

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> January, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| January 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 28.2             | 13.8         | 77.1                  | 38.5              | 4.03             | 2.03              | 0.0                 |
|  | (28.0)           | (16.4)       | (74.7)                | (46.2)            | (4.2)            | (2.9)             | (0.0)               |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> January, 2018**

During the first fortnight of the month i.e., from January 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum and minimum temperatures were higher by 1.2<sup>o</sup>C and 1.3<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature remains same whereas minimum temperature was lower by 0.8<sup>o</sup>C respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was higher by 0.5% while at afternoon it was lower by 0.9% respectively, as compared to the previous fortnight. There was 5.6mm rainfall during the fortnight.

**Crop weather situation**

Dry weather will continue for many more days. Hence soil surface must be covered with available mulch. Vegetable farmers are advised to go for foliar spray of vegetable special. Mango trees started flowing. If pollination has not yet started farmers are advised to go for spray of mango special. Otherwise spray may be done after fruit set is completed.

**Incidence of pests and diseases**

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:

**Citrus nursery**

- Citrus leafminer was noticed, spray cypemethrin@ 1 ml/lt.

**Guava**

- Tea mosquito bug incidence was noticed. Weekly spraying of *Beauveria bassiana* @ 1x10<sup>9</sup> spores/ml will reduce the pest damage.

**Mango**

- Leafhopper incidence can be managed by spraying Lambda Cyhalothrin@ 1ml/lt.

**Tomato**

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @ 1ml/lt.

## Cabbage

- Diamond Back moth *Plutella xylostella* incidence was noticed. Spray IIHR neem soap at 10g/lit will help in minimizing or repelling the egg laying by adult moths.

## Rose

- Aphid infestation may further increase on rose in open field conditions. Recommended to spray Dimethoate @2ml/lit.

## Gerbera

- Under polyhouse conditions in gerbera crop leafminer infestation will be increased. Recommended to spray cypermethrin@1ml/lit.

**\*Safe waiting periods are to be followed as per the label claims**

## Disease Scenario

Disease forecast based on weather parameters during the first fortnight of January, 2018.

## Fruit crops

### Grape

- Anthracnose and Powdery mildew (*Uncinula necator*) infection may be noticed. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendazim + Mancozeb (0.2%) /Bitertanol (0.2%) whereas for powdery mildew Application of Azoxystrobin (0.1%) or Triadimefon (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 Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l.

### Banana

- Sigatoka leaf spot (*Mycosphaerella* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%)/ whereas crown rot, anthracnose could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.
- Application of Hexaconazole + Zineb (0.2%) may be effective in case of **complex infection** of diseases as mentioned above.

### 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 Mancozeb + Dinocap (Dikar) (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) is recommended along with sticker @ 0.5 ml/ l.

### 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 (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.

## **Papaya**

- Infection of Black spot (*Asperisporium caricae*) may further increase. Whereas powdery mildew (*Oidium caricae*) infection may also be noticed. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

## **Vegetables**

- **Powdery mildew** incidence will be high in all vegetables (solaceous and cucurbitaceous). If temperature is not high wettable sulphur can be given. If temperature increases spraying of wettable sulphur should be avoided. Hexaconazole at 0.1% along with sticker 0.5ml/ l will be effective in controlling the powdery mildews in vegetables.
- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Difenoconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) along with sticker 0.5ml/l will be effective.

## **Ornamentals**

- **Powdery mildews** in rose and gerbera. Spraying azoxystrobin at 0.1% along with sticker 0.5ml/l will help in reducing powdery mildew spread under protected cultivation. In not spread extensively tebuconazole or hexaconazole at 0.1% with sticker also will help.

## **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.

**CROP WEATHER SITUATION  
METEOROLOGICAL DATA OF  
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**Period: 16<sup>th</sup> to 31<sup>st</sup> January, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| January 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 28.5             | 11.6         | 76.7                  | 34.5              | 4.5              | 1.35              | 0.0                 |
|   | (28.2)           | (15.9)       | (74.5)                | (45.0)            | (4.1)            | (3.6)             | (0.0)               |

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

**Fortnight from 16<sup>th</sup> to 31<sup>st</sup> January, 2018**

During the second fortnight of the month i.e., from January 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum temperature was higher by 0.3<sup>o</sup>C and the minimum temperature was lower by 2.2<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature was higher by 0.2<sup>o</sup>C and minimum temperature was lower by and 0.5<sup>o</sup>C respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 0.4% and 4.0% respectively, as compared to the previous fortnight. There was no rainfall during the fortnight.

**Crop weather situation**

Maximum day temperatures are more or less same as the average value of previous 5 years. Weather remained dry with evaporation above average. Farmers may cover the basins of tree crops with available mulches to minimize evaporation. Foliar spray of micronutrients may be given to encourage the growth in late rabi vegetables.

**Incidence of pests and diseases**

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

**Mango**

➤ Leafhopper incidence can be managed by spraying Lambda Cyhalothrin@1ml/l.

**Citrus**

➤ In young orchards Citrus leafminer was noticed, spray cypemethrin@1 ml/l.

**Guava**

➤ Tea mosquito bug incidence was noticed. Weekly spraying of *Beauveria bassiana* @ 1x10<sup>9</sup> spores/ml will reduce the pest damage.

### Tomato

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### Cabbage

- Diamond Back moth, *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

### Rose

- Aphid infestation may further increase on rose in open field conditions. Recommended to spray Dimethoate @2ml/l.

### Gerbera

- Under polyhouse conditions in gerbera crop leafminer infestation will be increased. It is recommended to spray cypermethrin@1ml/l.

\*Safe waiting periods are to be followed as per the label claims

## Disease Scenario

Disease forecast based on weather parameters during the second fortnight of January, 2018.

### Fruit crops

#### Mango

- **Powdery mildew** requires attention. At this point of time application of wettable sulphur is not advisable because of increase in temperature during day time. Anthracnose spots might further increase on foliage. Application of Mancozeb + Dinocap (Dikar) (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of **Anthracnose** spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) 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%).

#### Grape

- **Anthracnose** and **Powdery mildew** (*Uncinula necator*) infection may be noticed. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendazim + Mancozeb (0.2%) /Bitertanol (0.2%) whereas for powdery mildew application of Azoxystrobin (0.1%) or Triadimefon (0.1%) along with sticker @ 0.5 ml/ l may be used for the management of disease.

#### Papaya

- Infection of **Black spot** (*Asperisporium caricae*) may further increase. Application of Chlorothalonil (0.2%) / Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### Vegetables

- **Powdery mildew** incidence will be high in all vegetables (solaceous and cucurbitaceous). If temperature is not high wettable sulphur can be given. If temperature increases spraying of wettable sulphur should be avoided. Hexaconazole at 0.1% along with sticker 0.5ml/ l will be effective in controlling the powdery mildews in vegetables.
- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendazim + Mancozeb (0.2%) /Bitertanol (0.2%) along with sticker 0.5ml/l will be effective.

### **Ornamentals**

- **Powdery mildew** in rose and gerbera. Spraying azoxystrobin at 0.1% along with sticker 0.5ml/l will help in reducing powdery mildew spread under protected cultivation. If not spread extensively tebuconazole or hexaconazole at 0.1% with sticker also will help.

### **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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METEOROLOGICAL DATA OF  
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HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

**Period: 1<sup>st</sup> to 15<sup>th</sup> February, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| February 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 29.6             | 13.5         | 70.8                  | 34.9              | 4.8              | 1.67              | 0.5                 |
|   | (28.7)           | (15.9)       | (69.6)                | (43.9)            | (4.6)            | (3.8)             | (0.0)               |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> February, 2018**

During the first fortnight of the month i.e., from February 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum and minimum temperatures were higher by 1.1<sup>o</sup>C and 1.9<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature was higher by 0.5<sup>o</sup>C while the minimum temperature remains same respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was lower by 5.9% while at afternoon it was higher by 0.5% respectively, as compared to the previous fortnight. There was 0.5mm rainfall during the fortnight.

**Crop weather situation**

As temperature is rising, supplemental irrigation to rabi vegetables may be given to protect them. Similarly, vegetable special micronutrient sprays may be given to supply required micro nutrients. Mulching may be provided to basins of fruit trees to reduce evaporation losses. The temperature conditions of the last fortnight were suitable for the cultivation of king oyster mushroom and other oyster mushroom species. Humidity being low, there is a need to take extra care for humidity maintenance.

**Incidence of pests and diseases**

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:

**Citrus**

➤ In young orchards, Citrus leafminer was noticed, spray cypemethrin@1 ml/lit.

**Mango**

➤ Leafhopper incidence can be managed by spraying Lambda Cyhalothrin@1ml/lit.

**Tomato**

➤ Population of tomato fruit borer, *Tuta obsuluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/lit.

## Cabbage

- Diamond Back moth *Plutella xylostella* incidence was noticed. Spraying IIHR neem soap at 10g/lt will help in minimizing or repelling the egg laying by adult moths.

## Rose

- Aphid infestation may further increase on rose in open field conditions. Recommended to spray Dimethoate @2ml/lt.

## Gerbera

- Under polyhouse conditions in gerbera crop leafminer infestation will be increased. Recommended to spray cypermethrin@1ml/lt.

**\*Safe waiting periods are to be followed as per the label claims**

## Disease Scenario

Disease forecast based on weather parameters during the **first fortnight of February, 2018.**

## Fruit crops

### Grape

- Anthracnose and Powdery mildew (*Uncinula necator*) infection may be noticed. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%), / Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%), whereas for powdery mildew, application of Azoxystrobin (0.1%) or Triadimefon (0.1%) along with sticker @ 0.5 ml/ l is recommended for the management of disease.

### 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 Mancozeb + Dinocap (Dikar) (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) is recommended along with sticker @ 0.5 ml/ l.

## Vegetables

- **Powdery mildew** incidence will be high in all vegetables (solaceous and cucurbitaceous). If temperature is not high, wettable sulphur can be given. If temperature increases, spraying of wettable sulphur should be avoided. Hexaconazole at 0.1% along with sticker 0.5ml/ l will be effective in controlling the powdery mildews in vegetables.
- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) along with sticker 0.5ml/l will be effective.

## Ornamentals

- **Powdery mildews** in rose and gerbera. Spraying azoxystrobin at 0.1% along with sticker 0.5ml/l will help in reducing powdery mildew spread under protected cultivation. If not spread extensively tebuconazole or hexaconazole at 0.1% with sticker also will help.
- **Chrysanthemum rust:** specifically in the variety locally named as marigold chrysanthemum it is severe. Spray of chlorothalonil at 0.2% at 15 days interval will reduce the incidence. In severe cases it can be alternated with propiconazole at 0.1%.

## **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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METEOROLOGICAL DATA OF  
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**Period: 16<sup>th</sup> to 28<sup>th</sup> February, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| February 16 <sup>th</sup> to 28 <sup>th</sup> , 2018 | 30.84            | 11.9         | 63.8                  | 19.54             | 6.47             | 2.58              | 0.0                 |
|  | (30.0)           | (16.9)       | (63.2)                | (38.7)            | (5.30)           | (4.0)             | (0.0)               |

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

**Fortnight from 16<sup>th</sup> to 28<sup>th</sup> February, 2018**

During the second fortnight of the month i.e., from February 16<sup>th</sup> to 28<sup>th</sup>, 2018, the average maximum temperature was higher by 1.24<sup>o</sup>C and the minimum temperature was lower by 1.6<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were higher by 1.3<sup>o</sup>C and 1.0<sup>o</sup>C respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 7% and 15.36% respectively, as compared to the previous fortnight. There was no rainfall during the fortnight.

**Crop weather situation**

Night temperature continued to be below average during second fortnight of February also. This has led to poor fruit retention in mango. Whatever fruit is retained must be given full care to reap the benefit. Farmers are advised to spray mango special in orchards. Vegetable farmers are advised to use both AMC and vegetable special for achieving desirable results. In pomegranate, farmers must be careful in irrigating the crop as either excess or deficit irrigation will lead to fruit cracking. Temperature conditions of the second fortnight was suitable for Oyster and Milky mushroom cultivation. However, due to low ambient humidity additional measures to maintain humidity was needed.

**Incidence of pests and diseases**

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

**Citrus**

- In young orchards Citrus leafminer was noticed, spray cypemethrin@1 ml/l.

**Tomato**

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### **Cabbage**

- Diamond Back moth *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

### **Bittergourd**

- Incidence of aphids was observed, can be minimized by spraying Dimethoate @2ml/l.

### **Rose**

- Thrips infestation is increased, can be minimized by spraying Spinosad @0.25ml/l.

### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad @ 0.25ml/l.

### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

\*Safe waiting periods are to be followed as per the label claims

## **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of February, 2018.

### **Fruit crops**

#### **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 Mancozeb + Dinocap (Dikar) (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) 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%).

#### **Grapes**

- Anthracnose may be noticed. For anthracnose application of Difenconazole (0.05%) / Thiophanate methyl (0.1%) / Carbendzim + Mancozeb (0.2%) / Bitertanol (0.2%) whereas for powdery mildew, application of Azoxystrobin (0.1%) or Triadimefon (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 Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l.

### **Vegetables**

- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Difenconazole (0.05%) / Thiophanate methyl (0.1%) / Carbendzim + Mancozeb (0.2%) / Bitertanol (0.2%) 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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**Period: 1<sup>st</sup> to 15<sup>th</sup> March, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature ( <sup>o</sup> C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|-------------------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.                  | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| March 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 32.4                          | 19.0         | 56.27                 | 18.13             | 7.2              | 3.02              | 26.35               |
|  | (31.1)                        | (20.2)       | (72.5)                | (46.1)            | (5.8)            | (4.4)             | (10.0)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> March, 2018**

During the first fortnight of the month i.e., from March 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum and minimum temperatures were higher by 1.56<sup>o</sup>C and 7.1<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were higher by 1.1<sup>o</sup>C and 3.3<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 7.5% and 1.4% respectively, as compared to the previous fortnight. There was 26.35mm rainfall during the fortnight.

**Crop weather situation**

As there was some rainfall during the fortnight which is more than double the amount of average rainfall received during last 5 years, there will be sufficient moisture in the soil which may be conducive for top dressing of nutrients wherever it is required. Spray of 0.5 % SOP may improve fruit quality in banana. The temperature conditions during the fortnight was suitable for oyster and milky mushroom cultivation. However due to low ambient humidity additional measures to maintain humidity was needed.

**Incidence of pests and diseases**

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:

**Citrus**

➤ In young orchards, Citrus leafminer was noticed, spray cypemethrin@1 ml/lt.

**Mango**

➤ Leafhopper incidence can be managed by spraying Lambda Cyhalothrin@1ml/lt.

**Guava**

➤ Mealybug, *Ferrisia virgata* incidence was severe.

## Tomato

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/lt.

## Cabbage

- Diamond Back moth *Plutella xylostella* incidence was noticed. Spraying IHR neem soap at 10g/lt will help in minimizing or repelling the egg laying by adult moths.

## Rose

- Aphid infestation may further increase on rose in open field conditions. Recommended to spray Dimethoate @2ml/lt.

## Gerbera

- Under polyhouse conditions in gerbera crop leafminer infestation will be increased. Recommended to spray cypermethrin@1ml/lt.

**\*Safe waiting periods are to be followed as per the label claims**

## Disease Scenario

Disease forecast based on weather parameters during the **first fortnight of March, 2018.**

## Fruit crops

### Grape

- Anthracnose and Powdery mildew (*Uncinula necator*) infection may be noticed. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%), / Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%), whereas for powdery mildew, application of Azoxystrobin (0.1%) or Triadimefon (0.1%) along with sticker @ 0.5 ml/lt is recommended for the management of disease.

### 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 Mancozeb + Dinocap (Dikar) (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) 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 / lt) is recommended. Further hopper and other insect management is important with suitable insecticides (Imidacloprid @ 0.5%).

## Vegetables

- **Powdery mildew** incidence will be high in all vegetables (solaceous and cucurbitaceous). If temperature is not high, wettable sulphur can be given. If temperature increases, spraying of wettable sulphur should be avoided. Hexaconazole at 0.1% along with sticker 0.5ml/ l will be effective in controlling the powdery mildews in vegetables.
- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) 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.

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

**Period: 16<sup>th</sup> to 31<sup>st</sup> March, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| March 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 32.8             | 19.0         | 75.9                  | 35.9              | 5.7              | 1.6               | 54.2                |
|   | (33.9)           | (20.3)       | (68.3)                | (43.6)            | (6.5)            | (4.1)             | (0.0)               |

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

**Fortnight from 16<sup>th</sup> to 31<sup>st</sup> March, 2018**

During the second fortnight of the month i.e., from March 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum temperature was higher by 0.4<sup>o</sup>C and the minimum temperature remains the same respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were higher by 2.8<sup>o</sup>C and 0.1<sup>o</sup>C respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 19.6% and 17.8% respectively, as compared to the previous fortnight. There was no rainfall during the fortnight.

**Crop weather situation**

There was good amount of rainfall during the fortnight. Temperatures were slightly lower. Wind speed and evaporation rate were also lower. This was very conducive for any intercultural operations to be taken up in horticultural crops during this period. This increased soil moisture was good for the standing mango, banana crops and summer vegetables like tomato, cucurbits. The availability of nutrients like N, P, K, B, Zn will be more and it will enhance crop growth and yield. The weather of the last fortnight was suitable for Milky mushroom cultivation. Cultivation of other species like Oyster and Shiitake mushroom needed reducing of temperature for optional yield.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the second fortnight of march and their management options are mentioned below.

**Guava**

- Tea mosquito bug incidence was noticed. Weekly spraying of *Beauveria bassiana* @ 1x10<sup>9</sup> spores/ml will reduce the pest damage.

**Tomato**

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @ 1ml/l.

### **Bittergourd**

- Incidence of aphids was observed, can be minimized by spraying Dimethoate @2ml/l

### **Cabbage**

- Aphids and diamond Back moth *Plutella xylostella* incidence was noticed. Spray IIHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

### **Rose**

- Thrips infestation had increased, can be minimized by spraying Spinosad @0.25ml/l.

### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l.

### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

\*Safe waiting periods are to be followed as per the label claims

## **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of March, 2018.

### **Fruit crops**

#### **Mango**

- **Anthracnose** spots might further increase on foliage. Application of Mancozeb + Dinocap (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) 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%).

#### **Grape**

- **Anthracnose** infection may be noticed. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) along with sticker @ 0.5 ml/ l is recommended for the management of disease.

#### **Vegetables**

- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) 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.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> April, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| April 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 32.8             | 18.8         | 68.2                  | 33.9              | 5.6              | 1.16              | 1.3                 |
|  | (32.7)           | (20.7)       | (70.8)                | (41.8)            | (6.2)            | (5.2)             | (11.9)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> April, 2018**

During the first fortnight of the month i.e., from April 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum temperature remains the same whereas the minimum temperature was lower by 0.2<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature was lower by 1.2<sup>o</sup>C whereas minimum temperature was higher by 0.4<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 7.7% and 2.0% respectively, as compared to the previous fortnight. There was 1.3mm rainfall during the fortnight.

**Crop weather situation**

There was scanty rainfall during last fortnight compared to average value of previous 5 years rainfall. Frequent protective irrigation may be given to standing summer vegetable crops as well as fruit crops like banana. Fertilizer application may be avoided during this moisture deficit period. If this dry period continues fruit dropping will increase in mango. Hence, optimum moisture may be maintained in mango orchards to retain fruit setting.

**Incidence of pests and diseases**

Under the prevailing weather situation, following pest incidence was noticed during the first fortnight of April under Bangalore conditions on various horticultural crops and their management options are mentioned below.

**Guava**

- Mealybug, *Ferrisia virgata* incidence was severe.

**Tomato**

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

**Cabbage**

- Aphids and diamond Back moth *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

### **Rose**

- Thrips infestation has increased which can be minimized by spraying Spinosad @0.25ml/l.

### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence was severe. Recommended to spray spinosad@0.25ml/l.

### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

**\*Safe waiting periods are to be followed as per the label claims**

### **Disease Scenario**

Disease forecast based on weather parameters during the **first fortnight of April, 2018**.

### **Fruit crops**

#### **Mango**

- Anthracnose spots might further increase on foliage. Application of Mancozeb + Dinocap (0.3%) or Tridemorph (0.1%) or Hexaconazole (0.1%) is recommended for the disease management. Severity of Anthracnose spots might increase. Application of Difenconazole (0.05%) or Thiophanate methyl (0.1%) 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%).

#### **Pomegranate**

- After having the crop in the earlier months when the farmers are giving rest period, that time also one spray of copper based fungicides is recommended to avoid the spread of bacterial blight that can increase after summer showers.

#### **Vegetables**

- **Anthracnose** in vegetables will increase especially in chillies. For anthracnose, application of Difenconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) along with sticker 0.5ml/l will be effective.

#### **Nursery/ seedlings**

- In nursery the preventive spray with neem soap or neem oil is recommended to avoid the virus vectors that transmit the virus disease. One spray of systemic insecticide also will help.

#### **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.

**CROP WEATHER SITUATION  
METEOROLOGICAL DATA OF  
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HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

**Period: 16<sup>th</sup> to 30<sup>th</sup> April, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| April 16 <sup>th</sup> to 30 <sup>th</sup> , 2018 | 34.4             | 21.2         | 67.9                  | 34.9              | 6.1              | 1.16              | 13.5                |
|   | (33.4)           | (21.5)       | (72.9)                | (41.1)            | (6.0)            | (4.2)             | (17.5)              |

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

**Fortnight from 16<sup>th</sup> to 30<sup>th</sup> April, 2018**

During the first fortnight of the month i.e., from April 16<sup>th</sup> to 30<sup>th</sup>, 2018, the average maximum and minimum temperatures were higher by 1.6<sup>o</sup>C and 2.4<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were higher by 0.7<sup>o</sup>C and 0.8<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was lower by 0.3% whereas during afternoon it was higher by 1.0% respectively, as compared to the previous fortnight. There was 13.5mm rainfall during the fortnight.

**Crop weather situation**

There was not much variation in Maximum and minimum temperatures of second fortnight of April when compared with average values of previous 5 years, though relative humidity and rainfall were slightly low. Wind speed was also considerably low. Summer showers received during this fortnight might have eased the irrigation requirements. Intercultural operations can be taken up in the orchards as soil conditions are good now.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the second fortnight of April and their management options are mentioned below.

**Fruit Crops**

**Mango**

➤ For monitoring Mango fruit fly *Bactrocera dorsalis* fruit fly traps are to be set up @ 6/ac.

**Guava**

➤ Mealybug, *Ferrisia virgata* incidence was severe.

**Vegetable Crops**

**Tomato**

➤ Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### **Brinjal**

- For the management of weevil drench the soil with chlorpyrifos @2ml/l

### **Bittergourd**

- Incidence of aphids was observed, can be minimized by spraying Dimethoate @2ml/l.

### **Floriculture**

#### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

#### **Rose**

- Thrips infestation is increased, can be minimized by spraying Spinosad @0.25ml/l.

#### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l.

**\*Safe waiting periods are to be followed as per the label claims**

### **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of April, 2018.

### **Fruit crops**

#### **Mango**

- Anthracnose (*C. gloeosporioides*) and stem end rot (*L. theobromae*) are expected to infect mango fruits during ripening. Pre-harvest sprays with Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Azoxystrobin (0.1%) followed by post-harvest treatments with Hot water (52°C) for ten minutes is recommended.

#### **Banana**

- Low incidence of Sigatoka (*Mycosphaerella* sp) and other leaf spots needs attention. The disease can be managed by the application of with Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%) whereas crown rot, anthracnose and Macrophoma fruit spot disease (Specially on var. Grand Naine) could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.

#### **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 (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.
- Nodal Blight needs further attention. Application of COC (0.2%) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

#### **Papaya**

- Infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may further increase. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

#### **Guava**

- Canker (*Pestalotiopsis psidi*) in greenish immature guava fruits and styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) should be taken care.. For the disease

management application of Zineb (0.3%) or Ziride (0.4%) followed with Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ along with sticker (0.5 ml /l) should be followed.

### **Vegetables**

- Due to intermittent rains as summer showers which was more than expected, the increased incidence of foliar diseases like anthracnose, leaf spots due to Alternaria and Cercospora is expected. For anthracnose application of Difenoconazole (0.05%)/ Thiophanate methyl (0.1%),/ Carbendzim + Mancozeb (0.2%) /Bitertanol (0.2%) along with sticker 0.5ml/l will be effective. For leaf spots preventive spray with chlorathalanil or mancozeb @ 0.2% will reduce the incidence.

### **Floriculture**

- Leaf spots in rose and gerbera. Spraying trifloxistrobin at 0.1% along with sticker 0.5ml/l will help in reducing powdery mildew spread under protected cultivation. If not spread extensively tebuconazole or hexaconazole at 0.1% with sticker also will help.

### **Virus diseases**

- Change in weather especially low humidity with increase in temperature favours sucking pests which are vectors of many virus diseases. Dry spells followed by intermittent rains and high temperature favour vector populations. Seed treatment with imidacloprid or spray of acephate (0.2%) will be effective in controlling vector population in vegetables. For perennial crops acephate spray at 0.2% will reduce vectors.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> May, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight                                      | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| May 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 33.4             | 21.2         | 75.2                  | 45.7              | 5.2              | 2.29              | 67.2                |
|  | (31.8)           | (20.6)       | (74.9)                | (46.3)            | (5.0)            | (3.5)             | (64.8)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> May, 2018**

During the first fortnight of the month i.e., from May 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum temperature was lower by 1.0<sup>o</sup>C whereas the minimum temperature remains the same respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were lower by 1.6<sup>o</sup>C and 0.9<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 7.3% and 10.8% respectively, as compared to the previous fortnight. There was 67.2mm rainfall during the fortnight.

**Crop weather situation**

There was good amount of rainfall during the first fortnight of May, 2018. For crops like papaya which do not tolerate water stagnation, drainage to remove excess standing water may be provided. Due to good soil moisture content nutrient uptake will be good. Crop growth and yield of summer vegetables will be good. But this excess rain may affect fruit quality in mango and may increase mango fruit drop. The weather during the fortnight was suitable for the cultivation of Oyster Mushroom (*Pleurotus* spp.), Paddy straw mushroom (*Volvariella* spp) and Milky mushroom (*Calocybe indica*). *Macrocybe crassa* could also be grown under these conditions. Species of *Lentinula edodes*, *Pleurotus eryngi* and *Hypsizyguus tessulatus* required additional cooling.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Guava**

➤ Mealybug, *Ferrisia virgata* incidence was severe.

**Jamun**

➤ Fruit weevil incidence is observed.

### **Custard apple**

- Tea mosquito bug was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

### **Vegetable Crops**

#### **Tomato**

- Population of tomato fruit borer, *Tuta obsuluta* will increase and can be managed by spraying Spinosad @0.3ml/l or Spinetoram @1ml/l.

#### **Capsicum**

- Thrips infestation was high. Recommended to spray spinosad @0.25ml/l.

#### **Cabbage**

- Aphids and diamond Back moth *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

### **Floriculture:**

#### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

#### **Rose**

- Thrips infestation is increased, can be minimized by spraying Spinosad @0.25ml/l.

#### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad @0.25ml/l.

\*Safe waiting periods are to be followed as per the label claims

### **Disease Scenario**

Disease forecast based on weather parameters during the first fortnight of May, 2018.

### **Fruit crops**

#### **Mango**

- Anthracnose (*C. gloeosporioides*) and stem end rot (*L. theobromae*) occur in mango fruits during ripening. Pre-harvest sprays with Carbendazim (0.1%) or Thiophanate methyl (0.1%) followed by post-harvest treatments with Hot water (52°C) for ten minutes is recommended. Care should be taken that at the time of spraying there should be minimum of 15-20 day time is there before harvest.

#### **Grape**

- Anthracnose: spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective along with sticker @ 0.5 ml/ l.

#### **Pomegranate**

- Nodal Blight needs further attention due to the intermittent summer showers. Application of COC (0.2%) + Streptocycline (300 ppm) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

#### **Banana**

- Low incidence of Sigatoka (*Mycosphaerella* sp) and other leaf spots needs attention. The disease can be managed by the application of with Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%) whereas crown rot, anthracnose and Macrophoma fruit spot disease (Specially on var. Grand Naine) could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.

### **Papaya**

- Infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may further increase. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Guava**

- Canker (*Pestalotiopsis psidi*) in greenish immature guava fruits and styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) should be taken care. For the disease management application of Zineb (0.3%) or Ziride (0.4%) followed with Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ along with sticker (0.5 ml /l) should be followed.

### **Vegetable crops**

#### **Tomato**

- To prevent the early leaf blight disease free seedlings are to be used. Seed treatment with captan or thiram (3g per kg of seeds) or seedling dip with copper oxy chloride (0.3%) also protects plants from various soil borne pathogens. It is the time for the protective sprays of contact fungicides like mancozeb, copper oxychloride or chlorothalonil on tomato to avoid early leaf blight. In case of serious spread due to rain splash follow up spray with propineb (0.2%) or meitiram (0.2%) or pyraclostrobin + metiram (0.2%) at fortnightly interval.

#### **Onion**

- To avoid the purple blotch and Stemphyllum leaf blight application of fungicides such as Chlorothalonil (0.2 %) or Propineb (0.2 %) or Mancozeb (0.2%) at fortnightly intervals from onset of the disease will be useful.

#### **Cucurbits**

- To avoid the spread of downy mildew spraying Chlorothalonil (0.2%) or Mancozeb(0.2%) or Metalaxyl -Mancozeb(0.2%) or Fosetyl-AI (0.2%) or Cymoxanil- mancozeb(0.2%) 10-day intervals from onset of the disease.

#### **Viral diseases in tomato and chilli**

- To avoid the spread of viral diseases spraying insecticides like Monocrotophos (0.15%), Acephate (0.15%) or Hostothion (0.1 %) at fortnightly intervals after transplanting till flowering stage.

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**Period: 16<sup>th</sup> to 31<sup>st</sup> May, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight                                       | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| May 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 31.3             | 20.9         | 85.0                  | 56.1              | 5.9              | 2.89              | 199.3               |
|   | (32.1)           | (20.3)       | (75.9)                | (43.8)            | (5.5)            | (5.0)             | (93.8)              |

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

**Fortnight from 16<sup>th</sup> to 31<sup>st</sup> May, 2018**

During the second fortnight of the month i.e., from May 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum and minimum temperatures were lower by 2.1<sup>o</sup>C and 0.3<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature was higher by 0.3<sup>o</sup>C and minimum temperature was lower by 0.3<sup>o</sup>C respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 9.8% and 10.4% respectively, as compared to the previous fortnight. There was 199.3mm rainfall during the fortnight.

**Crop weather situation**

There was about more than 2 folds of rainfall received compared to average rainfall of previous five years. Care may be taken to provide drainage to remove excess water from basins of fruit crops like papaya, to prevent rotting and other diseases. Once normal moisture conditions are there field preparation for kharif vegetables and planting of other horticultural crops may be taken up.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the second fortnight of march and their management options are mentioned below.

**Fruit Crops**

**Pomegranate**

- Thrips damage on fruits were observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15 days intervals was recommended.

**Custard apple**

- Tea mosquito bug was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

**Guava**

- Mealybug, *Ferrisia virgata* incidence was severe.

### **Jamun**

- Fruit weevil incidence is observed.

### **Vegetable Crops**

#### **Tomato**

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

#### **Capsicum**

- Thrips infestation was high. Recommended to spray spinosad@0.25ml/l.

#### **Cabbage**

- Aphids and diamond Back moth *Plutella xylostella* incidence was noticed. Spray IIHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

### **Floriculture**

#### **Rose**

- Thrips infestation is increased, can be minimized by spraying Spinosad @0.25ml/l.

#### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l.

#### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

\*Safe waiting periods are to be followed as per the label claims

### **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of May, 2018.

### **Fruit crops**

#### **Mango**

- Anthracnose (*C. gloeosporioides*) and stem end rot (*L. theobromae*) occur in mango fruits during ripening. Pre-harvest sprays with Carbendazim (0.1%) or Thiophanate methyl (0.1%) followed by post-harvest treatments with Hot water (52°C) for ten minutes is recommended.

#### **Grape**

- Grapevines should be continued to be protected against the infection of (i) downy mildew: by the application of 0.4g Dimethomorph + 2.00 g Mancozeb /l or Metalaxyl + Mancozeb (0.2%)/ Al Fosetyl (0.2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly (ii) anthracnose: spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective along with sticker @ 0.5 ml/ l.

#### **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 (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.
- Nodal Blight needs further attention. With the early onset of rains blight incidence will increase. Application of COC (0.2%) + Streptocycline (300 ppm) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days. Preventive sprays of plant health promoters like Arka Microbial consortium or Arka Actinoplus would help in better plant growth and there by induced resistance.

### **Banana**

- Low incidence of Sigatoka (*Mycosphaerella* sp) and other leaf spots needs attention. The disease can be managed by the application of with Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%) whereas crown rot, anthracnose and Macrophoma fruit spot disease (Specially on var. Grand Naine) could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post-harvest dip in Chlorine water (300 ppm) for 10 minutes.

### **Papaya**

- Infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may further increase. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Guava**

- Canker (*Pestalotiopsis psidi*) in greenish immature guava fruits and styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) should be taken care. For the disease management application of Zineb (0.3%) or Ziride (0.4%) followed with Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ along with sticker (0.5 ml /l) should be followed.

### **Vegetable Crops**

#### **Tomato**

- To prevent the early leaf blight disease free seedlings are to be used. Seed treatment with captan or thiram (3g per kg of seeds) or seedling dip with copper oxy chloride (0.3%) also protects plants from various soil borne pathogens. It is the time for the protective sprays of contact fungicides like mancozeb, copper oxychloride or chlorothalonil on tomato to avoid early leaf blight. In case of serious spread due to rain splash follow up spray with propineb (0.2%) or meitiram (0.2%) or pyraclostrobin + metiram (0.2%) at fortnightly interval.

#### **Onion**

- To avoid the purple blotch and Stemphyllum leaf blight application of fungicides such as Chlorothalonil (0.2 %) or Propineb (0.2 %) or Mancozeb (0.2%) at fortnightly intervals from onset of the disease will be useful

#### **Cucurbits**

- To avoid the spread of downy mildew spraying Chlorothalonil (0.2%) or Mancozeb(0.2%) or Metalaxyl -Mancozeb(0.2%) or Fosetyl-AI (0.2%) or Cymoxanil- mancozeb(0.2%) 10-day intervals from onset of the disease.

#### **Viral diseases in tomato and chilli**

- To avoid the spread of viral diseases spraying insecticides like Monocrotophos (0.15%), Acephate (0.15%) or Hostothion (0.1 %) at fortnightly intervals after transplanting till flowering stage.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> June, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight                                       | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| June 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 28.9             | 21.0         | 81.6                  | 68.1              | 4.77             | 6.75              | 48                  |
|   | (30.9)           | (19.8)       | (75.8)                | (48.0)            | (5.1)            | (5.7)             | (51.8)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> June, 2018**

During the first fortnight of the month i.e., from June 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum temperature was lower by 2.4<sup>o</sup>C whereas the minimum temperature was higher by 0.1<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were lower by 1.2<sup>o</sup>C and 0.5<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was lower by 3.4% whereas during afternoon it was higher by 12.0% respectively, as compared to the previous fortnight. There was 48.0mm rainfall during the fortnight.

**Crop weather situation**

The amount of rainfall received is good though it is slightly lower than the average value of previous 5 years. The soil condition will be good with sufficient soil moisture for field preparation for planting kharif vegetables or other horticultural crops. The soil condition is also conducive for application of either basal dose or top dressing of required nutrients to horticultural crops.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Guava**

➤ Mealybug, *Ferrisia virgata* incidence was severe.

**Custard apple**

➤ Tea mosquito bug was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

**Pomegranate**

➤ Thrips damage on fruits were observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15 days intervals was recommended.

**Jamun**

➤ Fruit weevil incidence is observed.

## Vegetable Crops

### Tomato

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### Capsicum

- Thrips infestation was high. Recommended to spray Spinosad@0.25ml/l.

## Ornamentals

### Tuberose

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

### Gerbera

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray Spinosad@0.25ml/l.

\*Safe waiting periods are to be followed as per the label claims

## Disease Scenario

Disease forecast based on weather parameters during the first fortnight of June, 2018.

## Fruit crops

### Mango

- Anthracnose (*C. gloeosporioides*) and stem end rot (*L. theobromae* and *P. mangiferae*) are common in mango fruits during ripening. Pre-harvest sprays with Carbendazim (0.1%) or Thiophanate methyl (0.1%) followed by post-harvest treatments with Hot water (52°C) for ten minutes is recommended.

### Grape

- Grapevines should be continued to be protected against the infection of (i) downy mildew: by the application of 0.4g Dimethomorph + 2.00 g Mancozeb /l or Metalaxyl + Mancozeb (0.2%)/ Al Fosetyl (0.2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly (ii) anthracnose: spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective along with sticker @ 0.5 ml/ l.

### Papaya

- Infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may further increase. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) 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 (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.
- Nodal Blight needs further attention. Application of COC (0.2%) + Streptocycline (300 ppm) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

### Guava

- Canker (*Pestalotiopsis psidi*) in greenish immature guava fruits and styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) should be taken care. For the disease management

application of Zineb (0.3%) or Ziride (0.4%) followed with Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ along with sticker (0.5 ml /l) should be followed.

### **Vegetables**

- In cucurbits it is time to monitor the downy mildews. Continuous rain and warm weather favour the disease. Spray of metalaxyl at 0.2% will reduce the spread. In tomato with the onset of monsoon the spread of buck eye spot damage on fruits may occur. This can be prevented by spray of copper oxy chloride at 3g/l and in severe cases spray with fenamidon + mancozeb at 0.2% will reduce the disease incidence. In chillies the leaf curl will spread further. Suitable insecticides to be applied to control the insect vectors.

### **Ornamentals**

The black spot of rose can be managed by spray with trifloxystrobin + tebuconazole at 0.1% at 15 days interval. For the downy mildew

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HESSARAGHATTA LAKE P.O., BANGALORE – 560 089**

**Period: 16<sup>th</sup> to 30<sup>th</sup> June, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| June 16 <sup>th</sup> to 30 <sup>th</sup> , 2018 | 28.7             | 19.9         | 79.4                  | 60.9              | 4.6              | 8.2               | 12.6                |
|  | (29.3)           | (20.3)       | (78.0)                | (51.5)            | (3.7)            | (6.0)             | (29.8)              |

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

**Fortnight from 16<sup>th</sup> to 30<sup>th</sup> June, 2018**

During the second fortnight of the month i.e., from June 16<sup>th</sup> to 30<sup>th</sup>, 2018, the average maximum and minimum temperatures were lower by 0.2°C and 1.1°C respectively, as compared to the previous fortnight. The average maximum temperature was lower by 1.6°C and minimum temperature was higher by 0.5°C respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 2.2% and 7.2% respectively, as compared to the previous fortnight. There was 12.6 mm rainfall during the fortnight.

**Crop weather situation**

Rainfall is less than the average value of previous 5 years. Wind speed and evaporation are more. Though temperatures are slightly less than the previous 5 years average value, due to high evaporation rate and low rainfall, supplemental irrigation may be given to crop like banana. In soils where sufficient soil moisture is there field preparation may be completed. The weather during the second fortnight was suitable for the cultivation of Oyster Mushroom (*Pleurotus spp.*), Paddy straw mushroom (*Volvariella spp*) and Milky mushroom (*Calocybe indica*). *Macrocybe crassa* could also be grown under these conditions. Species of *Lentinula edodes*, *Pleurotus eryngi* and *Hypsizygus tessulatus* required additional cooling.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the second fortnight of march and their management options are mentioned below.

**Fruit Crops**

**Mango**

➤ In late varieties mango fruit fly incidence was observed. Set up fruit fly traps @ 6 per acre.

**Custard apple**

➤ Tea mosquito bug was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

## **Pomegranate**

- Thrips damage on fruits was observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15 days intervals was recommended.

## **Vegetable Crops**

### **Tomato**

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l or indoxocarb @0.4ml/l.

### **Capsicum**

- Thrips infestation was high. Recommended to spray spinosad@0.25ml/l or fipronil @1.5ml/l.

## **Floriculture**

### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l.

### **Tuberose**

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l

\*Safe waiting periods are to be followed as per the label claims

## **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of **June, 2018**.

## **Fruit crops**

### **Grape**

- Grapevines should be continued to be protected against the infection of (i) downy mildew: by the application of 0.4g Dimethomorph + 2.00 g Mancozeb /l or Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly (ii) anthracnose: spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective along with sticker @ 0.5 ml/ l. (iii) Rust (on var Bangalore blue): treatment with Chlorothalonil (0.2%) or Bitertanol (0.2%).

### **Banana**

- Moderate increase in the intensity of Sigatoka leaf spot (*Mycosphaerella* sp) was noticed compared with the last fortnight whereas anthracnose of fruits (*C. musae*) and crown rot caused by *Fusarium moniliformae* were recorded. For controlling Sigatoka application of Dinocap (0.1%) or Chlorothalonil (0.2%) is recommended whereas crown rot and anthracnose could be effectively managed by the pre-harvest sprays with Carbendazim (0.1%) or Thiophanate methyl (0.1%) followed by post harvest dip in Chlorine water (300 ppm) for 10 minutes.

### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) needs attention. Application of Chlorothalonil (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.
- Nodal Blight needs continuous attention. Application of COC (0.2%) + Streptocycline (300 ppm) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

## **Papaya**

- Foliar, fruit as well as internal infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may advance Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

## **Vegetable Crops**

### **Tomato**

- It is the time for the protective sprays of contact fungicides like mancozeb, copper oxychloride or chlorothalonil on tomato to avoid early leaf blight. In case of serious spread due to rain splash follow up spray with propineb (0.2%) or meitiram (0.2%) or pyraclostrobin + metiram (0.2%) at fortnightly interval.

### **Onion**

- To avoid the purple blotch and *Stemphyllum* leaf blight application of fungicides such as Chlorothalonil (0.2 %) or Propineb (0.2 %) or Mancozeb (0.2%) at fortnightly intervals from onset of the disease will be useful.

### **Cucurbits**

- To avoid the spread of downy mildew spraying Chlorothalonil (0.2%) or Mancozeb(0.2%) or Metalaxyl -Mancozeb(0.2%) or Fosetyl-AI (0.2%) or Cymoxanil- mancozeb(0.2%) 10-days interval from onset of the disease.

### **Viral diseases in tomato and chilli**

- To avoid the spread of viral diseases spraying insecticides like Monocrotophos (0.15%), or Hostothion (0.1 %) at fortnightly intervals after transplanting till flowering stage.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> July, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight                                       | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| July 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 28.4             | 20.4         | 81.1                  | 64.7              | 4.1              | 7.75              | 45.75               |
|   | (27.8)           | (20.2)       | (77.0)                | (52.2)            | (3.6)            | (6.3)             | (46.1)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> July, 2018**

During the first fortnight of the month i.e., from July 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum temperature was lower by 0.3<sup>o</sup>C whereas the minimum temperature was higher by 0.5<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were lower by 1.5<sup>o</sup>C and 0.1<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 1.7% and 3.8% respectively, as compared to the previous fortnight. There was 45.75mm rainfall during the fortnight.

**Crop weather situation**

During the fortnight sufficient rainfall was there. Wind speed and evaporation rate are slightly higher. Soil condition will be good to give basal dose of recommended dose of fertilizers to fruit and vegetable crops. Wherever standing water is there near basins especially papaya crop due to heavy rains, it should be drained off.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Pomegranate**

- Thrips damage on fruits were observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15 days intervals was recommended.

**Jamun**

- Fruit weevil incidence is observed.

**Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

## Vegetable Crops

### Tomato

- Population of tomato fruit borer, *Tuta obsoluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### Capsicum

Thrips infestation was high. Recommended to spray spinosad@0.25ml/l.

### Cabbage

- Aphids and diamond Back moth *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

## Floriculture

### Tuberose

- High incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

### Rose

- Thrips infestation is increased, can be minimized by spraying Spinosad @0.25ml/l.

### Gerbera

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l.

\*Safe waiting periods are to be followed as per the label claims

## Disease Scenario

Disease forecast based on weather parameters during the first fortnight of July, 2018.

## Fruit crops

### Grape

- Grapevines needs to be protected against the infection of (i) downy mildew: by the application of 0.4g Dimethomorph + 2.00 g Mancozeb /l or Metalaxl + Mancozeb (0.2%)/ AI Fosetyl (0.2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly (ii) anthracnose: spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective along with sticker @ 0.5 ml/ l. (iii) Rust (on var Bangalore Blue): treatment with Chlorothalonil (0.2%) or Bitertanol (0.2%).

### Pomegranate

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) needs attention. Application of Chlorothalonil (0.2%) /Propineb (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.
- Fresh Bacterial blight infection can be seen due to rains. That requires continuous attention. Application of COC (0.2%) + Streptocycline (300 ppm) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

### Papaya

- Foliar, fruit as well as internal infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may advance. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

## **Sapota**

- There was no appreciable change in the intensity of leaf spot (*P. indicia*) disease compared with last fortnight. Application of Zineb (0.3%) or Ziride (0.4%) along with sticker (0.5 ml /l) are recommended for their management.

## **Vegetable Crops**

### **Tomato**

- Foliar application of copper oxychloride (0.3%) or Chlorothalonil (0.2%) or Mancozeb (0.2%) or Propineb (0.2%) or Metiram (0.2%) or Pyraclostrobin + metiram (0.2%) at fortnightly interval will reduce the spread of early leaf blight of tomato caused by *Alternaria* species. To prevent the late blight caused by *Phytophthora infestans* spraying of Mancozeb (0.2%) or Copper oxychloride (0.3%), Copper hydroxide (0.2%) or Fosetyl-AI (0.2%) or Pre-packed mixture of Metalaxyl+Mancozeb (0.2%) may be carried out that may reduce the risk of serious infection expected in the later part of the season. Spraying of acephate at .01% or imidacloprid at 0.03% will reduce the tospovirus infection spread by thrips.

### **Chillies and capsicum**

- To prevent the leaf blight by *Phytophthora capsici* spraying of Mancozeb (0.2%) or Copper oxychloride (0.3%), Copper hydroxide (0.2%) or Fosetyl-AI (0.2%) or Pre-packed mixture of MetalaxylMancozeb (0.2%) may be carried out that may reduce the risk of serious infection expected in the later part of the season. Spray of insecticides like Monocrotophos (0.15%), Acephate (0.15%) or Hostothion (0.1 %) at fortnightly intervals after transplanting, until the flowering stage will reduce vector transmitted viral diseases incidence.

### **Onion**

- Application of fungicides such as Chlorothalonil (0.2 %) or Propineb (0.2 %) or Mancozeb (0.2%) at fortnightly intervals from onset of the disease may reduce the purple blotch or *Stemphylium* leaf blight.

### **Cucurbits**

- Spraying of Chlorothalonil (0.2%) or Mancozeb (0.2%) or Metalaxyl –Mancozeb (0.2%) or Fosetyl-AI (0.2%) or Cymoxanil- mancozeb (0.2%) 10-day intervals from onset of downy mildew will reduce the damage.

## **Floriculture**

### **Rose**

- To avoid the black spot in rose prophylactic spray with contact fungicides will help (chlorothalonil or mancozeb at 0.2%) along with sticker. If severe cases trifloxystrobin+tebuconazole at 0.1% at 15 days interval will reduce the disease incidence.

### **Marigold**

- To avoid the spread of *Alternaria* blight prophylactic spray with copper oxy chloride, chlorothalonil or mancozeb at 0.2% at 15 days interval will help.

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

**Period: 16<sup>th</sup> to 31<sup>st</sup> July, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| July 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 27.9             | 20.5         | 82.9                  | 68.5              | 4.39             | 7.62              | 42.8                |
|  | (29.1)           | (20.3)       | (76.1)                | (50.0)            | (3.7)            | (6.9)             | (57.1)              |

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

**Fortnight from 16<sup>th</sup> to 31<sup>st</sup> July, 2018**

During the first fortnight of the month i.e., from July 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum temperature was lower by 0.5<sup>o</sup>C whereas the minimum temperature was higher by 0.1<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were higher by 1.3<sup>o</sup>C and 0.1<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 1.8% and 3.8% respectively, as compared to the previous fortnight. There was 42.8mm rainfall during the fortnight.

**Crop weather situation**

There was sufficient rainfall during last fortnight. Inter-culture operations may be carried out as the soil condition may be conducive. If due to heavy rainfall any Ca deficiency is observed in tomato resulting in blossom end rot it may be corrected by application of Calcium and boron.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Pomegranate**

- Thrips damage on fruits were observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15 days intervals was recommended.

**Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

**Vegetable Crops**

**Tomato**

- Population of tomato fruit borer, *Tuta obsuluta* will increase and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l

## **Cabbage**

- Aphids and diamond Back moth *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths.

## **Floriculture**

### **Rose**

- Thrips infestation was observed, can be minimized by spraying Spinosad @0.25ml/l

### **Gerbera**

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l

### **Tuberose**

- Incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l

\*Safe waiting periods are to be followed as per the label claims

## **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of July, 2018.

## **Fruit crops**

### **Grape**

- Grapevines needs to be protected against the infection of (i) downy mildew: by the application of 0.4g Dimethomorph + 2.00 g Mancozeb /l or Metalyxl + Mancozeb (0.2%)/ AI Fosetyl (0.2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly (ii) anthracnose: spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective along with sticker @ 0.5 ml/ l. (iii) Rust (on var Bangalore Blue): treatment with Chlorothalonil (0.2%) or Bitertanol (0.2%).

### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) needs attention. Application of Chlorothalonil (0.2%) /Propineb (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.
- Fresh Bacterial blight infection can be seen due to rains. That requires continuous attention. Application of COC (0.2%) + Streptomycin (300 ppm) /l along with the sticker @ 0.5ml/l should be applied at the interval of 15 – 20 days.

### **Papaya**

- Foliar, fruit as well as internal infection of Anthracnose (*C. gloeosporioides*), Black spot (*Asperisporium caricae*) may advance. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Sapota**

- There was no appreciable change in the intensity of leaf spot (*P. indicia*) disease compared with last fortnight. Application of Zineb (0.3%) or Ziride (0.4%) along with sticker (0.5 ml /l) are recommended for their management.

## **Vegetable Crops**

### **Tomato**

- Foliar application of copper oxychloride (0.3%) or Chlorothalonil (0.2%) or Mancozeb (0.2%) or Propineb (0.2%) or Metiram (0.2%) or Pyraclostrobin + metiram (0.2%) at fortnightly

interval will reduce the spread of early leaf blight of tomato caused by *Alternaria* species. To prevent the late blight caused by *Phytophthora infestans* spraying of Mancozeb (0.2%) or Copper oxychloride (0.3%), Copper hydroxide(0.2%) or Fosetyl-AI (0.2%) or Pre-packed mixture of Metalaxyl+Mancozeb (0.2%) may be carried out that may reduce the risk of serious infection expected in the later part of the season. Spraying of acephate at .01% or imidacloprid at 0.03% will reduce the tospovirus infection spread by thrips.

### **Chillies and capsicum**

- To prevent the leaf blight by *Phytophthora capsici* spraying of Mancozeb (0.2%) or Copper oxychloride (0.3%), Copper hydroxide(0.2%) or Fosetyl-AI (0.2%) or Pre-packed mixture of MetalaxylMancozeb (0.2%) may be carried out that may reduce the risk of serious infection expected in the later part of the season. Spray of insecticides like Monocrotophos (0.15%), Acephate (0.15%) or Hostothion (0.1 %) at fortnightly intervals after transplanting, until the flowering stage will reduce vector transmitted viral diseases incidence.

### **Onion**

- Application of fungicides such as Chlorothalonil (0.2 %) or Propineb (0.2 %) or Mancozeb (0.2%) at fortnightly intervals from onset of the disease may reduce the purple blotch or Stemphylium leaf blight.

### **Cucurbits**

- Spraying of Chlorothalonil (0.2%) or Mancozeb(0.2%) or Metalaxyl -Mancozeb(0.2%) or Fosetyl-AI (0.2%) or Cymoxanil- mancozeb(0.2%) 10-day intervals from onset of downy mildew will reduce the damage.

### **Floriculture**

#### **Rose**

- To avoid the black spot in rose prophylactic spray with contact fungicides will help (chlorothalonil or mancozeb at 0.2%) along with sticker. If severe cases trifloxystrobin+tebuconazole at 0.1% at 15 days interval will reduce the disease incidence.

#### **Marigold**

- To avoid the spread of *Alternaria* blight prophylactic spray with chlorothalonil or mancozeb at 0.2% at 15 days interval will help.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> August, 2018**

**Latitude: 13°7<sup>1</sup> N**

**Longitude: 77° 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| August 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 27.3             | 20.1         | 84.7                  | 73.1              | 3.7              | 2.67              | 72.0                |
|   | (28.8)           | (20.4)       | (75.0)                | (55.2)            | (3.6)            | (5.6)             | (56.2)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> August, 2018**

During the first fortnight of the month i.e., from August 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum and minimum temperatures were lower by 0.6°C and 0.4°C respectively, as compared to the previous fortnight. The average maximum temperature was lower by 0.3°C and minimum temperature was higher by 0.1°C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 1.8% and 4.6% respectively, as compared to the previous fortnight. There was 72.0 mm rainfall during the fortnight.

**Crop weather situation**

As there was excess rainfall during the fortnight, farmers may wait till suitable moisture status is attained for inter cultural operations and fertilizer application to horticultural crops. For banana plantations which were planted during June first installment of NPK fertilizers may be given. For standing vegetable crops vegetable special may be given to improve growth and yield. The climate during the first fortnight of August was highly congenial for the cultivation of oyster mushroom.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

**Pomegranate**

- Thrips damage on fruits was observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15 days intervals was recommended.

## Vegetable Crops

### Tomato

- Population of tomato fruit borer, *Tuta obsoluta* was noticed and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### Brinjal

- The incidence of brinjal shoot and fruit borer was noticed. Spraying of flubendamide @0.2 ml/l was recommended.

### Drumstick

- Tea mosquito bug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

### Cabbage

- Diamond Back moth *Plutella xylostella* incidence was noticed. Spray IIHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths. Incidence of cutworm *Spodoptera litura* was observed. Baits based on jaggery is necessary to attract and kill the larvae.

## Floriculture

### Rose

- Thrips infestation was observed, can be minimized by spraying Spinosad @0.25ml/l.

### Gerbera

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l.

### Tuberose

- Incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

\*Safe waiting periods are to be followed as per the label claims

## Disease Scenario

Disease forecast based on weather parameters during the first fortnight of August, 2018.

## Fruit Crops

### Grape

- **Downy mildew:** Protection against the infection of downy mildew by the application of 0.8 g Dimethomorph + 2.00 g Mcozeb /L or Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%).
- **Rust:** Rust needs to be taken care in grape vine orchards (var Bangalore Blue). It could be managed by the treatment with Chlorothalonil (0.2%) or Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly. In white varieties preventive sprays for anthracnose management with difenconazole 0.05% or thiophenate methyl 0.1%.

### Banana

- Intensity of Sigatoka leaf spot (*Mycosphaerella* sp) may be moderate. For controlling Sigatoka application of Tridemorph (0.1%)/ or Chlorothalonil (0.2%) is recommended. Moderate infection of Leaf (*Dieghtonella* spp.), and fruit spots (*Macrophoma* spp.) may be noticed that could be effectively managed by the pre-harvest sprays with Zineb + Hexaconazole (0.2%) or Thiophanate methyl (0.1%).

## Pomegranate

- On fresh foliage and emerging flower buds infection of anthracnose might be noticed whereas Leaf and fruit spot disease caused by *Puedocercospora punicae* may become serious These could be managed by spraying Chlorothalonil (0.2%)/Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l.
- For bacterial blight spray of Bordeaux mixture 1% along with bronopol or streptocycline at 0.5% at 15 days interval will reduce the spread of the disease.

## Vegetable Crops

- Because of intermittent rains spread of *Phytophthora* blight is expected in tomato, chilli and other crops. For initial stages preventive spray with chlorathalonil (0.2%) and Bourdeaux mixture (1%) will help. In severe conditions where spread is faster spraying with cymoxanil + mancozeb (0.1%).
- In solanaceous (tomato, capsicum, chilli) and cucurbitaceous vegetables (pumpkin, cucumber, ridge gourd etc.) **Powdery mildew** may appear with cool and dry weather. Hexaconazole at 0.2% spray with 0.5ml sticker/l will reduce the spread and severity. For Alternaria leaf spot chlorothalonil or dithane M 45 at 0.2% spray as preventive measure will reduce the disease incidence.

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

**Period: 16<sup>th</sup> to 31<sup>st</sup> August, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| August 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 28.0             | 19.8         | 85.4                  | 65.3              | 3.48             | 2.49              | 14.1                |
|  | (28.4)           | (20.0)       | (78.7)                | (55.8)            | (3.5)            | (4.4)             | (64.8)              |

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

### Fortnight from 16<sup>th</sup> to 31<sup>st</sup> August, 2018

During the first fortnight of the month i.e., from August 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum temperature was higher by 0.7<sup>o</sup>C whereas the minimum temperature was lower by 0.3<sup>o</sup>C respectively, as compared to the previous fortnight. Both average maximum and minimum temperatures were lower by 0.4<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was higher by 0.7%, whereas during afternoon it was lower 7.8% respectively, as compared to the previous fortnight. There was 14.1mm rainfall during the fortnight.

### Crop weather situation

As there was deficit rainfall during this period one or two irrigations may be given so that fruit size may not be affected in crops like guava. Similarly, due to Boron and Zn deficiency in guava

the fruits may be small and hard. Application of  $ZnSO_4$  @ 50 g/tree or 1% spray and 0.1% Boric acid might improve the size of the fruit.

### **Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

#### **Fruit Crops**

##### **Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos or profenophos @ 1.5 ml/l was recommended.

##### **Pomegranate**

- Thrips damage on fruits was observed. Spraying with Neem soap 10g/l and Pongamia soap 10g/l alternatively at 15days intervals was recommended.

##### **Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

## Vegetable Crops

### Tomato

- Population of tomato fruit borer, *Tuta obsoluta* was noticed and can be managed by spraying Spinosad @0.3ml/ or Spinetoram @1ml/l.

### Brinjal

- The incidence of brinjal shoot and fruit borer was noticed. Spraying of flubendamide @0.2 ml/l was recommended.

### Cabbage

- Diamond Back moth *Plutella xylostella* incidence was noticed. Spray IHR neem soap at 10g/l will help in minimizing or repelling the egg laying by adult moths. Incidence of cutworm *Spodoptera litura* was observed. Baits based on jaggery is necessary to attract and kill the larvae.

## Floriculture

### Rose

- Thrips infestation was observed, can be minimized by spraying Spinosad @0.25ml/l.

### Gerbera

- Under polyhouse conditions in gerbera crop thrips incidence is severe. Recommended to spray spinosad@0.25ml/l or Spinetoram @1ml/l.

### Tuberose

- Incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @2ml/l.

\*Safe waiting periods are to be followed as per the label claims

## Disease Scenario

Disease forecast based on weather parameters during the second fortnight of August, 2018.

## Fruit crops

### Grape

- Protection against the infection of downy mildew by the application of 0.8 g Dimethomorph + 2.00 g Micozeb /L or Metalaxyl + Mancozeb (0.2%)/ Al Fosetyl (0.2%). Rust needs to be taken care in grape vine orchards (var Bangalore Blue). It could be managed by the treatment with Chlorothalonil (0.2%) or Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly. In white varieties preventive sprays for anthracnose management with difenconazole 0.05% or thiophanate methyl 0.1%.

### Banana

- Intensity of Sigatoka leaf spot (*Mycosphaerella* sp) may be moderate. For controlling Sigatoka application of Tridemorph (0.1%)/ or Chlorothalonil (0.2%) is recommended. Moderate infection of Leaf (*Diehthonella* spp.), and fruit spots (*Macrophoma* spp.) may be noticed that could be effectively managed by the pre-harvest sprays with Zineb + Hexaconazole (0.2%) or Thiophanate methyl (0.1%).

### Pomegranate

- On fresh foliage and emerging flower buds infection of *anthracnose* might be noticed whereas Leaf and fruit spot disease caused by *Puedocercospora punicae* may become serious These could be managed by spraying Chlorothalonil (0.2%)/Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l.

- For bacterial blight spray of Bordeaux mixture 1% along with bronopol or streptocycline at 0.5% at 15days interval will reduce the spread of the disease.

### Vegetable Crops

- Because of intermittent rains spread of *Phytophthora* blight is expected in tomato, chilli and other crops. For initial stages preventive spray with chlorothalonil (0.2%) and Bordeaux mixture (1%) will help. In severe conditions where spread is faster spraying with cymoxanil + mancozeb (0.1%). In solanaceous (tomato, capsicum, chilli) and cucurbitaceous vegetables (pumpkin, cucumber, ridge gourd etc.) Powdery mildew may appear with cool and dry weather. Hexaconazole at 0.2% spray with 0.5ml sticker/l will reduce the spread and severity. For *Alternaria* leaf spot chlorothalonil or dithane M 45 at 0.2% spray as preventive measure will reduce the disease incidence.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> September, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| September 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 29.4             | 19.1         | 80.6                  | 56.0              | 4.76             | 1.19              | 31.9                |
|  | (28.3)           | (20.4)       | (77.1)                | (54.6)            | (3.3)            | (4.1)             | (131.7)             |

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

### Fortnight from 1<sup>st</sup> to 15<sup>th</sup> September, 2018

During the first fortnight of the month i.e., from September 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum was higher by 1.4<sup>o</sup>C and minimum temperatures was lower by 0.7<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature was lower by 0.1<sup>o</sup>C and minimum temperature was higher by 0.4<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 4.8% and 9.3% respectively, as compared to the previous fortnight. There was 31.9 mm rainfall during the fortnight.

### Crop weather situation

During the first fortnight of the month i.e., from September 1<sup>st</sup> to 15<sup>th</sup>, 2018 also there was deficit rainfall compared to average rainfall received during last 5 years. Supplemental irrigation may be given to all the standing crops which are suffering from water shortage. Top dressing of Nitrogen and potassium to banana may be done to kharif planted banana plantations. Inter-culture operations may be completed if soil moisture status is suitable. The climate during the fortnight was highly congenial for the cultivation of oyster mushroom.

### Incidence of pests and diseases

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

### **Fruit Crops**

#### **Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos or profenophos @ 1.5 ml/l was recommended.

#### **Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

## Vegetable Crops

### Tomato

- Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l.

### Brinjal

- The incidence of brinjal shoot and fruit borer was noticed. Spraying of flubendiamide @ 0.2 ml/l was recommended.

### Chilli

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

## Floriculture

### Rose

- Thrips infestation was observed under polyhouse, can be minimized by spraying Spinosad @ 0.25ml/l.

### Gerbera

- Under polyhouse conditions thrips incidence is more. Spray spinosad @ 0.25 ml/l.

### Tuberose

- Incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @ 2 ml/l.

\*Safe waiting periods are to be followed as per the label claims

## Disease Scenario

Disease forecast based on weather parameters during the first fortnight of September, 2018.

## Fruit Crops

### Grape

- After forward pruning buds on the grapevines should be protected against the infection of downy mildew by the application of 0.8 g Dimethomorph + 2.00 g Macozeb /L or Metalxyl + Mancozeb (0.2%)/ Al Fosetyl (0.2%). Rust needs to be taken care in grape vine orchards (var Bangalore Blue). It could be managed by the treatment with Chlorothalonil (0.2%) or Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l. Lower surface of the leaves on the vines to be sprayed properly.

### Mango

- Intensity of Leaf spot (*P. mangiferae* / *C. gloeosporioides*) may increase. Application of Zineb (0.2%) / Chlorothalonil (0.2%) or Mancozeb (0.2%) or Carbendazim + Iprodion (0.2%) along with the sticker @ 0.5ml/L advisable. Infection of Sooty mould should also be taken care for which application of Copper oxychloride (0.3%) along with sticker (@ 0.5 ml / L) is recommended.

### Papaya

- Black leaf and fruit spots (*Asperisporium caricae*) are attaining serious proportions. Application of Thiophanate methyl (0.1%) or Antracol (0.2%) or Carbendazim + Iprodion (0.2%) along with sticker @ 0.5 ml/L are recommended. Lower surface of the leaves to be sprayed properly.

### Banana

- Intensity of Sigatoka leaf spot (*Mycosphaerella* sp) may be moderate. For controlling Sigatoka application of Tridemorph (0.1%)/ or Chlorothalonil (0.2%) is recommended. Moderate infection of Leaf (*Diehthonella* spp.), and fruit spots (*Macrophomaspp.*) may be noticed that

could be effectively managed by the pre-harvest sprays with Zineb + Hexaconazole (0.2%) or Thiophanate methyl (0.1%).

### Pomegranate

- On fresh foliage and emerging flower bud's infection of anthracnose might be noticed whereas Leaf and fruit spot disease caused by *Puedocercospora punicae* may become serious These could be managed by spraying Chlorothalonil (0.2%)/Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l.

### Vegetable Crops

**In solanaceous (tomato, capsicum, chilli) and cucurbitaceous vegetables (pumpkin, cucumber, ridge gourd etc.)**

- Powdery mildew may appear with cool and dry weather. Hexaconazole at 0.2% spray with 0.5ml sticker/l will reduce the spread and severity. For Alternaria leaf spot chlorothalanil or dithane M 45 at 0.2% spray as preventive measure will reduce the disease incidence.
- In places where tomato has been planted late, with incessant rains late blight due to Phytophthora will appear. To prevent spray of copper oxy chloride at 0.2% or Bordeaux mixture 1% is recommended.

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

**Period: 16<sup>th</sup> to 30<sup>th</sup> September, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| September 16 <sup>th</sup> to 30 <sup>th</sup> , 2018 | 29.6             | 19.6         | 85.5                  | 60.3              | 4.05             | 1.33              | 85                  |
|   | (28.7)           | (20.5)       | (79.7)                | (53.7)            | (3.1)            | (3.9)             | (97.3)              |

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

### Fortnight from 16<sup>th</sup> to 30<sup>th</sup> September, 2018

During the second fortnight of the month i.e., from September 16<sup>th</sup> to 30<sup>th</sup>, 2018, the average maximum and minimum temperatures were higher by 0.2<sup>o</sup>C and 0.5<sup>o</sup>C respectively, as compared to the previous fortnight. Both average maximum and minimum temperatures were higher by 0.4<sup>o</sup>C and 0.1<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 4.9% and 4.3% respectively, as compared to the previous fortnight. There was 85.0mm rainfall during the fortnight.

### Crop weather situation

During the last fortnight rainfall was less and temperatures increased slightly. The soil physical conditions will be optimum with sufficient moisture for field preparation for rabi crops. For

standing vegetable crops vegetable special may be sprayed to improve their growth and fruit yield. For standing banana crops which were planted during June, second installment of N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O @ 50:30:60 g per plant may be applied. The climate during the second fortnight of Sept. was highly congenial for the cultivation of oyster mushroom.

### **Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

#### **Fruit Crops**

##### **Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos or profenophos @ 1.5 ml/l was recommended.

##### **Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l was recommended.

#### **Vegetable Crops**

##### **Tomato**

- Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l.

##### **Brinjal**

- The incidence of brinjal shoot and fruit borer was noticed. Spraying of rynaxypyr @0.3 ml/l /flubendiamide@0.2 ml/l was recommended.

##### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

##### **Drumstick**

- Tea mosquito bug incidence was noticed. Spraying of profenophos @1.5 ml/l Lambda Cyhalothrin @0.6 ml/l was recommended.

#### **Floriculture**

##### **Rose**

- Thrips infestation was observed under polyhouse, can be minimized by spraying Spinosad @0.25ml/l.

##### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

##### **Tuberose**

- Incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyriphos @2ml/l.

\*Safe waiting periods are to be followed as per the label claims

### **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of September, 2018.

#### **Fruit crops**

##### **Grape**

- 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 Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/l.

### **Mango**

- *Sooty mould* should be 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%).
- *Anthracnose* spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

### **Banana**

- Intensity of Sigatoka leaf spot (*Mycosphaerella* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits may be increased compared to last fortnight. Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%)/ whereas crown rot and anthracnose could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post-harvest dip in Chlorine water (300 ppm) for 10 minutes.
- *Macrophoma* spots may appear on the fruits of Robusta varieties of banana. Application of Carbendazim (0.1%) or Thiophanate methyl (0.1%) is recommended for managing the same.

### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may remain moderate. Application of Chlorothalonil (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control. This will avoid spread of scab disease also. Regular spray of copper oxychloride (0.2%) or Bordeaux mixture (1%) along with streptomycin 0.5g/l is to be continued to avoid spread of nodal blight.

### **Vegetable Crops**

#### **Leaf blight of tomato and potato by *Phytophthora infestans***

- Since the rain fall was heavy in the last fortnight, there is higher spread of late blight. If blight has not started, preventive spray of chlorothalonil or copper oxy chloride at 0.2% is recommended. In case of severe infection, spray of fenamidone + dithane M 45 (Sectin) at 0.1% is recommended.

#### **Powdery mildew in solanaceous vegetable crops**

- Spray of wettable sulphur or dithane M 45 after the appearance of the powdery mildew symptoms. In case of severe infection hexaconazole at 0.1% is recommended.

#### **Ornamental crops**

- Incidence of rose powdery mildew is expected to increase. In case of severe infection hexaconazole 0.1% or azoxystrobin 0.1% will reduce the disease spread.



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

**Period: 1<sup>st</sup> to 15<sup>th</sup> October, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| October 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 29.8             | 19.0         | 86.7                  | 55.9              | 4.2              | 1.7               | 47.4                |
|  | (29.4)           | (20.7)       | (78.1)                | (54.1)            | (3.6)            | (3.0)             | (119.3)             |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> October, 2018**

During the first fortnight of the month i.e., from October 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum was higher by 0.2°C and minimum temperatures was lower by 0.6°C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were higher by 0.7°C and 0.2°C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was higher by 1.2%, whereas during afternoon it was lower by 4.4% respectively, as compared to the previous fortnight. There was 47.4 mm rainfall during the fortnight.

**Crop weather situation**

During the first fortnight of the month i.e., from October 1<sup>st</sup> to 15<sup>th</sup>, 2018 there was deficit rainfall, hence one or two irrigations may be given so that growth may not be affected in crops like banana. Field preparation, fertilizer application and sowing of rabi vegetables may be taken up. Inter culture operations in standing crops may also be taken up.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos 2 ml/l is recommended

**Custard apple**

- Tea mosquito bug and mealybug incidence was noticed. Spraying of Lambda Cyhalothrin @0.6 ml/l is recommended.

**Vegetable Crops**

**Drumstick**

- Tea mosquito bug incidence was noticed. Spraying of Lambda Cyhalothrin @ 0.6 ml/l is recommended.

### **Brinjal**

- The incidence of brinjal shoot and fruit borer can be expected. Spraying of rynaxypyr @0.3 ml/l or flubendiamide @0.2 ml/l is recommended.

### **Tomato**

- Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l

### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

### **Floriculture**

#### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

#### **Tuberose**

- Incidence of root mealybugs, *Dysmicoccus* sp. was observed. Recommended to drench with chlorpyrifos @ 2ml/l.

\*Safe waiting periods are to be followed as per the label claims

### **Disease Scenario**

Disease forecast based on weather parameters during the first fortnight of October, 2018.

### **Fruit Crops**

#### **Grape**

- 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 Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l.

#### **Mango**

- Sooty mould should be 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%).
- Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

#### **Banana**

- Intensity of Sigatoka leaf spot (*Mycosphaerella* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits may be increased compared to last fortnight. Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%)/ whereas crown rot and anthracnose could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post-harvest dip in Chlorine water (300 ppm) for 10 minutes.

#### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C.gloeosporioides*) may remain moderate. Application of Chlorothalonil (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control. This will avoid spread of scab disease also. Regular spray of copper oxychloride (0.2%) or Bordeaux mixture (1%) along with streptomycin 0.5g/l is to be continued to avoid spread of nodal blight.

## Vegetable Crops

### Leaf blight of tomato and potato by *Phytophthora infestans*

- Spread of late blight is expected to continue. If blight has not started, preventive spray of chlorothalonil or copper oxy chloride at 0.2% is recommended. In case of severe infection, spray of fenamidone + dithane M 45 (Sectin) at 0.1% is recommended.

### Powdery mildew in solanaceous vegetable crops

- Spray of wettable Sulphur or dithane M 45 after the appearance of the powdery mildew symptoms. In case of severe infection hexaconazole at 0.1% is recommended.

### Ornamental crops

- Incidence of rose powdery mildew is expected to increase. In case of severe infection hexaconazole 0.1% or azoxystrobin 0.1% will reduce the disease spread.

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

**Period: 16<sup>th</sup> to 31<sup>st</sup> October, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| October 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 29.4             | 14.6         | 69.1                  | 44.9              | 4.3              | 1.54              | 6.0                 |
|   | (28.7)           | (19.9)       | (73.3)                | (48.7)            | (4.0)            | (2.8)             | (56.8)              |

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

### Fortnight from 16<sup>th</sup> to 31<sup>st</sup> October, 2018

During the second fortnight of the month i.e., from October 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum and minimum temperatures were lower by 0.4<sup>o</sup>C and 4.4<sup>o</sup>C respectively, as compared to the previous fortnight. Both average maximum and minimum temperatures were by 0.7<sup>o</sup>C and 0.8<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 17.6% and 11.0% respectively, as compared to the previous fortnight. There was 6.0mm rainfall during the fortnight.

### Crop weather situation

As there was no or little rainfall during this period, required irrigation may be given to the standing fruit crops, vegetable and flower crops. Field preparation and other agronomic measures

may be taken up for late Rabi crops. Top dressing of required nutrients may be given to the standing early Rabi vegetables.

### **Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

#### **Fruit Crops**

##### **Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos 2 ml/l is recommended.

#### **Vegetable Crops**

##### **Brinjal**

- The incidence of brinjal shoot and fruit borer can be expected. Spraying of rynaxypyr @0.3 ml/l or flubendiamide @0.2 ml/l is recommended.

### **Tomato**

- Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l. Incidence of *Tuta absoluta* is expected under polyhouse conditions. Spray spinosad 45 SC @ 0.25 ml/l.

### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

### **Floriculture**

#### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

#### **Rose**

- Thrips incidence is noticed on rose under polyhouse condition. Spray Fipronil 5 SC @ 1.5 ml/l. If the problem persists after one week also, spray spinosad 45 SC @ 0.25 ml/l.

\*Safe waiting periods are to be followed as per the label claims

### **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of October, 2018. As there has been a dry spell and there are chances for viral diseases transmitted by sucking pests like thrips and aphids. Care should be taken to prevent their population by applying the neem based formulations as per the requirement and crop stage in all crops where vector borne viral disease are expected.

### **Fruit crops**

#### **Grape**

- 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 Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/l.

#### **Mango**

- Sooty mould should be 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%).
- Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

#### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may remain moderate. Application of Chlorothalonil (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control. This will avoid spread of scab disease also. Regular spray of copper oxychloride (0.2%) or Bordeaux mixture (1%) along with streptomycin 0.5g/l is to be continued to avoid spread of nodal blight.

## ➤ **Vegetable Crops**

### **Leaf blight of tomato and potato by *Phytophthora infestans***

- If blight has not started, preventive spray of chlorothalonil or copper oxy chloride at 0.2% is recommended. If there are drizzling due to the depression in east coast followed by rain fall the severity of leaf blight may increase. In case of severe infection, spray of fenamidone + dithane M 45 (Sectin) at 0.1% is recommended. The water logging has to be avoided to prevent humidity build up. Use of polythene mulch will reduce the secondary spread of the disease through rain splash.

### **Powdery mildew in solanaceous vegetable crops**

- As the minimum temperature has come down and there is cool and dry weather, the powdery mildew will increase. Spray of wettable sulphur or dithane M 45 after the appearance of the powdery mildew symptoms. In case of severe infection hexaconazole at 0.1% is recommended.

### **Ornamental crops**

- Incidence of rose powdery mildew is expected to increase. In case of severe infection hexaconazole 0.1% or azoxystrobin 0.1% will reduce the disease spread.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> November, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| November 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 29.9             | 13.7         | 79.7                  | 44.3              | 4.44             | 1.2               | 0.0                 |
|   | (27.4)           | (19.1)       | (76.7)                | ( 49.4)           | (3.3)            | (2.5)             | (35.3)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> November, 2018**

During the first fortnight of the month i.e., from November 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum was higher by 0.5<sup>o</sup>C and minimum temperature was lower by 0.9<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were lower by 1.3<sup>o</sup>C and 0.8<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning was higher by 10.6%, whereas during afternoon it was lower by 0.6% respectively, as compared to the previous fortnight. There was no rainfall during the fortnight.

**Crop weather situation**

During the first fortnight of the month i.e., from November 1<sup>st</sup> to 15<sup>th</sup>, 2018 there was no rainfall. Day temperatures were high and night temperatures were low. This has increased flowering in mango. But these weather conditions are not good for banana plantations which were planted during June–July. Supplemental irrigation may be given to banana crop. As evaporation rate is higher it is advisable to put mulching in the basins of the fruit orchards. The climate during the first fortnight of November was highly congenial for the cultivation of oyster mushroom.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos 2 ml/l is recommended.

**Guava**

- Tea mosquito bug is noticed in tender flushes. Spraying with lambda cyhalothrin (0.003% is recommended).

**Vegetable Crops**

### **Tomato**

- Leaf miner damage was noticed on the tender leaves. Spraying with the neem soap or pongamia soap (5gm/ltr) is recommended. Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l. Incidence of *Tuta absoluta* is expected under polyhouse conditions. Spray spinosad 45 SC @ 0.25 ml/l.

### **Brinjal**

- The incidence of brinjal shoot and fruit borer can be expected. Spraying of rynaxypyr@0.3 ml/l or flubendiamide@0.2 ml/l is recommended.

### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

### **Floriculture**

#### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

#### **Rose**

- Thrips incidence is noticed on rose under polyhouse condition. Spray Fipronil 5 SC @ 1.5 ml/l. If the problem persists after one week also, sprays pinosad 45 SC @ 0.25 ml/l.

\*Safe waiting periods are to be followed as per the label claims

### **Disease Scenario**

Disease forecast based on weather parameters during the first fortnight of November, 2018.

### **Fruit Crops**

#### **Mango**

- Powdery mildew requires attention. At this point of time application of wettablesuphur (0.2%) along with sticker @ 0.5 ml/L is recommended. Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

#### **Grape**

- Downy mildew and anthracnose need to be monitored. For the management of downy mildew application of Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%)/ Dimethomorph (0.8%) + Mancozeb (0.2%) and for anthracnose spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective.
- 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 Bitertanol (0.2%) or Dinocap (0.3%) + Mancozeb (2%) along with sticker @ 0.5 ml/ l.

#### **Banana**

- Sigatoka leaf spot (*Mycospheralla* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplo diatheobromae*) and anthracnose (*Colletotrichum musae*) of fruits require proper attention. Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%)/ whereas crown rot and anthracnose could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.
- *Macrophoma* spots may appear on the fruits of Robusta varieties of banana. Application of Carbendazim (0.1%) or Thiophanate methyl (0.1%) is recommended for managing the same.

### **Papaya**

- Infection of Black spot (*Asperisporium caricae*) is increasing. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Vegetable crops**

#### **Solanaceous and cucurbits vegetables**

- Powdery mildew requires attention. At this point of time application of wettable sulphur (0.2%) along with sticker @ 0.5 ml/L is recommended.
- Leafspots and Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

### **Ornamental crops**

#### **Chrysanthemum**

- This is the time for rust and spraying Chlorothalonil (2g/l) or myclobutanol (2g/l) as contact fungicide will reduce the incidence. In severe cases, propiconazole (1.5 ml/l) will help in preventing the further spread of the disease.

#### **Rose**

- Now the powdery mildew incidence will increase. Spray of azoxystrobin at 0.05% or trifloxystrobin + tebuconazole at 0.1% will reduce the powdery mildew spread.

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

**Period: 16<sup>th</sup> to 30<sup>th</sup> November, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| November 16 <sup>th</sup> to 30 <sup>th</sup> , 2018 | 28.4             | 16.7         | 86.6                  | 57.3              | 3.9              | 0.71              | 17.3                |
|  | (27.2)           | (18.1)       | (75.7)                | (46.8)            | (3.3)            | (2.6)             | (17.8)              |

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

**Fortnight from 16<sup>th</sup> to 30<sup>th</sup> November, 2018**

During the second fortnight of the month i.e., from November 16<sup>th</sup> to 30<sup>th</sup>, 2018, the average maximum was lower by 1.5<sup>o</sup>C and minimum temperature was higher by 3.0<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were lower by 0.2<sup>o</sup>C and 1.0<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were higher by 6.9% and 13.0%, as compared to the previous fortnight. There was 17.3mm rainfall during the fortnight.

**Crop weather situation**

During the second fortnight of the month i.e., from November 16<sup>th</sup> to 30<sup>th</sup> November, 2018 there was some rainfall during this period which had increased soil moisture and nitrogen uptake. To supply micronutrients foliar sprays like banana special to banana, vegetable special to vegetables may be done. As evaporation is higher during this period, farmers are advised to cover the soil surface with available mulch. Wherever FYM or compost is being applied this may be mixed with Arka Microbial Consortium. The climate during the second fortnight of November was highly congenial for the cultivation of oyster mushroom.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Mango**

- In early flowering varieties incidence of leaf hoppers is noticed. Spraying of imidachloprid 0.5 ml/l is recommended. Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos 2 ml/l is recommended

**Guava**

- Tea mosquito bug is noticed in tender flushes. Spraying with lambda cyhalothrin (0.003%)/ dimethomate (1.5 ml/l) is recommended.

## **Vegetable Crops**

### **Tomato**

- Leaf miner damage was noticed on the tender leaves. Spraying with the neem soap or pongamia soap (5gm/ltr) is recommended. Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l. Incidence of *Tuta absoluta* is expected under polyhouse conditions. Spray spinosad 45 SC @ 0.25 ml/l

### **Brinjal**

- The incidence of brinjal shoot and fruit borer can be expected. Spraying of rynaxypyr@0.3 ml/l or flubendiamide@0.2 ml/l is recommended.

### **Bitter gourd**

- Incidence of fruit flies is noticed and setting of traps @ 6/acre.

### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

## **Floriculture**

### **Rose**

- Thrips incidence is noticed on rose under polyhouse condition. Spray fipronil 5 SC @ 1.5 ml/l. If the problem persists after one week also, spray pinosad 45 SC @ 0.25 ml/l.

### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

\*Safe waiting periods are to be followed as per the label claims.

## **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of November, 2018.

## **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. Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

### **Papaya**

- Infection of Black spot (*Asperisporium caricae*) is increasing. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Grape**

- Downy mildew and anthracnose needs to be monitored. For the management of downy mildew application of Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%)/ Dimethomorph (0.8%) + Mancozeb (0.2%) and for anthracnose spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective.

### **Banana**

- Sigatoka leaf spot (*Mycosphaerella* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplodiatheobromae*) and anthracnose (*Colletotrichum musae*) of fruits require proper attention. Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl

(0.1%) or Tridemorph (0.1%)/ whereas crown rot and anthracnose could be controlled by the pre-harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.

## **Vegetable crops**

### **Solanaceous and cucurbits vegetables**

- Powdery mildew requires attention. At this point of time application of wettable sulphur (0.2%) along with sticker @ 0.5 ml/L is recommended. Later, if incidence is in serious proportion spraying of hexaconazole at 0.1% will reduce the spread.
- Leafspots and Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

## **Floriculture**

### **Chrysanthemum**

- This is the time for rust and spraying Chlorothalonil (2g/l) or mycoblutanol (2g/l) as contact fungicide will reduce the incidence. In severe cases propiconazole (1.5 ml/l) will help in preventing the further spread of the disease.

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

**Period: 1<sup>st</sup> to 15<sup>th</sup> December, 2018**

**Latitude: 13<sup>0</sup>7<sup>1</sup> N**

**Longitude: 77<sup>0</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight   | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|---|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|   | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| December 1 <sup>st</sup> to 15 <sup>th</sup> , 2018 | 29.0             | 16.2         | 84.3                  | 50.0              | 3.75             | 0.41              | 2.5                 |
|   | (26.7)           | (17.9)       | (78.2)                | ( 51.4)           | (3.1)            | (2.9)             | (13.5)              |

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

**Fortnight from 1<sup>st</sup> to 15<sup>th</sup> December, 2018**

During the first fortnight of the month i.e., from December 1<sup>st</sup> to 15<sup>th</sup>, 2018, the average maximum was higher by 0.6<sup>0</sup>C and minimum temperature was lower by 0.5<sup>0</sup>C respectively, as compared to the previous fortnight. The average maximum and minimum temperatures were lower by 0.5<sup>0</sup>C and 0.2<sup>0</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 2.3% and 7.3% respectively, as compared to the previous fortnight. There was 2.5mm rainfall during the fortnight.

**Crop weather situation**

The mean temperature during the first fortnight of December, 2018 was higher when compared to the average of last five years. The rainfall received during this period was less compared to the average of the last five years. Protective irrigation needs to be provided. Liberal application of FYM is recommended especially for the perennial horticulture crops to conserve moisture and for meeting nitrogen and other nutrient requirement.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Mango**

- In early flowering varieties incidence of leaf hoppers is noticed. Spraying of imidachloprid 0.5 ml/l is recommended. Leaf webber problem is noticed. Removal of the effected shoots and spraying of quinalophos 2 ml/l is recommended.

**Custard Apple**

- In new flushes from pruned trees incidence of tea mosquito bug is noticed. Spraying of imidachloprid 0.5 ml/l or lambda cyhalothrin (0.003%)/ is recommended.

**Guava**

- Tea mosquito bug is noticed in tender flushes. Spraying with lambda cyhalothrin (0.003%)/ dimethomate (1.5 ml/l) is recommended.

## **Vegetable Crops**

### **Tomato**

- Leaf miner damage was noticed on the tender leaves. Spraying with the neem soap or pongamia soap (5gm/ltr) is recommended. Mite incidence was observed under polyhouse conditions. Spray fenazaquin @ 1.5 ml/l. Incidence of *Tuta absoluta* is expected under polyhouse conditions. Spray spinosad 45 SC @ 0.25 ml/l.

### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

### **Cabbage**

- Incidence of cut worm is noticed and baiting (jaggary + *indoxacarb*) is recommended.

### **Brinjal**

- The incidence of brinjal shoot and fruit borer can be expected. Spraying of rynaxypyr@0.3 ml/l or flubendiamide@0.2 ml/l is recommended.

## **Floriculture**

### **Rose**

- Thrips incidence is noticed on rose under polyhouse condition. Spray fipronil 5 SC @ 1.5 ml/l. If the problem persists after one week also, sprays pinosad 45 SC @ 0.25 ml/l.

### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

\*Safe waiting periods are to be followed as per the label claims

## **Disease Scenario**

Disease forecast based on weather parameters during the first fortnight of December, 2018.

## **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. Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

### **Grape**

- Downy mildew and anthracnose are important diseases in this period. For the management of downy mildew application of Metalaxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%)/ Dimethomorph (0.8%) + Mancozeb (0.2%) and for anthracnose spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective.

### **Banana**

- Sigatoka leaf spot (*Mycosphaerella* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits require proper attention. Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%)/ whereas crown rot and anthracnose could be controlled by the pre-

harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.

### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may remain moderate. Application of Chlorothalonil (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.

### **Papaya**

- Infection of Black spot (*Asperisporium caricae*) is increasing. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Vegetable crops**

#### **Solanaceous vegetables**

- Powdery mildew requires attention. At this point of time application of wettable sulphur (0.2%) along with sticker @ 0.5 ml/L is recommended. Leafspots and Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

#### **Cucurbits vegetables**

- Powdery mildew may become problem. Application of chlorothalonil (0.2%) as preventive spray and tebuconazole (0.1%) at severe stages may help. For the downy mildews spray of ridomil 0.1% will help.

### **Ornamental crops**

#### **Chrysanthemum**

- This is the time for rust and spraying chlorothalonil at 2g/l will prevent the disease incidence. While propiconazole at 0.1% will help as curative measure.

#### **Rose**

- Powdery mildew of rose in polyhouse as well as field grown crops will increase. Tebuconazole or hexaconazole (@ 0.1%) or azoxystrobin @ 0.05% would reduce the disease severity.

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

**Period: 16<sup>th</sup> to 31<sup>st</sup> December, 2018**

**Latitude: 13<sup>o</sup>7<sup>1</sup> N**

**Longitude: 77<sup>o</sup> 29<sup>1</sup>E**

**Altitude: 890 M**

| Fortnight  | Temperature (°C) |              | Relative Humidity (%) |                   | Evaporation (mm) | Wind speed (km/h) | Total Rainfall (mm) |
|--|------------------|--------------|-----------------------|-------------------|------------------|-------------------|---------------------|
|  | Average Max.     | Average Min. | Average at 7.30AM     | Average at 1.30PM |                  |                   |                     |
| December 16 <sup>th</sup> to 31 <sup>st</sup> , 2018 | 28.5             | 14.2         | 81.7                  | 48.4              | 3.9              | 2.4               | 0.00                |
|  | (28.0)           | (16.5)       | (74.6)                | (45.3)            | (3.8)            | (3.3)             | (0.0)               |

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

**Fortnight from 16<sup>th</sup> to 31<sup>st</sup> December, 2018**

During the second fortnight of the month i.e., from December 16<sup>th</sup> to 31<sup>st</sup>, 2018, the average maximum and minimum temperatures were lower by 0.5<sup>o</sup>C and 2.0<sup>o</sup>C respectively, as compared to the previous fortnight. The average maximum temperature was higher by 1.3<sup>o</sup>C and minimum temperature was lower by 1.4<sup>o</sup>C, respectively, as compared to the average values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon were lower by 2.6% and 1.6%, as compared to the previous fortnight. There was no rainfall during the fortnight.

**Crop weather situation**

During the second fortnight of the month i.e., from December 16<sup>th</sup> to 31<sup>st</sup>, 2018 rainfall was nearly same as the average value of previous 5 years, though temperatures are marginally lesser than the previous 5 year's average. Supplemental irrigation may be given to crop like banana. Under sufficient soil moisture available in field, additional fertilizer may be taken up if required. All other routine cultural practices may be followed. The climate during the second fortnight of December was highly suitable for the cultivation of Oyster Mushroom (*Pleurotus* spp.), King oyster mushroom and Shiitake mushroom. The quality of oyster mushrooms during this period was of very good quality having compact bunches, dark sporophores, short and thick stipe and pileus with better shelf life. Milky mushroom in this climate was slow to grow and took very long (more than 20 days) for sporophore induction.

**Incidence of pests and diseases**

Under the prevailing weather conditions, the following pests are expected in Bangalore on various horticultural crops. Pest incidence was noticed during the first fortnight of May and their management options are mentioned below.

**Fruit Crops**

**Mango**

- Leaf webber problem is noticed. Removal of the effected shoots and spraying of lambda cyhalothrin 0.6 ml/l is recommended. Incidence of leaf hoppers is noticed in mango inflorescence. Spraying of imidachloprid 0.5 ml/l is recommended.

### **Custard Apple**

- In new flushes from pruned trees incidence of tea mosquito bug is noticed. Spraying of imidachloprid 0.5 ml/l or lambda cyhalothrin (0.003%)/ is recommended.

### **Cabbage**

- Incidence of diamond back moth is noticed. Spraying with the diafenthuran 0.5gm/l) is recommended.

### **Tomato**

- Incidence of *Tuta absoluta* is noticed under polyhouse conditions. Spray spinosad 45 SC @ 0.25 ml/l

### **Brinjal**

- The incidence of brinjal shoot and fruit borer can be expected. Spraying of rynaxypyr@0.3 ml/l or flubendiamide@0.2 ml/l is recommended.

### **Bitter gourd**

- Incidence of aphides is noticed and spraying of thiamethoxam 0.3gm/l is recommended.

### **Chilli**

- Thrips damage was noticed in the field. Spray imidacloprid @ 0.5 ml/l.

### **Gerbera**

- Under polyhouse conditions thrips incidence is more. Spray spinosad@0.25ml/l.

### **Rose**

- Thrips incidence is noticed on rose under polyhouse condition. Spray Fipronil 5 SC @ 1.5 ml/l. If the problem persists after one week also, sprays pinosad 45 SC @ 0.25 ml/l.

\*Safe waiting periods are to be followed as per the label claims.

## **Disease Scenario**

Disease forecast based on weather parameters during the second fortnight of December, 2018.

### **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. Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) or Thiophanate methyl (0.2%) or Carbendazim (0.1%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

#### **Grape**

- Downy mildew and anthracnose are important diseases in this period. For the management of downy mildew application of Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%)/ Dimethomorph (0.8%) + Mancozeb (0.2%) and for anthracnose spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective.

#### **Banana**

- Sigatoka leaf spot (*Mycosphaerella* sp.), crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits require proper attention. Sigatoka could be managed by spraying Carbendazim (0.1%) or Thiophanate methyl (0.1%) or Tridemorph (0.1%)/ whereas crown rot and anthracnose could be controlled by the pre-

harvest sprays involving Carbendazim (0.1%) or Thiophanate methyl (0.1%), besides post harvest dip in Chlorine water (300 ppm) for 10 minutes.

### **Pomegranate**

- Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may remain moderate. Application of Chlorothalonil (0.2%) /Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l is effective for the disease control.

### **Papaya**

- Infection of Black spot (*Asperisporium caricae*) is increasing. Application of Chlorothalonil (0.2%) Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with the sticker @ 0.5ml/l with good coverage of the lower surface of the foliage is recommended.

### **Vegetable crops**

#### **Solanaceous vegetables**

- Powdery mildew requires attention. At this point of time application of wettable sulphur (0.2%) along with sticker @ 0.5 ml/L is recommended. Leafspots and Anthracnose spots may increase on foliage. Application of Chlorothalonil (0.2%) along with sticker (@ 0.5 ml / L) is recommended for the disease management.

#### **Cucurbits vegetables**

- Powdery mildew may become problem. Application of chlorothalonil (0.2%) as preventive spray and tebuconazole (0.1%) at severe stages may help. For the downy mildews spray of ridomil 0.1% will help.

### **Ornamental crops**

#### **Chrysanthemum**

- This is the time for rust and spraying chlorothalonil at 2g/l will prevent the disease incidence. While propiconazole at 0.1% will help as curative measure.

#### **Rose**

- Powdery mildew of rose in polyhouse as well as field grown crops will increase. Tebuconazole or hexaconazole (at 0.1%) or azoxystrobin at 0.05% would reduce the disease severity.