 14.5SC @ 0.75 ml/L or Thiodicarb 75WP @ 1 g/L.

Leaf hopper on okra/Bhendi

- Incidence of jassids is observed on okra. Spray Imidacloprid 17.8 SL @ 0.3 ml/l, if the crop is at pre-flowering stage. Otherwise, spray neem or pongamia soaps @ 1 %, thoroughly covering lower surface of leaves.

Black thrips on chilli (adhoc management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to raise seedlings under nylon mesh thrips proof conditions and use thrips free seedlings

- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in Imidacloprid 17.8 SL solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of Imidacloprid 17.8 SL 0.5ml/litre+ neem oil 2.5ml/litre, Fipronil80WG@40g/acre, Fipronil 40%+ Imidacloprid40% @40g/acre, Cyantraniliprole10OD@240ml/acre, Acetamiprid20SP@40g/acre, Spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre
- or
- Spray twice @ minimum 15 days interval in a crop cycle 9.2% w/w DC Isocycloseram+10% w/v DC Isocycloseram* @ 1.2ml/liter
- Every 15days interval (depending upon the outbreak) chlropyrifos 50EC (2.5ml/l) soil drenching is required to kill pupa that are in soil.
- **Note: none of these chemicals are approved by CIBRC except isocycloseram**
*CIBRC label claim available

Rose Thrips:

- Incidence of rose thrips was observed to the more under polyhouse conditions. Spray acephate 70SP @ 1 g/l or imidacloprid 17.8 SL @ 0.5 ml/l for its management.
- Note: *CIBRC approved, others are not in the CIBRC list**

❖ Disease scenario

Disease management advisories based on weather report of first fortnight of October 2023.

Fruit crops:

Mango

- To protect trees from fungal infection, apply Bordeaux paste to tree trunk up to 1m from soil before start of North-East monsoon. Prune disease affected twigs or branches and apply copper oxy chloride (3g/L) or Bordeaux paste to pruned parts.

Vegetable crops:

Cucurbits

- Prevailing humid cool conditions and frequent rains favours downy mildew development in cucurbits. To manage this disease give a foliar spray of Zineb75%WP @2g/L followed by Ametotradin + Dimethomorph 20.27% w/w SC @2g/L at 10 day's interval.

Chilli

- Anthracnose severity increases under prevailing weather conditions. Foliar application of Copper oxychloride 50% WP (2.5g/l) or Mancozeb 75% WP (2 g/l) or Zineb 75% WP (2g/l) as preventive sprays followed by Difenconazole 25% EC (0.5ml/l) or Metiram 55% + Pyraclostrobin 5% WG (3g/l) as curative sprays at 15 days interval has to be followed to manage this disease

Flower crops:

Chrysanthemum

- Leaf and flower blight is expected to appear in chrysanthemum. To manage this disease give foliar sprays of Chlorothalonil (1g/L) followed by Difenconazole at (0.5 ml/L) at 15 days interval

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 31st October, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
October (16 - 31)	30.21	17.61	81.31	47.88	4.73	2.71	0.20
2023	(28.6)	(17.7)	(80.3)	(59.7)	(3.6)	(2.5)	(90.1)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st October, 2023**

During the second fortnight of the month i.e., 16th to 31st October, 2023, the mean maximum temperature increased by 0.1°C and mean minimum temperature decreased by 2.84°C as compared to the previous fortnight. The mean maximum and mean minimum temperature decreased by 0.5 °C and 1.8 °C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon decreased by 7.96% and 7.45% respectively as compared to the previous fortnight. There was 0.20 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

Mulching should be provided with priority as a soil moisture conservation practice to reduce evaporation losses. In places where soil moisture is conducive, field preparation and application of manures and fertilizers may be done for planting of rabi vegetables.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops.

Mango leaf eating caterpillars and weevils

- Spray quinalphos 25 EC@ 2 ml/l or lambda cyhalothrin 5EC @ 1ml /l for their management.

Grape thrips

- Thrips, *Scirtothrips dorsalis* is expected to occur on leaves of newly pruned Bangalore Blue. Spraying of imidacloprid 17.8 SL @0.3ml/L or thiamethoxam 25G @ 0.25g/L is recommended.

Caterpillar pests on tomato

- During this period, incidence of both tobacco caterpillar and fruit borer is more. For the management of these caterpillar pests spray indoxacarb 14.5 SC @ 0.75ml/l. Collect and destroy *Spodoptera litura* at early instar stage, when they feed gregariously, is desirable.

Mite on tomato

- Incidence of spider mites is noticed in some tomato fields. For mites management, spray *spiromesifen 22.9 SC 0.5ml/l.

Black thrips on chilli (adhoc management only)

- Black thrips incidence is increasing on chilli and capsicum; it is advised to raise seedlings under nylon mesh thrips proof conditions and use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in Imidacloprid 17.8 SL solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of Imidacloprid 17.8 SL 0.5ml/litre+ neem oil 2.5ml/litre, Fipronil80WG@40g/acre, Fipronil 40%+ Imidacloprid40% @40g/acre, Cyantraniliprole10OD@240ml/acre, Acetamiprid20SP@40g/acre, Spirotetramat150 OD@160ml/acre, pongamia oil 2.5ml/litre
- or
- Spray twice @ minimum 15 days interval in a crop cycle 9.2% w/w DC Isocycloseram+10% w/v DC Isocycloseram* @ 1.2ml/liter
- Every 15days interval (depending upon the outbreak) chlpropyrifos 50EC (2.5ml/l) soil drenching is required to kill pupa that are in soil.

- **Note: none of these chemicals are approved by CIBRC except isocycloseram**
*CIBRC label claim available

Jassids on bhendi

- Incidence of jassids is observed on okra.
- Install yellow sticky traps @ 8-10/acre
- Spray imidacloprid 17.8 SL @ 0.3 ml/l, if the crop is at pre-flowering stage. Otherwise, spray neem or pongamia soaps @ 0.5 %, thoroughly covering lower surface of leaves.

Epilachna beetle on brinjal

- Heavy incidence of epilachna beetle damage is seen on brinjal. Spray Azadirachtin 0.03 % WSP (300 ppm) 5.0 g/l or Quinalphos 20 % AF 1.7 ml/l

Aphids on rose:

- Incidence Aphid infestation may increase on rose in open field. Spray imidacloprid 200 SL @ 0.5 ml/l for its management. If the incidence is severe, spray thiamethoxam 25 WG 0.3g/L.

❖ Disease scenario

Disease management advisories based on weather data prevailing during second fortnight of October 2023

Fruit crops:

Mango

- Initiation of powdery mildew initial incidence is expected on leaves and flower buds. To manage this disease spray Hexaconazole 5% EC @ 1ml/litre.

Vegetable crops:

Cucurbits

- Prevailing humid cool conditions and frequent rains favours downy mildew development in cucurbits. To manage this disease give a foliar spray of Zineb 75% WP @ 2g/L followed by Ametoctradin + Dimethomorph 20.27% w/w SC @ 2g/L at 10 day's interval.

Flower crops:

Rose

- Powdery mildew severity increases under prevailing conditions. To manage the disease spray carbendazim 50 WP @ 1g/Litre along with sticker @ 0.5 ml/l.

Chrysanthemum

- White Rust severity increases from first week of November under prevailing weather conditions. The disease can be effectively managed by spraying chlorothalonil (2g/L) or propiconazole at (1ml/L) 3 to 4 times at 15 days interval.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th November, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
November (1- 15)	28.64	19.20	87.73	60.53	4.10	3.2	113.40
2023	(28.1)	(17.1)	(84.4)	(58.1)	(3.3)	(2.6)	(28.4)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th November, 2023**

During the first fortnight of the month i.e., 1st to 15th November, 2023, the mean maximum temperature decreased by 1.57°C and mean minimum temperature increased by 1.59°C as compared to the previous fortnight. The mean maximum and mean minimum temperature decreased by 0.5 °C and 0.6°C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 6.42% and 12.65% respectively as compared to the previous fortnight. There was 113.40 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

Rainfed vegetables and fruits might be supplemented with micro nutrients by means of foliar spray for better uptake. Farmers may take up spray of banana special in mango & vegetable special in all vegetables.

❖ **Incidence of insect pests**

Under the prevailing weather situation, the following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Thrips on Grape

Thrips, *Scirtothrips dorsalis* is expected to occur on leaves of newly pruned Bangalore Blue. Spray fipronil 5 SC @ 1.5ml/L or Metarhizium formulations.

Caterpillar pests on tomato

- With the prevailing weather, incidence of various caterpillar pests like tobacco caterpillar and tomato fruit borer may increase on tomato. For the management of both these caterpillar pests, spray indoxacarb 14.5 SC @ 0.75ml/l.

Tomato moth

- Install Tuta pheromone traps for monitoring of the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5SC @ 0.75 ml/litre or spinosad 45SC @ 0.3ml/l

Aphids on brinjal & bhendi

- Incidence of aphids is increasing on brinjal and bhendi. If the crop is at pre flowering stage, spray imidacloprid @ 0.3 ml/l. After the fruit set, spray neem or pongamia soaps @ 10g/l or pulverized neem seed powder extract (NSPE) 4%, by covering the lower surface of the leaves thoroughly.

Mites on tomato

- During the period, the incidence of mites is observed in different tomato fields. Spray *spiromesifen 22.9SC @ 0.5 ml/l for their management

Aphids on rose and beans

- Aphid infestation may increase on rose and other bean vegetables. Spray imidacloprid 200SL @ 0.5 ml/l for their management

***Helicoverpa* on china asters**

- Incidence of *Helicoverpa* may increase on china asters. Spray indoxacarb 14.5 EC @ 0.75 ml/l for its management.

*CIBRC label claim is available

❖ Disease scenario

Disease management advisories based on weather data prevailing during second fortnight of October 2023

Fruit crops:**Banana**

- Sigatoka leaf spot disease severity increases under prevailing weather conditions. Sigatoka could be managed by spraying propiconazole 25% EC at 1ml/L along with spray adjuvant @ 0.5ml/L.

Vegetable crops:**Cucurbits**

- Prevailing humid cool conditions and frequent rains favours downy mildew development in cucurbits. To manage this disease give a foliar spray of Zineb 75% WP @ 2g/L followed by Ametoctradin + Dimethomorph 20.27% w/w SC @ 2g/L at 10 day's interval.

Chilli

- Prevailing weather condition favours powdery mildew development in chilli. To manage this disease give foliar sprays of or Azoxystrobin 18.2% w/w + Difenoconazole 11.4% w/w SC @ 1ml/L or Tebuconazole 50% + Trifloxystrobin 25% WG (0.5g/l) at 10-12 day intervals (2-3 sprays).

Flower crops:**Chrysanthemum**

- Prevailing weather condition favours white rust in chrysanthemum. To manage this disease spray propiconazole @ 1ml/L.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 30th November, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
November (16-30)	28.31	19.25	84.73	62.00	3.43	4.11	2.20
2023	(27.4)	(17.2)	(85.8)	(60.5)	(3.3)	(2.9)	(51.5)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 30th November, 2023**

During the second fortnight of the month i.e., 16th to 30th November, 2023, the mean maximum temperature decreased by 0.33°C and mean minimum temperature increased by 0.05°C as compared to the previous fortnight. The mean maximum temperature decreased by 0.7°C and mean minimum temperature increased by 0.1°C as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning decreased by 3.00% and in the afternoon increased by 1.47% as compared to the previous fortnight. There was 2.20 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

First foliar spray of IIHR Mango special is advised to be given during this fortnight for mango orchards. Lesser rainfall necessitates frequent irrigations for standing crops. Wherever green manure crops are grown or residue is available, these may be incorporated in to the soil for better decomposition.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Hoppers on mango:

- Wherever flowering started, incidence of hoppers is expected to occur on mango. Spray Azadirachtin 3000 ppm @ 2 ml/l, if the hopper population is low to moderate. If the number exceeds 4 per panicle spray with imidacloprid 200 SL @ 0.25 ml/l. If blossom webber is noticed, spray lambda cyhalothrin* 5 EC @ 0.5 ml/l at early panicle emergence. Add stickers for enhancing the efficacy. Also direct the sprays to the trunks to check hibernating adults of stone weevils and hoppers.

Cabbage Diamond back moth:

- Occurring in severe form. Spraying of neem soap (10g/L), neem seed powder extract @ 40g/litre or Arka Neem pellets @ 30G /litre at 10 days intervals will be effective starting from 20 days after planting till 60-70DAT.

Tomato fruit borer:

- With the prevailing weather, incidence of tomato fruit borer may increase on tomato. For its management, spray HaNPV @ 250 LE/ha during evening hours or spray indoxacarb 14.5 SC @ 0.75ml/l, if the incidence is very high. Proper waiting periods are to be followed before harvest of tomatoes.

Aphids on brinjal & bhendi

- Incidence of aphids is increasing on brinjal and bhendi. If the crop is at pre flowering stage, spray imidacloprid @ 0.3 ml/l. After the fruit set, spray neem or pongamia soaps @ 10g/l or pulverized neem seed powder extract (NSPE) 4%, by covering the lower surface of the leaves thoroughly.

Midge on chillies:

- Severe incidence of midges is observed on chilli which causes maximum damage at flowering stage. Spray thiamethoxam 70WG@ 0.3 g/l for their management.

Aphids on cucurbits

- Aphid infestation may increase on different cucurbits. Spray imidacloprid 17.8 SL @ 0.5 ml/l for their management.

*CIBRC label claim is available

❖ Disease scenario

Disease scenario in relation to the weather data during second fortnight of November 2023

Fruit crops:

Mango

- Powdery mildew appears on flower buds and leaves. At this point of time application of wettable sulphur (0.2%) along with spray adjuvant @ 0.5 ml/L is recommended.

Banana

- Sigatoka leaf spot (*Mycosphaerella* sp.) require proper attention. Sigatoka could be managed by spraying propiconazole 25EC (0.1%)/ carbendazim+mancozeb carbendazim 12% + mancozeb 63% WP @ 2g/L (0.1%).

Vegetable crops:

Tomato

- Late blight (*Phytophthora infestans*) severity increases under prevailing weather conditions. For the management of late blight, spray mancozeb 75% WP /Zineb 75% WP (2g/l) /Ziram 80% WP (2g/l)/propineb 70% WP (3g/L) as protective sprays followed by famoxadone 16.6% + cymoxanil 22.1% SC (1g/l) or metiram 55% + pyraclostrobin 5% WG (3g/l) as curative sprays

Okra

- The prevailing weather favours initiation and development of powdery mildew (*Erysiphe cichoracearum*) in okra. The disease can be effectively managed by spraying mancozeb or zineb (2g/l) or carbendazim (1g/l) or Sulphur 80% WP @ 3g/L 3 to 4 times at 15 days interval.

Flower crops:

Chrysanthemum

- Prevailing weather conditions increases rust severity. To manage this disease spray chlorothalonil 75% WP (2g/l) followed by propiconazole 25% EC (1 ml/l) at 15 days interval.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 1st to 15th December, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
December (1-15)	27.60	18.75	90.20	63.47	2.85	3.28	2.50
2023	(26.6)	(16.9)	(84.2)	(60.3)	(2.7)	(3.6)	(29.5)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 1st to 15th December, 2023**

During the first fortnight of the month i.e., 1st to 15th December, 2023, the mean maximum and mean minimum temperature decreased by 0.71°C and 0.5°C respectively as compared to the previous fortnight. The mean maximum and mean minimum temperature decreased by 0.8°C and 0.3 °C respectively as compared to the mean values of the corresponding period for the previous five years. The percent relative humidity in the morning and in the afternoon increased by 5.47% and 1.47% respectively as compared to the previous fortnight. There was 2.50 mm of rainfall reported during this fortnight.

❖ **Crop weather situation**

For the rabi vegetables which have already been transplanted, top dressing of N @50 kg/ha may be given. Since rainfall received is too low during this period protective irrigation should be ensured after fertilizer application. Vegetable farmers may undertake spray of Arka vegetable special. If pollination is completed mango farmers are advised to take up spray of Arka mango special.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on various horticultural crops. Various management options for their management are mentioned below.

Hoppers on mango:

- Wherever flowering started, incidence of hoppers is expected to occur on mango. Spray Azadirachtin 3000 ppm @ 2 ml/l, if the hopper population is low to moderate. If the number exceeds 4 per panicle spray with imidacloprid 200 SL @ 0.25 ml/l. If blossom webber is noticed, spray lambda cyhalothrin* 5 EC @ 0.5 ml/l at early panicle emergence. Add stickers for enhancing the efficacy. Also direct the sprays to the trunks to check hibernating adults of stone weevils and hoppers.

Tomato fruit borer:

- With the prevailing weather, incidence of tomato fruit borer may increase on tomato. For its management, spray HaNPV @ 250 LE/ha during evening hours or spray indoxacarb 14.5 SC @ 0.75ml/l, if the incidence is very high. Proper waiting periods are to be followed before harvest of tomatoes.

Midge on chillies:

- Severe incidence of midges is observed on chilli which causes maximum damage at flowering stage. Spray thiamethoxam 70WG@ 0.3 g/l for their management.

Thrips on capsicum and chilli

- Incidence of thrips is increasing on capsicum grown under shade net/polyhouses and chilli grown under open conditions. Spray imidacloprid 200 SL @ 0.5 mL/l or fipronil 5 SC @ 1.5 ml/l.

Aphids on cucurbits

- Aphid infestation may increase on different cucurbits. Spray imidacloprid 17.8 SL @ 0.5 ml/l for their management.

*CIBRC label claim is available

❖ Disease scenario

Disease scenario in relation to the weather data during first fortnight of December 2023

Fruit crops:

Mango

- Powdery mildew requires attention. At this point of time application of wettable sulphur (0.2%) along with sticker @ 0.5 ml/L is recommended. Wettable Sulphur should not be applied if the temperature is higher. Hexaconazole 5% EC @ 1ml per litre.

Vegetable crops:

Tomato

- Early blight severity increases in tomato. To manage this disease remove and destroy lower most old and diseased leaves in the morning. It should be followed by foliar sprays with mancozeb @ 2g/l or tebuconazole 50% + trifloxystrobin 25% WG @0.75g/l at fortnightly interval.

Okra

- The prevailing weather favours initiation and development of powdery mildew (*Erysiphe cichoracearum*) in okra. The disease can be effectively managed by spraying mancozeb or zineb (2g/l) or carbendazim (1g/l) or Sulphur 80% WP @3g/L 3 to 4 times at 15 days interval.

Muskmelon

- Due to prevailing dew conditions, downy mildew starts appearing in muskmelon. To manage this disease spray zineb75%WP @2g/L or ametoctradin + dimethomorph 20.27% w/w SC @2g/L

Chilli

- Powdery mildew severity increases under prevailing weather conditions. Spray tebuconazole25% WG (1.5g/L), or Tebuconazole25.9% m/m EC @1ml/L or azoxystrobin 18.2% w/w + difenoconazole 11.4% w/w SC @1ml/L, or tebuconazole 50% + trifloxystrobin 25% WG@ 0.5g/l.

Onion

- Foliar sprays with mancozeb75%WP@ 2.0 g/l followed by need based sprays with tebuconazole 50% + trifloxystrobin 25% WG @0.6g/l. Avoid sprinkler irrigation

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH
HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

Period: 16th to 31st December, 2023

Latitude : 13°7¹ N

Longitude : 72°29¹ E

Altitude : 890 M

Fortnight	Temperature (°C)		Relative Humidity (%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm) Mean Max.
	Mean Max.	Mean Min.	Mean At 7.30AM	Mean at 1.30 PM			
December (16 - 31)	28.1	15.4	90.44	54.94	3.5	4.28	0.00
2023	(27.8)	(14.1)	(82.7)	(52.2)	(3.5)	(3.2)	(0.00)

* Figures in the parentheses indicate the mean values during the corresponding period for the previous 5 years

❖ **Fortnight from 16th to 31st December, 2023**

During the second fortnight of the month i.e., 16th to 31st December, 2023, the mean maximum temperature increased by 0.5°C and mean minimum temperature decreased by 3.35°C as compared to the previous fortnight. The mean maximum temperature increased by 1.2°C and mean minimum temperature decreased by 2.8°C as compared to the. The percent relative humidity in the morning increased by 0.24% and in the afternoon decreased by 8.53% as compared to the previous fortnight. There was no rainfall reported during this fortnight. In general, this fort night is warmer with higher RH compared to the mean values of the corresponding period for the previous five years

❖ **Crop weather situation**

Top dressing of fertilizers may be given to rabi vegetables. Foliar spray of mango special for mango, banana special for banana and vegetable special for vegetables may be given to improve the growth. Wherever possible soil surface must be mulched to prevent evaporation loss of water.

❖ **Incidence of insect pests**

Under the prevailing weather situation, following pests are expected under Bangalore conditions on different horticultural crops. Various management options for their management are mentioned below.

Hoppers on mango:

- Incidence of hoppers is observed on mango. Spray Azadirachtin 3000 ppm @ 2 ml/l, if the hopper population is low to moderate. If the number exceeds 4 per panicle spray with *imidacloprid 17.8 SL @ 0.5 ml/l or *oxydemeton – methyl 25% EC @ 2 ml/l or *dimethoate 30% EC @ 2ml/litre at early panicle emergence.

Flower webbers/inflorescence caterpillars on mango

- Besides hoppers, inflorescence caterpillars which web the flowers and feed inside are potential pests on mango during January. Application of lambda cyhalothrin 5EC @ 0.5ml/L or cypermethrin 25 EC @ 1ml/L is useful to control the pest.

Banana skipper

- Skipper butterfly is becoming a serious pest on banana. Larva rolls the leaves and feed by remaining inside. Affected leaves to be mechanically removed and destroyed. In case of severe infestation, spraying of quinolphos 25EC @ 2ml/L or chlorpyrifos 20EC @ 2.5ml/L is advised.

Tomato fruit borer:

- With the prevailing weather, incidence of fruit borer may increase on tomato. For its management, spray *HaNPV* @ 250 LE/ha during evening hours or spray *flubendiamide 20 WG @ 0.2g/l, *indoxacarb 14.5SC @ 0.5ml/l, if the incidence is very high. Proper waiting periods are to be followed before harvest of tomatoes.

Tomato moth:

- Install tuta pheromone traps for monitoring the adults @ 4-6 traps/acre
- Spray indoxacarb 14.5SC @ 0.75 ml/litre or spinosad 45SC @ 0.3ml/l

Midge on chillies:

- Severe incidence of midges is observed on chilli which causes maximum damage at flowering stage. Spray thiamethoxam 25WG @ 0.3 g/l for their management.

Thrips on capsicum and chilli

- Incidence of thrips is increasing on capsicum grown under shade net/polyhouses and chilli grown under open conditions. Spray imidacloprid 200 SL @ 0.5 mL/l or fipronil 5 SC @ 1.5 ml/l.

***Thrips parvispinus* on chilli**

- Black thrips incidence is increasing on chilli and capsicum; it is advised to farmers to raise seedlings under nylon mesh thrips proof conditions, use thrips free seedlings
- Barrier crop: sow maize all along the border 30 days before chilli transplantation
- Root dipping of the seedlings in imidacloprid 17.8 SL solution @ 0.5 ml per litre of water for one hour during transplanting
- After planting: regular alternate weekly spraying of imidacloprid 17.8 SL 0.5ml/litre+ neem oil 2.5ml/litre, fipronil 80WG@40g/acre, fipronil 40%+ imidacloprid 40% @40g/acre, Cyantraniliprole 10OD@240ml/acre, acetamiprid 20SP@40g/acre, spirotetramat 150 OD@160ml/acre, pongamia oil 2.5ml/litre
or
- Spray twice @ minimum 15 days interval in a crop cycle isocycloseram 9.2% (w/w DC) + isocycloseram 10% (w/v DC) * @ 1.2ml/liter
- Every 15 days interval (depending upon the outbreak) chlorpyrifos 50EC (2.5ml/l) soil drenching is required to kill pupa that are in soil.
- Note: none of these chemicals are approved by CIBRC except isocycloseram

***CIBRC label claim available**

Aphids on cucurbits

- Aphid infestation may increase on different cucurbits. Spray imidacloprid 17.8 SL @ 0.5 ml/l for their management.

*CIBRC label claim is available

❖ Disease scenario

Disease scenario in relation to the weather data during second fortnight of December 2023

Fruit crops:

Mango

- Control powdery appearance with Sulphur 80 % WP (2g/l) or Hexaconazole 5% EC (1ml/l). Sulphur spray should be voided during sunny, warm conditions as it may cause

phytotoxicity (“burn”) to flowers and young fruits. Avoid sprays if flowering is more than 50%.

Vegetable crops:

Chilli

- Powdery mildew and anthracnose severity increases in chilli under prevailing conditions. Foliar application of difenoconazole 25% EC (0.5ml/l) or azoxystrobin 18.2% w/w + difenoconazole 11.4% w/w SC (1ml/l) or tebuconazole 50 + trifloxystrobin 25% WG @0.6g/L is recommended to manage this disease.

Onion

- In onion purple blotch severity increases with prevailing dew condition. To manage this disease spray dithane M-45@ 2.5g/litre or tebuconazole 50+trifloxystrobin 25% WG @ 0.6g/L.

Flower Crops:

Rose & Gerbera

- Powdery mildew severity increases. Spray azoxystrobin or propiconazole @ 0.5 ml/L