

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

Period: 16th to 31st December, 2009

Latitude : 13°58' N

Longitude : 78° 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 1.30 PM			
16 th – 31 st December, 2009	26.9	17.7	73.7	53.5	2.6	6.07	9.0
	(26.6)	(13.5)	(70.5)	(56.0)	(3.7)	(4.53)	(--)

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

Fortnight from 16th to 31st December 2009

During the second fortnight i.e., from December 16th to 31st 2009, the average maximum temperature was lower by 0.43°C and minimum temperature was higher by 1.97°C, as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 0.3°C and 4.2°C respectively, as compared to the values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 7.7% and 4.24% respectively, as compared to the previous fortnight. Rainfall of 9 mm is recorded during the fortnight.

Crop weather situation

- ❖ As wind speed was more than the average of the previous five years the evaporation rates might be higher. Hence light irrigation and mulching with available residues will help reducing evaporation losses. Top dressing to rabi vegetables may be given.
- ❖ In rose, incidence of caterpillar under open field and incidence of mites, thrips, powdery mildew under polyhouse conditions were observed.
- ❖ Incidence of corm rot and thrips was observed in gladiolus.
- ❖ In jasmine, incidence of leaf eating caterpillar was observed.
- ❖ In *Garcinia indica*, borer attack with shoot drying was observed.
- ❖ Incidence of powdery mildew, bud borer and thrips were observed in Gerbera under open field conditions.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In grapes, downy mildew and anthracnose infection may increase on the vines which were pruned late. For downy mildew, application of Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (0.2%)/ and for anthracnose spraying with Propineb (0.2%)/ Chlorothalonil (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%) are effective. Rust may be to infecting grape vine orchards (var Bangalore Blue) nearing maturity 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.
- ❖ Intensity of Macrophoma spots might increase on the fruits of banana var. Grand Naine. Application of Carbendazim (0.1%) or Thiophanate methyl (0.1%) is recommended for managing the same. Intensity of Sigatoka leaf spot (*Mycosphaerella* sp.) crown rot (*Fusarium moniliformae* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits may further increase 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.
- ❖ In mango, anthracnose spots might further 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. 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%).
- ❖ Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may remain moderate in pomegranate. Application of Chlorothalonil (0.2%) /Anracol (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.

Insect pests

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

- ❖ If the incidence of plant hoppers is more on mango, spray imidacloprid @ 0.3 ml/l.
- ❖ For the management of thrips on pomegranate, rose, gerbera and chilli, spray acephate 1g/l or imidacloprid @ 0.5 ml/l.
- ❖ For managing semilooper and other caterpillar pests on various vegetable and ornamental crops, spray quinalphos @ 2ml/l or carbaryl @ 2.5 g/l or indoxcarb @ 1 ml/l.
- ❖ Thrips incidence is more on chilli and capsicum. Spray imidacloprid @ 0.5 ml/l.
- ❖ On Bitter gourd, incidence of fruit fly is more. For its management take up bait spray containing 10 g of jaggery and 1 ml of deltamethrin per litre.
- ❖ Aphid infestation may increase on crops like rose and okra. If the okra crop is at pre-flowering stage, spray Dimethoate @ 2 ml/l. Otherwise, thoroughly spray the crop with neem or pongamia soap (1%) or pulverized neem seed powder extract (NSPE) 4 %.

Remedial measures

Sprays with recommended pesticides / botanicals for control of above pests and diseases.

**CROP WEATHER SITUATION
METEOROLOGICAL DATA OF
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HESSARAGHATTA, BANGALORE – 560 089**

Period: 1st to 15th December, 2009

Latitude : 13^o58¹ N

Longitude : 78^o E

Altitude : 890 M

Fortnight	Temperature(OC)		Relative Humidity(%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm)
	Average Max.	Average Min.	Average At 7.30AM	Average at 1.30 PM			
December 1st to 15th, 2009	27.33	15.73	66.00	49.26	3.02	4.67	-
	(26.75)	(14.28)	(72.90)	(60.40)	(3.36)	(4.32)	(-)

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

Fortnight from 1st to 15th December, 2009

During the first fortnight of the month i.e., from December 1st to 15th, 2009, the average maximum and minimum temperatures were lower by 0.07^oC and 2.07^oC respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 0.58^oC and 1.45^oC respectively, as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were lower by 11.5% and 11.44% respectively, as compared to the previous fortnight. There was no rainfall recorded during the fortnight.

Crop weather situation

- ❖ There is no major change in weather of this fortnight to 5 year average. Due to low temperatures growth rate is low and availability and uptake of nutrients also low. Foliar spray suggested for Rabi tomato, hybrids.
- ❖ Leaf eating caterpillars were observed on jasmine with normal growth.
- ❖ In gerbera, powdery mildew, bud borer, thrips were observed under open field conditions.
- ❖ Normal growth and flowering with incidence of corm rot and thrips were observed in gladiolus.
- ❖ Good growth, flowering and pod setting are observed in majority of the lines of Mucuna sp.
- ❖ Good growth with wilt incidence was observed in Coleus forskohlii.
- ❖ Borer attack with shoot drying observed in Garcinia Indica.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In grapes, downy mildew and anthracnose infection may increase. For downy mildew, application of Metalaxyl + Mancozeb (0.2%) / Al Fosetyl (0.2%) / and for anthracnose spraying with Propineb (0.2%) / Chlorothalonil (0.2%) / Carbendazim (0.1%) / Thiophanate methyl (0.1%) are effective. Rust is expected to be infecting 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.
- ❖ In banana, intensity of Sigatoka leaf spot (*Mycosphaerella* sp.) crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits may further increase 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. Intensity of Macrophoma spots might increase on the fruits of banana var. Grand Naine. Application of Carbendazim (0.1%) or Thiophanate methyl (0.1%) is recommended for managing the same.
- ❖ In mango, 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. 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%).
- ❖ Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may remain moderate in pomegranate. 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.

Insect pests

- ❖ The prevailing conditions may encourage the incidence of hoppers on mango. For the management of hoppers on mango, spray imidacloprid @ 0.25 ml/l.
- ❖ On tomato, incidence of fruit borer may increase. For its management use *Ha* NPV @ 250 LE/ha. If the incidence is very severe one spray of indoxacarb @ 0.5 ml/l may be taken up.
- ❖ For the management brinjal shoot and fruit borer spray carbosulfan @ 2ml/l or rynaxpyr @ 0.3 ml/l, alternated with Bt-2ml/L. For leaf feeding beetles, apply neem cake in the soil and spray carbaryl 3g/L wherever infestation is severe.
- ❖ On rose, incidence of aphids will increase. If the incidence is severe, spray dimethoate @ 2ml/l or acephate @ 1.5 g/l.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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Period: 16th to 30th November, 2009

Latitude : 13^o58¹ N

Longitude : 78^o 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 1.30 PM			
16 th - 30 th November, 2009	27.4	17.8	77.5	60.7	2.9	3.84	34.8
	(26.5)	(15.9)	(73.9)	(63.1)	(3.2)	(4.47)	(-)

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

Fortnight from 16th to 30th November 2009

The average maximum and minimum temperatures during the second fortnight from November 16th to 30th 2009, were lower by 0.13^oC and 0.66^oC respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 0.9^oC and 1.9^oC respectively, as compared to the values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 7.37% and 7.5% respectively, as compared to the previous fortnight. Rainfall of 34.8 mm is recorded during the fortnight.

Crop weather situation

- ❖ The rainfall received during the period is disadvantageous for mango planted in heavy soil since it will promote vegetative growth. However, it will be helpful to banana and rabi vegetables. Loss of N by leaching due to rains may have to be compensated.
- ❖ Red spider mite incidence was observed under poly house grown rose.
- ❖ Leaf eating caterpillars was observed on jasmine and red ginger under open field conditions.
- ❖ Good growth, flowering and pod setting was observed in majority of the lines of Mucuna Sp.
- ❖ In Coleus forskohlii wilt incidence was observed.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In grapes, downy mildew and anthracnose may infect grape vines var. Anab - e- Shahi. For downy mildew application of Metalyxl + Mancozeb (0.2%)/ Al Fosetyl (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.
- ❖ Intensity of Sigatoka leaf spot (*Mycosphaerella* sp.) crown rot (*Fusarium moniliforme* & *Botryodiplodia*

theobromae) and anthracnose (*Colletotrichum musae*) of fruits may increase in banana 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.

- ❖ In mango, sooty mould should be further 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 (imidocloprid @ 0.05%). 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.
- ❖ Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may be remain moderate in pomegranate. 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.

Insect pests

- ❖ The prevailing conditions will encourage the incidence of hoppers on mango. For the management of hoppers on mango, spray imidacloprid @ 0.25 ml/l.
- ❖ On rose, incidence of aphids will increase. If the incidence is severe, spray dimethoate @ 2ml/l or acephate @1.5 g/l.
- ❖ For the management brinjal shoot and fruit borer spray carbosulfan @ 2ml/l or rynaxpyr @ 0.3 ml/l, alternated with Bt-2ml/L. For leaf feeding beetles, apply neem cake in the soil and spray carbaryl 3g/L wherever infestation is severe.

Remedial measures

Sprays with recommended pesticides / botanicals for control of above pests and diseases.

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Latitude : 13^o58¹ N

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Fortnight	Temperature(°C)		Relative Humidity(%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm)
	Average Max.	Average Min.	Average At 7.30AM	Average at 1.30 PM			
November 1 st to 15 th , 2009	27.53	18.46	70.13	53.20	2.73	6.63	17.2
	(26.46)	(16.30)	(72.71)	(64.80)	(3.90)	(3.89)	(-)

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

Fortnight from 1st to 15th November, 2009

During the first fortnight of the month i.e., from November 1st to 15th, 2009, the average maximum temperature was lower by 1.87^oC and minimum temperature was higher by 0.86^oC respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 1.07^oC and 2.16^oC respectively, as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 15.33% and 6.8 % respectively, as compared to the previous fortnight. Rainfall of 17.2 mm is recorded during the fortnight.

Crop weather situation

- ❖ The lower relative humidity and higher wind speed during the fortnight shows onset of dry spell. In fruit orchards soil basin mulching with dry leaves or paddy straw may be done to prevent loss of water due to evaporation.
- ❖ Leaf eating caterpillars were observed on ornamental crops like jasmine, red ginger and rose with normal growth.
- ❖ Thrips, white flies, black spots, powdery mildew were observed on gerbera crop with normal growth.
- ❖ Good growth, flowering and pod setting are observed in few lines of Mucuna sp.
- ❖ Good growth with viral, wilt and insect incidence was observed in Coleus forskohlii.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In grapes, downy mildew and anthracnose may infect grape vines var. Anab - e- Shahi. For downy mildew application of Metalaxl + Mancozeb (0.2%)/ Al Fosetyl (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

- ❖ In banana, moderate intensity of Sigatoka leaf spot (*Mycosphaerella* sp) (> 40%), crown rot (*Fusarium moniliforme* & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits is expected as earlier. 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.
- ❖ In 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 (imidocloprid @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.
- ❖ Moderate intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may be noticed in pomegranate. 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.

Insect pests

- ❖ Tomato crop in flowering and fruit stages needs two sprays at 15 days interval Ha NPV @ 250 LE/ha for the management of tomato fruit borer. In absence of Ha NPV spray Cypermethrin @ 0.3ml/L or Carbaryl @ 3 g/L.
- ❖ For cabbage and other Cole crops, neem or pongamia soap(1%) or 4% pulverised neem seed power extract is recommended between 25 and 45 days after transplanting for the management of DBM.
- ❖ On okra, incidence of jassids may increase, For its management spray the crop with imidacloprid @ 0.5 ml/l.
- ❖ For the management brinjal shoot and fruit borer spray carbosulfan @ 2ml/l or rynaxpyr @ 0.3 ml/l, alternated with Bt-2ml/L. For leaf feeding beetles, apply neem cake in the soil and spray carbaryl 3g/L wherever infestation is severe.

Remedial measures.

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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Fortnight	Temperature(°C)		Relative Humidity(%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm)
	Average Max.	Average Min.	Average At 7.30AM	Average at 1.30 PM			
16 th – 31 st October, 2009	29.4	17.6	54.8	46.4	3.9	3.85	--
	(26.8)	(19.0)	(79.7)	(67.5)	(2.8)	(4.43)	(--)

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

Fortnight from 16th to 31st October 2009

During the second fortnight i.e., from October 16th to 31st 2009, the average maximum temperature was higher by 2.3°C and minimum temperature was lower by 1.4°C, as compared to the previous fortnight. The average maximum temperature value is higher by 2.6°C and minimum temperature value is lower by 1.4°C respectively, as compared to the values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were lower by 22.5% and 14.9% respectively, as compared to the previous fortnight. There was no rainfall during the fortnight.

Crop weather situation

- ❖ The yield of the tomato was affected significantly. There was a reduction in yield about 60% in July planting crop. The final harvest is over.
- ❖ Due to rains and flooding the onion yield reduction was more than 50 %. The bulb size was small and the bulb rotting was observed.
- ❖ The lack of rainfall in this fortnight makes vegetable crop nutrition vulnerable. Uptake of applied nutrients in tomato, capsicum, brinjal, cabbage will be reduced. Foliar spray with 0.5% urea and vegetable special of IIHR at 0.3% recommended. Banana also needs foliar spray for optimum yield and quality.
- ❖ The weather of the last fortnight was suitable for the cultivation of *Pleurotus florida*, *Pleurotus sajarcay*, *Hypsizygus ulmarius*, *Lentinula edodes* and *Agrocybe aegerita*. The weather was not suitable for the cultivation of *Calocybe indica* and *Ganoderma lucidum*.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ No incidence of *Alternaria* blight and late blight was noticed on tomato. However, anthracnose is seen.
- ❖ 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.
- ❖ In banana, moderate intensity of Sigatoka leaf spot (*Mycosphaerella* sp) (> 40%), crown rot (*Fusarium*

moniliforme & *Botryodiplodia theobromae*) and anthracnose (*Colletotrichum musae*) of fruits is expected. 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.

- ❖ In mango, sooty mould should be taken care. Application of Copper oxychloride (0.3%) along with sticker (@ 0.5 ml / L) is recommended. Anthracnose spots may appear 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.
- ❖ Moderate intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may be noticed on pomegranate. 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.
- ❖ Incidence of PRSV was noticed upto 5% on papaya. This may be due to reduced temperature which is favourable for aphid multiplication and spread of PRSV. This can be prevented by broader cropping with sesbania (or) castor. Spraying of systemic insecticides like Acephate @ 1.5 g per / liter at 10 days interval.

Insect pests

- ❖ Various caterpillar pests may increase on vegetable and ornamental crops. For *Spodoptera* spray SNPV @ 250 LE/ha. If the incidence of hairy caterpillar is noticed spray carbaryl @ 2 g/l.
- ❖ Incidence of mango hoppers may increase. Spray azadirachtin 3000 ppm @ 2ml/l, if the hopper population is low. If the incidence is more spray imidacloprid 200 SL @ 0.25 ml/l at early panicle emergence.
- ❖ Beetle pests may increase on crops like rose and brinjal. Spray carbaryl @ 3g/l.
- ❖ Aphid infestation may increase on crops like rose and okra. If the okra crop is at pre-flowering stage, spray Dimethoate @ 2 ml/l. Otherwise, thoroughly spray the crop with neem or pongamia soap (1%) or pulverized neem seed powder extract (NSPE) 4 %.
- ❖ On brinjal shoot and fruit borer, *Leucinodes orbonalis* incidence may increase. For its effective management spray carbosulfan @ 2ml/l or rynaxpyr @ 0.3 ml/l.

Remedial measures

Sprays with recommended pesticides / botanicals for control of above pests and diseases.

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Fortnight	Temperature(°C)		Relative Humidity(%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm)
	Average Max.	Average Min.	Average At 7.30AM	Average at 1.30 PM			
October 1 st to 15 th , 2009	27.1	19.0	77.3	61.3	3.1	5.81	16.2
	(28.4)	(19.1)	(80.6)	(62.2)	(3.5)	(3.7)	(-)

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

Fortnight from 1st to 15th October, 2009

The average maximum and minimum temperatures during the first fortnight from October 1st to 15th, 2009, were lower by 1.0°C and 0.7°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were lower by 1.3°C and 0.1°C respectively, as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were lower by 5.9% and 4.7 % respectively, as compared to the previous fortnight. Rainfall of 16.2 mm is recorded during the fortnight.

Crop weather situation

Crop Production

- ❖ Tomato crop is in harvest stage and expected to perform best in the ensuing fortnight due to existence of favourable climatic situation.
- ❖ Good seedling establishment was observed in cauliflower and expected to have good vegetative growth in the coming fortnight.
- ❖ Chill crop is in good fruit development stage and good fruit ripening is expected in the ensuing fortnight.
- ❖ Good bulb development was observed in onion and good maturity is expected in ensuing fortnight.
- ❖ Good pod maturity was observed in French bean.
- ❖ Good head growth is observed in cabbage and it is expected to continue the same in the coming fortnight.
- ❖ Pod development is good in Dolichos bean and same is expected in the next fortnight.
- ❖ Good fruit maturity and harvesting is observed in okra and same is expected to continue.
- ❖ In banana plantations when marginal yellowing in old leaves with mottling towards midrib is seen it can be suspected as Mg deficiency which is due to excess K application. It can be corrected by application of 0.25kg Mg SO₄ /tree. Papaya requires high doses of manures and fertilizers. Papaya plants which were planted during spring or monsoon can be supplemented with 200-250 g each of N, P₂O₅ and K₂O /tree for getting high yields.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In onion, the incidence purple blotch is increasing due to foggy weather.
- ❖ In tomato, early blight disease will spread due to the prevailing weather conditions in tomato. Foliar application of Mancozeb or propineb or Chlorothalonil @ 2gm/l is recommended at 10 days interval for the effective management of the above diseases.
- ❖ Rust infection needs attention on var. Bangalore blue in grapes. It could be managed with the application of Chlorothalonil (0.2%) or Bitertanol (0.2%). Powdery mildew may infect grapevines for which sprays of Triadimefon (0.1%)/ Hexaconazole (0.1%) are recommended.
- ❖ Sigatoka leaf spot and anthracnose to be constantly monitored on banana. For controlling Sigatoka application of Tridemorph (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.
- ❖ The incidence of bacterial blight disease caused by *Xanthomonas axonopodis* pv. *punicae* ranged from 25 - 40.0% during first fortnight of October, 2009 in pomegranate orchards in Sira, Hiriyur and Jagalur. The increase in blight incidence was mainly due to rains and cloudy weather prevailing in these areas. The disease can be managed by adopted the following control measures, i.e. i) removing the affected plant parts and destroying them by burning, ii) application of 2 - 3 sprays of streptomycin (0.3g/l) along with copper oxychloride (3.0g/l) at fortnightly interval alternated with one or two sprays of Bordeaux mixture (1%). Leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) may recur. These could be managed by spraying Chlorothalonil (0.2%)/Antracol (0.2%)/ Carbendazim (0.1%)/ Thiophanate methyl (0.1%)/ Hexaconazole (0.1%) along with sticker @ 0.5ml/l.
- ❖ In sapota, leaf spot (*P. indica*) may be moderate. Spraying Zineb (0.3%) or Ziride (0.4%) along with sticker (0.5 ml /l) effectively controls the disease.
- ❖ Due to an increase in Soil moisture the Incidence of wilting and ring spot virus are noticed in papaya. The increase in temperature will lead to a masking of ring spot symptoms.

Insect pests

- ❖ The prevailing weather conditions are conducive for increase in the incidence of thrips, *Scirtothrips dorsalis* on chilli and rose. For its management spray acephate @ 1g/l or imidacloprid @ 0.5 ml/l.
- ❖ Various caterpillar pests may increase on vegetable and ornamental crops. For *Spodoptera* spray SNPV @ 250 LE/ha. If the incidence of hairy caterpillar is noticed spray carbaryl @ 2 g/l.
- ❖ On okra, incidence of jassids may increase. For its management spray the crop with imidacloprid @ 0.5 ml/l.
- ❖ Aphid infestation may increase on crops like rose and okra. If the okra crop is at pre-flowering stage, spray Dimethoate @ 2 ml/l. Otherwise, thoroughly spray the crop with neem or pongamia soap (1%) or pulverized neem seed powder extract (NSPE) 4 %.
- ❖ On brinjal shoot and fruit borer, *Leucinodes orbonalis* may increase. For its effective management spray carbosulfan @ 2ml/l or rynaxpyr @ 0.3 ml/l.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 30th September, 2009

Latitude : 13^o58¹ N

Longitude : 78^o 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 1.30 PM			
16 th - 30 th September, 2009	28.1	19.7	83.2	66.0	3.1	4.65	205.2
	(27.89)	(19.37)	(79.14)	(62.88)	(3.71)	(6.15)	(-)

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

Fortnight from 16th to 30th September 2009

The average maximum and minimum temperatures during the second fortnight from September 16th to 30th 2009, were lower by 1.2°C and 0.4°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 0.2°C and 0.3°C respectively, as compared to the values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 8.0% and 8.2% respectively, as compared to the previous fortnight. Rainfall of 205.2 mm is recorded during the fortnight which is significantly high as compared to the previous fortnight and averages of previous five years during the corresponding period. Due to excessive and continuous rains in northern parts of Karnataka and Kurnool, Mahbubnagar, Krishna, Guntur and Prakasam districts of Andhra Pradesh there were floods which has affected the standing crop.

Crop weather situation

- ❖ Tomato crop is in harvest stage and expected to perform best in the ensuing fortnight.
- ❖ Chilli crop is in good fruit development stage and expected to perform best in the ensuing fortnight.
- ❖ Good bulb enlargement was observed in onion and good bulb development is expected.
- ❖ Good pod maturity was observed in French bean.
- ❖ Good head growth is observed in cabbage and it is expected to continue the same in the coming fortnight.
- ❖ Pod development is good in Dolichos bean and same is expected in the next fortnight.
- ❖ Good fruit maturity and harvesting is observed in okra and same is expected to continue.
- ❖ For those banana plantations which were planted during June- July second installment application of N, P₂O₅ and K₂O @ 50:30:60 g per plant may be applied but must be placed below 10 cm to avoid leaching. Because of heavy rainfall during last fortnight, the loss of nitrogen through leaching happens. Hence application of 20% extra nitrogen, fertilizers will be helpful to all horticultural crops. Since there was heavy rainfall during last fortnight measures may be taken to prevent water logging in fruit crops like papaya and acidlime.
- ❖ The weather data was ideal for growing oyster, *Hysizyus uklmarius*, shiitake and black poplar mushroom.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In onion, due to continuous rains, onion crop has been infected with *Alternaria* blight (purple blotch) and *Phytophthora* blight. Application of Mancozeb (0.2 g / l) at 10 days interval is recommended for the management of above diseases.
- ❖ Late blight caused by *phytophthora infestans* on tomato. *p. pavisitica* induced fruit rot in brinjal and fruit rot (*p. capsici*) in capsicum occurred severely during the period. As a control measure Equaton-pro 1 ml per litre or Sectin 2 gm per litre or Acrobat 2 gm per litre.
- ❖ In grapes, rust infection needs constant attention on var. Bangalore blue. It could be managed with the application of Chlorothalonil (0.2%) or Bitertanol (0.2%). Powdery mildew may infect grapevines for which sprays of Triadimefon (0.1%)/ Hexaconazole (0.1%) are recommended.
- ❖ In banana, during the rains, sigatoka leaf spot occurs commonly on banana. For controlling Sigatoka application of Tridemorph (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.
- ❖ In pomegranate, leaf and fruit spot disease caused by *Puedocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) 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 sticker @ 0.5ml/l.
- ❖ In sapota, moderate intensity of leaf spot (*P. indica*) may be notice. Spraying Zineb (0.3%) or Ziride (0.4%) along with sticker (0.5 ml /l) effectively controls the disease.
- ❖ In guava, Canker (*Pestalotiopsis psidi*) in greenish immature guava fruits and styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) in mature fruits may be occurring. 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) is recommended for disease control.

Insect pests

- ❖ Significant rainfall coupled with moderate humidities may increase the incidence of caterpillar pests on various vegetable and ornamental crops. For *Spodoptera* spray *SNPV* @ 250 LE/ha. If the incidence of hairy caterpillar is noticed spray carbaryl @ 2 g/l.
- ❖ Incidence of pests like mites and thrips will come down on various crops like chilli, rose and tomato.
- ❖ Incidence of fruit fly may increase on cucurbitaceous crops. For its management erect cuelure (para pheromone) traps @ 3 /acre. Spray carbaryl 50 WP @ 3 g/l.
- ❖ Aphid infestation may increase on crops like rose and okra in due course. If the okra crop is at pre-flowering stage, spray Dimethoate @ 2 ml/l. Otherwise, thoroughly spray the crop with neem or pongamia soap (1%) or pulverized neem seed powder extract (NSPE) 4 %.

Remedial measures

Sprays with recommended pesticides / botanicals for control of above pests and diseases.

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

Period: 1st to 15th September, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
September 1 st to 15 th , 2009	29.3	20.1	75.2	57.8	4.2	6.56	97.6
	(27.8)	(20.0)	(97.4)	(65.3)	(3.2)	(5.6)	(-)

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

Fortnight from 1st to 15th September, 2009

The average maximum and minimum temperatures during the first fortnight from September 1st to 15th, 2009, is almost same as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 1.5°C and 0.1°C respectively, as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were lower by 0.9% and 2.2 % respectively, as compared to the previous fortnight. Rainfall of 97.6 mm is recorded during the fortnight which is higher as compared to the 26.6 mm rainfall during the previous fortnight.

Crop weather situation

Crop Production

- ❖ Monsoon was active during this fortnight. Sufficient rainfall is received to undertake farm operations. Farmers may undertake weeding and basin cleaning in vegetables and fruit orchards. Heavy implements may be avoided if the soil is too wet. Rabi transplanting of vegetables may be undertaken.
- ❖ Tomato crop is in harvest stage and expected to perform best in the ensuing fortnight.
- ❖ Chilli crop is in good flowering and fruit development stage and expected to perform best in the ensuing fortnight.
- ❖ Good bulb initiation was observed in onion and good bulb enlargement is expected.
- ❖ Good pod maturity was observed in French bean.
- ❖ Good head initiation is observed in cabbage and it is expected to have good head development in the coming fortnight.
- ❖ Pod development is good in Dolichos bean and good pod maturity is expected in the next fortnight.
- ❖ Good fruit maturity and harvesting is observed in okra and same is expected to continue.
- ❖ In tomato, because of rains some fruit rot was observed in the June planting crop. In August planting crop fruit growth was better and 50% fruit has set in.
- ❖ In onion, August planting crop the plant growth was better as indicated by good canopy development in last 15 days.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In pomegranate, the incidence of Bacterial blight disease caused by *Xanthomonas axonopodis* pv. *punicae* is increased from 5 - 20.0% during May, 2009 to severe incidence of 30.0 – 50.0% pomegranate orchards in Sira and Jagalur. The increase in blight incidence was mainly due to rains and cloudy weather prevailing in these areas. The disease can be managed by adopted the following control measures, i.e. i) removing the affected plant parts and destroying them by burning, ii) by application of 2 - 3 sprays of streptocycline (0.3g/l) along with copper oxychloride (3.0g/l) at fortnightly interval alternated with one or two sprays of Bordeaux mixture (1%).
- ❖ The weather data of the last fortnight was suitable for the cultivation of Oyster mushroom, Elm oyster mushroom, Shiitake mushroom, Black Poplar mushroom, Milky mushroom (*Calocybe indica*) and Reishi Mushroom (*Ganoderma lucidum*).

Insect pests

- ❖ Significant rainfall coupled with moderate humidities may increase the incidence of caterpillar pests on various vegetable and ornamental crops. For *Spodoptera* spray SNPV @ 250 LE/ha. If the incidence of hairy caterpillar is noticed spray carbaryl @ 2 g/l.
- ❖ Incidence of thrips may comedown on crops like Rose, chilli.
- ❖ Aphid infestation may increase on crops like rose and okra. Spray Dimethoate @ 2 ml/l for its management.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 31st August, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
16 th - 31 st August, 2009	29.4	20.0	76.1	60.0	3.6	6.24	26.6
	(28.2)	(19.6)	(96.2)	(64.0)	(3.8)	(5.8)	(110.9)

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

Fortnight from 16th to 31st August 2009

The average maximum and minimum temperatures during the second fortnight from August 16th to 31st 2009, were higher by 0.2°C and 0.3°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were higher by 1.2°C and 0.4°C respectively, as compared to the values of the corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 3.0% and 6.2% respectively, as compared to the previous fortnight. Rainfall of 26.6 mm is recorded during the fortnight which is very low as compared to the averages of previous five years during the corresponding period.

Crop weather situation

- ❖ Stray flowering in Alphonso and Totapuri varieties of mango was observed.
- ❖ In kharif vegetables and fruits in periods of rapid growth like flowering and fruit set are very sensitive to moisture stress. As there is about 76% deficit rainfall, one or two irrigations may be given so that fruit size may not be affected in low rainfall areas so as to avoid K deficiency. In case of guava, due to Boron and Zn deficiency the fruits may be small and hard. Application of ZnSO₄ @ 50 g/tree or 1% spray and 0.1% Boric acid might improve the size of the fruit.
- ❖ The weather data of the last fortnight was suitable for the cultivation of Oyster mushroom, Elm oyster mushroom, Shiitake mushroom, Black Poplar mushroom, Milky mushroom (*Calocybe indica*) and Reishi Mushroom (*Ganoderma lucidum*).

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In grapes, rust infection needs attention on var. Bangalore blue (> 60%) It could be managed with the application of Chlorothalonil (0.2%) or Bitertanol (0.2%). Powdery mildew may infect grapevines for which sprays of Triadimefon (0.1%)/ Hexaconazole (0.1%) are recommended
- ❖ In pomegranate, leaf and fruit spot disease caused by *Puedocercospora punicae* and anthracnose of

fruit and leaf (*C. gloeosporioides*) 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 sticker @ 0.5ml/l.

- ❖ In sapota, moderate intensity of leaf spot (*P. indica*) may be seen. Spraying Zineb (0.3%) or Ziride (0.4%) along with sticker (0.5 ml/l) will effectively control the disease.
- ❖ In guava, canker (*Pestalotiopsis psidi*) in greenish immature guava fruits and styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) in mature fruits may be occurring. 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) is recommended for disease control.

Insect pests

- ❖ Increased temperature (max.) and moderate humidity encourages sucking pests on major vegetable crops like brinjal, bhendi, cucurbits *etc.* Spray imidacloprid @ 0.5 ml/l for the management of sucking pests like thrips, leaf hoppers.
- ❖ Severe incidence of thrips was noticed on Rose, Gerbera and Capsicum under protected cultivation. Spray acephate @ 1.5 g/l for the management of thrips.
- ❖ Aphid infestation started on rose in open field. Spray Dimethoate @ 2 ml/l for its management.
- ❖ Incidence of brinjal shoot and fruit borer has been observed. If the incidence is severe, spray rynaxpyr @ 0.3 ml/l

Remedial measures

Sprays with recommended pesticides / botanicals for control of above pests and diseases.

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

Period: 1st to 15th August, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
August 1 st to 15 th , 2009	29.2	19.7	73.1	53.8	4.6	7.16	46.6
	(27.1)	(19.9)	(97.3)	(65.3)	(3.2)	(9.6)	(41.8)

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

Fortnight from 1st to 15th August, 2009

The average maximum and minimum temperatures during the first fortnight from August 1st to 15th, 2009, were higher by 0.2°C and 0.4°C respectively, as compared to the previous fortnight. The average maximum temperature value is higher by 2.1°C and minimum temperature value is lower by 0.2°C as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning hours is higher by 0.7% and during afternoon hours is lower by 2.3 % as compared to the previous fortnight. Rainfall of 46.6 mm is recorded during the fortnight which is higher as compared to the 30.4mm rainfall during the previous fortnight.

Crop weather situation

Crop Production

- ❖ During the previous fortnight sporadic flowering was observed in mango cvs. Alphonso and Totapuri.
- ❖ For those banana plantations which were planted during June- July, first dose of application of N, P₂O₅ and K₂O @ 50:30:60 g per plant may be applied.
- ❖ For guava also N, P₂O₅ and K₂O @ 60: 30 : 40 g/tree may be applied if fertilizer application has not been done already.
- ❖ For papaya land preparation and basal application of FYM @ 25 kg/tree fertilizer application may be done for September October planting.
- ❖ In tomato, the flowering and fruit setting has started in July planting crop during the period. The plant canopy is well developed in the tomato. In the August planting crop the flowering has not yet initiated.
- ❖ The weather is ideal for normal growth of tuberose, gladiolus, red ginger, carnation, anthurium, jasmine and gerbera. In crossandra slow growth with out flowering is observed.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In grapes, Rust infection was noticed on var. Bangalore blue. Application of Chlorothalonil (0.2%) or Bitertanol (0.2%) control the disease effectively. Powdery mildew can be controlled by spraying Triadimefon (0.1%) / Hexaconazole (0.1%).
- ❖ Leaf and fruit spot disease caused by *Puedocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) can be controlled on pomegranate 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.
- ❖ Infection of leaf spot (*P. indica*): Spraying Zineb (0.3%) or Ziride (0.4%) along with sticker (0.5 ml /l) will effectively control the disease in sapota.
- ❖ In guava, canker (*Pestalotiopsis psidi*), styler end rot (*Phomopsis psidi*) and anthracnose (*C. gloeosporioides*) 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) is recommended for disease control.
- ❖ Sigatoka leaf spot becomes severe on banana during the period. Foliar application of Calixin (0.1%) or Tilt (0.05%) effectively controls the disease.
- ❖ Black spot causes severe leaf fall in rose and the disease can be controlled by foliar application of Kavach (0.2%) or Tilt (0.05%).
- ❖ In tomato, the prevailing weather conditions favour the outbreak of late blight. Removal and destruction of lower leaves that get infected first, combined with foliar application of Acrobat (0.2%) / Sectin (0.2%) / Ridomil (0.2%) / Equation pro (0.2%) offer good control of the disease. Early blight can be controlled by foliar application of Dithane M-45 (0.2%), Kavach (0.2%) or Quintal (0.2%).

Insect pests

- ❖ During the period at moderate temperature, rainfall and relative humidity results in high incidence of hairy caterpillars, aphids on vegetable and ornamental crops. For the management of hairy caterpillars and aphids spray acephate @ 1 g/l or endosulphan @ 2ml/l.
- ❖ Incidence of thrips is coming down on crops like chilli & rose.
- ❖ Severe incidence of aphids may be observed on crops like bhendi, cucurbits *etc.* spray acephate @ 1 g/l for their management.
- ❖ Infestation of leaf spot and soft rot is observed on Aloe vera

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 31st July, 2009

Latitude : 13°58' N

Longitude : 78° 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 1.30 PM			
16 th - 31 st July, 2009	29.0	19.3	72.4	56.1	5.4	11.07	30.4
	(27.8)	(20.2)	(95.6)	(64.1)	(3.5)	(7.85)	(78.6)

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

Fortnight from 16th to 31st July 2009

The average maximum and minimum temperatures during the second fortnight from July 16th to 31st 2009, were higher by 1.2°C and 0.6°C respectively, as compared to the previous fortnight. The average maximum temperature value is higher by 1.2°C and minimum temperature value is lower by 0.9°C as compared to the values of the corresponding period for the previous five years. The percent relative humidity during morning hours is higher by 0.2% and during afternoon hours is lower by 2.4%, as compared to the previous fortnight. Rainfall of 30.4 mm is recorded during the fortnight which is significantly low as compared to the averages of previous five years during the corresponding period.

Crop weather situation

- ❖ The low rainfall short by 48.2 mm during the reporting period is an significant factor affecting banana, guava and vegetables.
- ❖ Since Boron and Potassium helps in drought tolerance soil application of 25% extra potash and foliar spray and drenching of Banana crop with Banana special at 0.5% drenching and spray of vegetable special at 0.5% is recommended as a special case.
- ❖ The weather condition of the last fortnight was suitable for the cultivation of Oyster mushroom, Elza oyster mushroom and Shiitake mushroom.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In pomegranate, infection of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) occur during the period and the incidence of bacterial nodal blight disease in pomegranate caused by *Xanthomonas axonopodis* pv. *punicae* becomes severe due to rain.
- ❖ In tomato, the climatic conditions are favourable for the incidence of groundnut bud necrosis virus (GBNV)

Insect pests

- ❖ During the period, slightly higher temperatures coupled with less than expected rainfall resulted in incidence of mealy bug incidence on fruit crops such as guava and citrus. These conditions may also increase the incidence of pests like thrips and mites on vegetable crops.
- ❖ Caterpillar, Black spot, thrips, mites incidence on rose, bud borer infestation on carnation and jasmine, corm rot incidence on gladiolus, mealy bugs incidence on red ginger is observed.
- ❖ Incidence of leaf spot, soft rot is observed on Aloe vera.

Remedial measures

Sprays with recommended pesticides / botanicals for control of above pests and diseases.

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

Period: 1st to 15th July, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
1 st – 15 th July, 2009	27.8	18.7	72.2	58.5	3.5	12.0	Nil
	(28.5)	(20.1)	(89.6)	(61.2)	(4.4)	(9.9)	(41.9)

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

Fortnight from 1st to 15th July, 2009

The average maximum and minimum temperatures during the first fortnight from July 1st to 15th, 2009, were lower by 2.0°C and 1.36°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were lower by 0.7°C and 1.4°C respectively, as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 3.74 and 4.3 % respectively as compared to the previous fortnight. There was no rainfall during the fortnight, as against average rainfall of 41.9 mm as compared to the values of corresponding period for the previous five years.

Crop weather situation

- ❖ Lack of rainfall in the past fortnight affected rainfed vegetables and irrigated tomato, brinjal, bhendi needs foliar spray to supplement soil application. B deficiency will be severe in drought. Spray of vegetable special Micronutrient formulation at 0.5% recommended for tomato, chilli, brinjal at 3 g for bhendi and beans 2 g/l for cucumber. Boron and Potash provide drought tolerance.
- ❖ Banana also needs foliar spray with Banana special foliar formulation at 0.5% spray and soil drenching at 0.5% and 500 ml/plant for drought tolerance.
- ❖ Rock phosphate enriched FYM to be recommended for better root growth for tackling drought. Generally foliar nutrition to be encouraged on a strategy since root uptake of nutrients limited. Better B, P, K nutrition help tackling drought.
- ❖ The weather is ideal for normal growth of tuberose, gladiolus, red ginger, carnation, anthurium and jasmine. In gerbera stunted growth is observed.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ Infection of downy mildew will increase on grapes and cucurbits. Rust infection will surface on var "Bangalore Blue". Lack of rain, high humidity with warm weather will result in high powdery mildew incidence on all crops.
- ❖ In mango, latent infection due to anthracnose (*C. gloeosporioides*) and stem end rot (*B. theobromae*)

will increase.

- ❖ Infection of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) remain moderate on pomegranate.
- ❖ Increase in incidence of groundnut but necrosis virus (GBNV) was noticed upto 21.5% in tomato. This is due to humid weather which is favourable to multiplication of thrips vectors. This may further increase with favourable conditions.
- ❖ In chilli, incidence of Chilli Mosaic Virus (CMV) will start appearing. This increase in incidence is due to aphid population buildup due to favourable weather condition

Insect pests

- ❖ During the period, moderate temperatures and less humidity coupled with no rainfall may enhance the pests like thrips and mites on vegetable crops.
- ❖ If the rainfall is delayed, incidence of thrips also may increase on ornamentals like rose under polyhouse conditions.
- ❖ Increased infestation of diamond back moth (in the absence of rain), leaf hopper infestation (*Amrasca splendens*) will increase.
- ❖ Incidence of fruit fly will marginally reduce on cucurbits. Leafminer incidence on solanaceous, cucurbitaceous and leguminous vegetables will increase.
- ❖ Incidence of brinjal shoot and fruit borer will remain as it is but gall midge incidence will increase.
- ❖ Thrips transmitted and white fly transmitted viral diseases will increase.
- ❖ Mite incidence will start surfacing.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 30th June, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
16 th – 30 th June, 2009	29.80	20.06	68.46	54.20	5.13	7.76	7.4
	(29.40)	(20.06)	(88.90)	(58.18)	(4.73)	(10.18)	(27.64)

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

Fortnight from 16th to 30th June 2009

The average maximum and minimum temperatures during the second fortnight from June 16th to 30th 2009, were higher by 0.7°C and 0.36°C respectively, as compared to the previous fortnight. The average maximum temperature value during the corresponding period for the previous five years is higher by 0.4°C and the minimum temperature remained same. The percent relative humidity during morning and afternoon hours is lower by 2.24% and higher by 0.9% respectively, as compared to previous fortnight. Rainfall of 7.4 mm is recorded during the fortnight which is significantly low compared to the averages of previous five years during the corresponding period and as against 54.0 mm rainfall during the previous fortnight.

Crop weather situation

- ❖ The weather was conducive for growing milky, oyster and Reishi mushroom. Shiitake cultivation needs cooling for fructification
- ❖ The low rainfall in this fortnight has affected nutrient and water availability to kharif vegetables. Foliar spray of vegetable special micronutrient formulation recommended for drenching at 5 g/litre 50 ml/plant and foliar spray to tomato, cabbage, cauliflower, brinjal, chillies at 2 g/litre for cucurbits.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In okra, incidence of tobacco streak virus increased from 10.5% to 21.7%. This may be due to increase in vector thrips population, favoured by weather conditions.
- ❖ In tomato, incidence of tomato leaf curl, alternaria blight and phytophthora will be higher. The increase in incidence of leaf curl is due to favourable humidity for whitefly multiplication and spread.
- ❖ In cabbage and cucurbits the downy mildew disease will be seen in seedlings.
- ❖ Bacterial wilt in brinjal and feat rot in okra may be observed.

- ❖ Canker in guava and sigatoka leaf spot disease in banana may be seen.

Insect pests

- ❖ During the period, relatively higher humidity and rainfall will trigger the incidence of pests like caterpillars on various horticultural crops especially in okra.
- ❖ Leaf minor incidence may be seen in tomato and citrus.
- ❖ Incidence of diamond back moth, *Plutella xylostella* on cabbage will come down.
- ❖ Thrips incidence will be seen in tomato, chilli, cucurbits and gerbera.
- ❖ Incidence of midges may increase on crocandra.
- ❖ Aphids incidence will be on rise in legumes and okra.
- ❖ Fruit fly and fruit borer may be seen in cucurbits.
- ❖ Incidence of leaf spot, soft rot may be observed on Aloe vera.

Remedial measures

- ❖ In vegetable crops it is suggested to go for mulching and also employing drip irrigation where ever dry weather prevails.
- ❖ Prophylactic sprays with recommended pesticides / botanicals have to employed for control of above pests and diseases in fruits, vegetables and ornamental crops.

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

Period: 1st to 15th June, 2009

Latitude : 13°58' N

Longitude : 78° 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 1.30 PM			
1 st – 15 th June, 2009	29.1	19.7	70.7	53.3	4.8	7.54	54.0
	(29.5)	(20.3)	(89.6)	(57.2)	(5.1)	(7.63)	(32.3)

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

Fortnight from 1st to 15th June, 2009

The average maximum and minimum temperatures during the first fortnight from June 1st to 15th, 2009, were lower by 1.6°C and 0.6°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were lower by 0.4°C and 0.6°C as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning hours is same as last fortnight and during afternoon hours is lower by 1.5 % as compared to the previous fortnight. Rainfall of 54.0 mm was recorded during the fortnight, as against average rainfall of 32.3 mm for the previous five years.

Crop weather situation

- ❖ Flowering has started in Annona. Artificial pollination may be taken up in Arka Sahan variety of Annona.
- ❖ The weather is ideal for normal growth of tuberose, gladiolus, red ginger, anthurium, carnation and jasmine. Slow growth is noticed in gerbera and crossandra.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In grapes, infection of downy mildew and anthracnose was moderate on cv. Anab-e-shahi.
- ❖ In mango, anthracnose (*C. gloeosporioides*) and stem end rot (*B. theobromae*) were recorded in mango fruits during ripening.
- ❖ Low intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) were continued to be recorded in pomegranate.
- ❖ In sapota, low intensity of leaf spot (*P. indica*) was recorded.

Insect pests

- ❖ Incidence of fruit fly infestation on mango may increase.
- ❖ Incidence of pests like thrips on crops like chilli, rose and diamond back moth incidence on cabbage will come down.
- ❖ However, with the increase in the rainfall, caterpillar incidence may increase on different vegetable and ornamental crops.
- ❖ Incidence of mites will be noticed on rose, gerbera and carnation.
- ❖ Infestation of leaf spot and soft rot is observed on Aloe vera

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 31st May, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
16 th - 31 st May, 2009	30.7	20.3	70.7	54.8	4.66	6.0	181.6
	(31.4)	(21.0)	(83.0)	(51)	(5.18)	(6.2)	(72.3)

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

Fortnight from 16th to 31st May 2009

The average maximum and minimum temperatures during the second fortnight from May 16th to 31st 2009, were lower by 2.7°C and 0.2°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values during the corresponding period for the previous five years were lower by 0.7°C and 0.7°C respectively. The percent relative humidity during morning and afternoon hours is higher by 1.0% and 5.3% respectively, as compared to previous fortnight. Rainfall of 181.6 mm is recorded during the fortnight which is significantly high compared to the averages of previous five years during the corresponding period and as against 31.7mm rainfall during the previous fortnight.

Crop weather situation

- ❖ The higher rainfall good for mango varieties like Neelum but not good for Alphonso. It may induce spongy tissue. In summer vegetables nutrient uptake will be enhanced and higher yield is expected.
- ❖ The weather was conducive for growing milky, oyster and Reishi mushroom. Shiitake cultivation needs cooling for fructification.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In grapes, infection of downy mildew was noticed on vine foliage.
- ❖ Infestation of anthracnose (*C. gloeosporioides*) and stem end rot (*B. theobromae*) were noticed on mango fruits during ripening.
- ❖ In pomegranate, low intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) were noticed.
- ❖ Low intensity of leaf spot (*P. indica*) was recorded in sapota

Insect pests

- ❖ Prevailing moderate temperatures coupled with high rain fall may result in reduction of pests like thrips on chilli, rose.
- ❖ Mite incidence on rose, diamond back moth incidence on cabbage also may come down because of low temperatures and high rainfall.
- ❖ Incidence of fruit fly may increase on mango in the coming weeks.
- ❖ Incidence of pests like thrips will be noticed on gladiolus and high infestation on gerbera.
- ❖ Incidence of leaf spot, soft rot is observed on Aloe vera.

Remedial measures

Prophylactic sprays with recommended pesticides/ botanicals for control of above pests and diseases.

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

Period: 1st to 15th May, 2009

Latitude : 13^o58¹ N

Longitude : 78^o 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 1.30 PM			
1 st – 15 th May, 2009	33.4	20.5	69.7	49.5	6.0	5.27	31.7
	(25.5)	(21.5)	(80.4)	(43.2)	(5.7)	(6.2)	(53.2)

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

Fortnight from 1st to 15th May, 2009

The average maximum and minimum temperatures during the first fortnight from May 1st to 15th, 2009, were lower by 1.3°C and 0.1°C respectively, as compared to the previous fortnight. The average maximum temperature value is higher by 7.9°C and average minimum temperature value is lower by 1.0°C as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were lower by 12.3 and 15.4 % respectively as compared to the previous fortnight. Rainfall of 31.7 mm was recorded during the fortnight, as against average rainfall of 53.2 mm as compared to the values of corresponding period for the previous five years.

Crop weather situation

- ❖ In the mango varieties, wherein fruiting is noticed, satisfactory fruit growth has been observed.
- ❖ The weather parameters may not affect any crop and lower rain for the month of May is good for mango.
- ❖ The weather is ideal for normal growth of tuberose, gerbera, gladiolus, crossandra, red ginger and jasmine. In anthurium stunted growth is observed and in carnation flowering is noticed.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ In mango, anthracnose (*C. gloeosporioides*) infection on foliage were noticed.
- ❖ Low intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C gloeosporioides*) were continued to be recorded in pomegranate.
- ❖ In sapota, low intensity of leaf spot (*P. indica*) was recorded.

Insect pests

- ❖ Incidence of fruit fly infestation on mango may increase.
- ❖ Incidence of pests like thrips may be high on crops like chilli and onion. However, with one or two heavy rains in the coming week may result in reduction of thrips and increase in the incidence of caterpillar and beetle pests on various crops.
- ❖ Incidence of pests like thrips will be noticed on rose, gerbera and gladiolus and mites in carnation.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 30th April, 2009

Latitude : 13°58' N

Longitude : 78° 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 1.30 PM			
16 th – 30 th April, 2009	34.7	20.4	82.0	64.9	6.3	5.04	75.0
	(33.0)	(20.6)	(79.4)	(38.2)	(5.9)	(4.48)	(34.06)

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

Fortnight from 16th to 30th April 2009

The average maximum temperature during the second fortnight from April 16th to 30th 2009, is lower by 0.56°C and average minimum temperature is higher by 1.8°C as compared to the previous fortnight. The average maximum and minimum temperature values during the corresponding period for the previous five years were higher and lower by 1.7°C and 0.2°C respectively. The percent relative humidity during morning and afternoon hours is higher by 5.0% and 8.9% respectively, as compared to previous fortnight. Rainfall of 75 mm is recorded during the fortnight which is significantly high compared to the averages of previous five years during the corresponding period and as against nil rainfall during the previous fortnight.

Crop weather situation

- ❖ Lot of fruit drop in like langra, dashehari and other varieties of mango were noticed.
- ❖ The weather condition helps to reduce water and nutrient stress in mango by better uptake of native and applied nutrients.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ In pomegranate, low intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C gloeosporioides*) were noticed.
- ❖ Low intensity of leaf spot (*P. indica*) was recorded in sapota

Insect pests

- ❖ Infestation of fruit fly may increase on mango.
- ❖ Under the present weather situation pests like thrips will come down on crops like chillies and onion.
- ❖ Diamond back moth and aphids' incidence will be reduced on cabbage.

- ❖ Similarly thrips and mite incidence also may be reduced on rose under polyhouse condition.

Remedial measures

Prophylactic sprays with recommended pesticides/ botanicals for control of above pests and diseases.

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

Period: 1st to 15th April, 2009

Latitude : 13^o58¹ N

Longitude : 78^o 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 1.30 PM			
1 st – 15 th April, 2009	35.26	18.6	77.0	56.0	7.72	5.95	-
	(32.5)	(19.5)	(64.4)	(38.4)	(6.0)	(4.44)	(26.8)

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

Fortnight from 1st to 15th April, 2009

The average maximum and minimum temperatures during the first fortnight from April 1st to 15th, 2009, were higher by 2.26°C and 1.3°C respectively, as compared to the previous fortnight. The average maximum temperature value is higher by 2.76°C and average minimum temperature value is lower by 0.9°C as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 8.0 and 12.6 % respectively as compared to the previous fortnight. There was no rainfall during the fortnight, as against average rainfall of 26.8 mm as compared to the values of corresponding period for the previous five years.

Crop weather situation

- ❖ Fruit drop has been observed in many of the mango varieties and the fruit set is poor.
- ❖ Because of the weather flowering is reduced in rose under open and poly house conditions.
- ❖ The weather is ideal for normal growth of carnation, tuberose, gladiolus, anthurium, red ginger and jasmine. In crossandra slow growth is observed and in gerbera completely the growth is stunted.
- ❖ The weather is suitable for the cultivation of Milky mushroom (*Calocybe indica*) and Reishi Mushroom (*Ganoderma lucidum*). Oyster mushroom (*Pleurotus sp.*), Elm mushroom (*Hypsizygus ulmarius*) and Shiitake mushroom (*Lentinula edodes*) required additional cooling

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecasted:

Diseases

- ❖ Drop in mango fruits was noticed. It was due to prevailing drought.
- ❖ Quiescent infection of anthracnose (*Colletotrichum musae*) on banana fruits was moderate.
- ❖ Low intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C gloeosporioides*) were noticed in pomegranate.

- ❖ In sapota, moderate intensity of leaf spot (*P. indica*) was recorded.

Insect pests

- ❖ Incidence of pests like thrips will be high on vegetables like chilli and onion. Similarly, diamond back moth on cabbage, mealy bugs on some fruit crops also may increase.
- ❖ Incidence of mites will be high under polyhouse conditions on crops like rose. However, incidence of aphids will come down on crops like chilli, rose *etc.*
- ❖ Infestation of thrips on gerbera, gladiolus, rose and bacterial wilt on anthurium will be noticed.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 31st March, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
16 th - 31 st March, 2009	33.0	17.3	69.0	43.4	6.0	4.27	Nil
	(32.8)	(17.8)	(60.0)	(30.9)	(5.8)	(4.69)	(22.4)

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

Fortnight from 16th to 31st March 2009

The average maximum temperature during the second fortnight from March 16th to 31st 2009, is lower by 1.0°C and average minimum temperature is higher by 3.7°C as compared to previous fortnight. The average maximum and minimum temperature values during the corresponding period for the previous five years were lower and higher by 0.2°C and 0.5°C respectively. The percent relative humidity during morning and afternoon hours is higher by 2.7% and 11.3% respectively, as compared to previous fortnight. There was no rainfall during the fortnight.

Crop weather situation

- ❖ New panicle initiation has been noticed in some of the mango varieties. Fruit set was observed to be very poor in varieties wherein flowering was noticed earlier.
- ❖ Drop of set fruits upto marble size was more and recurrent flowering was observed in mango cv. Alphonso.
- ❖ Flowering and fruit set is relatively delayed since pruning carried out in February, 2009 (first week) in mulberry.
- ❖ The weather data of the last fortnight was suitable for the cultivation of Milky mushroom (*Calocybe indica*) and Reishi Mushroom (*Ganoderma lucidum*). Oyster mushroom (*Pleurotus sp.*), Elm mushroom (*Hypsizyguis ulmarius*) and Shiitake mushroom (*Lentinula edodes*) required additional cooling

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecasted.

Diseases

- ❖ Incidence of watermelon bud necrosis virus disease increased from 12.5 to 27.5%. This may be due to increase in temperature which is favourable for thrips multiplication and spread.
- ❖ In tomato incidence of powdery mildew is observed and incidence of tomato leaf curl was noticed upto 12.9%. This may be due to increase in whitefly population.

Insect pests

- ❖ In the present weather conditions with slightly higher temperatures coupled with no rainfall, pests like thrips and mites may increase on vegetables like chilli and ornamental crops. Diamond back moth incidence may increase on cabbage
- ❖ In rose, incidence of thrips, mites in open field condition and, powdery mildew, thrips and mites in poly house were noticed and will increase with temperature.
- ❖ Infestation of thrips and corm rot in gladiolus under normal growth scorching, mites in jasmine, mealy bug in crossandra, bacterial wilt in anthurium was noticed and will increase with temperature.
- ❖ Incidence of mealy bugs in *Coleus forskohlii* is observed.

Remedial measures

Prophylactic sprays with recommended pesticides/ botanicals for control of above pests and diseases.

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

Period: 1st to 15th March, 2009

Latitude : 13°58' N

Longitude : 78° 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 1.30 PM			
1 st – 15 th March, 2009	34.0	13.6	66.3	32.1	6.8	5.38	6.6
	(31.8)	(15.9)	(55.2)	(28.4)	(6.6)	(5.75)	(9.4)

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

Fortnight from 1st to 15th March, 2009

The average maximum and minimum temperatures during the first fortnight from March 1st to 15th, 2009, were higher by 2.2°C and 0.6°C respectively, as compared to the previous fortnight. The average maximum temperature value is higher by 2.2°C and average minimum temperature value is lower by 2.3°C as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 2.5 and lower by 7.0 % respectively as compared to the previous fortnight. Rainfall of 6.6 mm was recorded during the fortnight, which was lower by 2.8 mm as compared to the values of corresponding period for the previous five years.

Crop weather situation

- ❖ Fresh initiation of flowering has been noticed in most of the mango varieties and fruit set was noticed in varieties where flowering had occurred earlier.
- ❖ The prevailing weather conditions may aggravate moisture stress and affect uptake of nutrients in rainfed mango and sapota.
- ❖ In tomato, the plant growth was better in terms of plant canopy development and flower setting started during the period in February planted crop.
- ❖ Tomato crop is in harvest stage and expected to perform best in the ensuing fortnight.
- ❖ Chilli crop is in good fruit development stage and expected to perform best in the ensuing fortnight.
- ❖ Very good root enlargement was observed in carrot and the same is expected to continue.
- ❖ Good bulb initiation was observed in onion and the same is expected to continue.
- ❖ Good pod maturity was observed in French bean
- ❖ The weather is ideal for flowering in rose in open and poly house conditions.
- ❖ The weather is ideal for normal growth of carnation, tuberose, gerbera, gladiolus, anthurium, red ginger and jasmine. In crossandra slow growth is observed.
- ❖ Ashwagandha crop has reached maturity.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecast:

Diseases

- ❖ In mango, anthracnose (*C. gloeosporioides*) on foliage was noticed.
- ❖ Quiescent infection of anthracnose (*Colletotrichum musae*) on banana fruits was moderate.
- ❖ Moderate intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) were noticed in pomegranate.
- ❖ In sapota, moderate intensity of leaf spot (*P. indica*) was recorded.

Insect pests

The present weather situation is likely to encourage the incidence of thrips on chilli and rose, diamond back moth and aphids on cabbage, mites on rose under polyhouse conditions.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.

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

Period: 16th to 28th February, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
16 th - 28 th February, 2009	31.8	13.0	63.8	39.1	6.46	5.32	Nil
	(30.4)	(14.6)	(45.4)	(29.1)	(4.6)	(4.98)	(1.2)

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

Fortnight from 16th to 28th February 2009

The average maximum and minimum temperatures during the second fortnight from February 16th to 28th 2009, were higher by 1.2°C and 1.6°C respectively compared to previous fortnight. The average maximum and minimum temperature values during the corresponding period for the previous five years is higher by 1.4°C and lower by 1.6°C respectively. The percent relative humidity during morning hours is higher by 2.5% and during afternoon hours is lower by 6.5%, as compared to previous fortnight. There was no rainfall during the fortnight.

Crop weather situation

- ❖ The weather was congenial for mango fruit development. Routine agronomic practices both in vegetables and fruit crops should be continued. Since the temperature is higher compared to the same period during previous years protective irrigation may be taken up to reduce sun scorching effect.
- ❖ Most of the varieties in the mango germplasm have started flowering and in few varieties wherein flowering was noticed in the first week of January, 2009 and continued flowering has been noticed.
- ❖ In onion and tomato, with the increase in day temperature, growth rates were reduced. Senescence of leaves were observed in tomato
- ❖ Tomato crop is in good fruit development stage and expected to perform best in the ensuing fortnight.
- ❖ Chill crop is in good fruit development stage and expected to perform best in the ensuing fortnight.
- ❖ Fruit development and maturity of watermelon was normal during the last fortnight.
- ❖ Very good root enlargement was observed in carrot and the same is expected to continue.
- ❖ Good bulb initiation was observed in onion and the same is expected to continue.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecast.

Diseases

- ❖ In mango, incidence of powdery mildew (*Oidium mangiferae*) on inflorescence and anthracnose (*C. gloeosporioides*) on foliage were noticed.
- ❖ Quiescent infection of anthracnose (*Colletotrichum musae*) on banana fruits was moderate.
- ❖ Intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) remained higher in pomegranate.
- ❖ In sapota, intensity of leaf spot (*P. indica*) was moderate.

Insect pests

- ❖ Sucking pests like thrips, *Scirtothrips dorsalis* on chilli, mealy bugs on different fruit and ornamental crops; mites, *Tetranychus* sp. on rose and tomato may increase. Similarly, incidence of diamond back moth, *Plutella xylostella* may increase on cruciferous crops.
- ❖ In rose, incidence of thrips, aphids, mites in open field condition and powdery mildew, thrips, mites in poly house were noticed and will increase with temperature.
- ❖ Infestation of thrips, in gerbera under poly house and open conditions, mites in jasmine, stem borer in red ginger under open field and mealy bug in crossandra, bacterial wilt in anthurium, corm rot and thrips in gladiolus was noticed and will increase with the temperature.

Remedial measures

Prophylactic sprays with recommended pesticides/ botanicals for control of above pests and diseases.

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

Period: 1st to 15th February, 2009

Latitude : 13°58¹ N

Longitude : 78° 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 1.30 PM			
1 st to 15 th February 2009	30.6	11.4	61.3	45.6	5.7	4.32	Nil
	(29.0)	(14.0)	(67.1)	(45.8)	(4.8)	(5.34)	(109)

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

Fortnight from 1st to 15th February 2009:

During the period, the average maximum temperature was marginally higher compared to the average of the previous five years, where the mean minimum temperature was much lower compared to the last five years minimum temperature. The relative humidity at morning hours was relatively lower compared to the previous reports whereas at noon time the RH value was almost similar to the corresponding period during last five years. Evaporation was marginally higher with lower wind speed. During the above period, there was no rainfall reported. The weather was congenial for mango flowering and for disease free development.

Crop weather situation:

- ❖ Tomato and chilli crop are in good flowering and fruit development stage and expected to perform best in the ensuing fortnight.
- ❖ Fruit development and maturity of muskmelon & watermelon was normal during the last fortnight.
- ❖ Very good root enlargement was observed in carrot and the same is expected to continue.
- ❖ Good vegetative growth was observed in onion and the same is expected to continue.
- ❖ Incidence of thrips, aphids and mites were noticed in rose cultivated under open field and powdery mildew, thrips and mites in poly house cultivation.
- ❖ Normal growth was observed in Carnation.
- ❖ Incidence of corm rot and thrips were observed in gladiolus.
- ❖ Normal growth was observed in cultivation of Tuberose.
- ❖ Normal growth was observed in Gerbera poly house cultivation and incidence of thrips in open cultivation.
- ❖ Normal growth was observed in Jasmine with incidence of Bacterial wilt.
- ❖ Normal growth was observed in Red Ginger in open cultivation.
- ❖ In crossandra incidence of mealy bug was observed with slow growth or no flower.
- ❖ In Aswagandha crop growth was good and fruiting observed with incidence of mites.
- ❖ Rust incidence was observed in cultivation of Mucuna species.

Incidence of pests and diseases

Insect Pests:

Under the prevailing weather conditions of slight increase in temperature, reduction in the relative humidity and no rainfall, pests like thrips on chilli, rose; leaf miner on tomato may increase. Similarly, diamond back moth on cabbage, mites on rose under protected conditions also may increase.

Diseases:

- ❖ In Mango Powdery mildew (*Oidium mangiferae*) and anthracnose (*C.gloeosporioides*) were noticed on inflorescence and foliage in farmer's fields.
- ❖ Quiescent infection of Anthracnose (*Colletotrichum musae*) on banana fruits was moderate.
- ❖ Intensity of Leaf and fruit spot disease in pomegranate caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C.gloeosporioides*) was higher.
- ❖ Moderate intensity of leaf spot (*P. indica*) was noticed in sapota. .
- ❖ Incidence of watermelon bud necrosis in watermelon caused by Tospovirus was noticed up to 15%. This may be due to rise in temperature which is favourable for thrips multiplication and spread.
- ❖ Incidence of tomato leaf and disease up to 10% was noticed on tomato. This may be due to increase in temperature coupled with humidity which is favourable for whitefly multiplication and spread.
- ❖ The weather data of the last fortnight was suitable for the cultivation of oyster mushroom (*Pleurotus sp.*), Elm mushroom (*Hypsizygus ulmarius*) and Shiitake mushroom (*Lentinula edodes*). Additional heating was required for the cultivation of Milky mushroom (*Calocybe indica*) and Reishi mushroom (*Ganoderma lucidum*).

Remedial measures

Prophylactic sprays with recommended pesticides/ botanicals for control of above pests and diseases.

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

Period: 16th to 31st January, 2009

Latitude : 13°58' N

Longitude : 78° 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 1.30 PM			
16 th – 31 st January, 2009	28.3	12.1	60.0	40.6	5.1	4.34	Nil
	(29.2)	(14.0)	(70.8)	(50.6)	(4.4)	(4.58)	(Nil)

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

Fortnight from 16th to 31st January 2009

The average maximum and minimum temperatures during the second fortnight from January 16th to 31st 2009, were higher by 2.6°C and 2.5°C respectively compared to previous fortnight. The average maximum and minimum temperature values during the corresponding period for the previous five years were lower by 0.9°C and 1.9°C respectively. The percent relative humidity during morning and afternoon hours is lower by 10.0 and 4.5%, as compared to previous fortnight. There was no rainfall during the fortnight.

Crop weather situation

- ❖ Flowering in mango is continued during the fortnight and also delayed flowering.
- ❖ Farmers may mulch the basins of tree crops with available mulches to minimize evaporation. Moisture stress in banana, papaya and vegetables is likely to be observed.
- ❖ The weather is ideal for flowering in rose in open and poly house conditions.
- ❖ The weather is ideal for normal growth of carnation, tuberose, gerbera, gladiolus, jasmine, anthurium and redginger. In crossandra slow growth is observed and no flowering.
- ❖ Slow growth in french beans is expected under prevailing weather conditions.
- ❖ Weather is ideal for development and fruiting in watermelon.

Incidence of pests and diseases

Because of the prevailing weather conditions, the following pests infestation is either observed or forecast.

Diseases

- ❖ In pomegranate, the intensity of bacterial blight incidence is drastically reduced. Moderate intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) was recorded.
- ❖ Intensity of anthracnose was low on grape vines var. Anab - e- Shahi.
- ❖ In banana, intensity of *Macrophoma fruit* spot varied from moderate to severe on var. Grand Naine whereas Crown rot (*Botryodiplodia theobromae* and *Fusarium moniliforme*) and anthracnose

(*Colletotrichum musae*) of fruits recorded was moderate. Higher intensity of Sigatoka leaf spot (*Mycosphaerella* sp) (> 40%) was continued to be recorded.

- ❖ In guava, moderate levels anthracnose (*C. gloeosporioides*) and canker (*Pestatiopsis psidii*) in mature fruits (>30 %) were recorded.
- ❖ In sapota, low Intensity of Leaf spot (*P. indica*) was noticed.
- ❖ Incidence of watermelon budnecrosis virus upto 2.5% was noticed, as the dry weather is favourable for thrips multiplication and spread.
- ❖ In chilli, incidence of cucumber mosaic virus and chilli veinal mottle virus was noticed upto 25%. This may be due to increase in aphid vector population, which are favoured by weather conditions.
- ❖ In rose, powdery mildew occurs with increased severity during the period. The symptoms occur on young leaves as well as flower buds. Due to low night temperature and dew formation on the leaves downy mildew continues to be a problem until the end of January. The infection results in severe defoliation and drying up of flower buds. The flower buds infection is often mistaken as due to thrips infestation.

Insect pests

- ❖ With marginal increase in maximum temperature, reduced relative humidities coupled with zero rainfall prevailed during the last fortnight would favour increased incidence of sucking pests like mites, thrips, whiteflies, aphids, leaf hoppers on several vegetable (brinjal, chilli, onion, cucurbits) fruit (mango, pomegranate, grapes) and flower (rose, gladiolus, gerbera, chrysanthemum.) crops
- ❖ In rose, incidence of thrips, aphids in open field condition and, powdery mildew and thrips in poly house were noticed and will increase with temperature.
- ❖ Infestation of thrips, in gerbera under poly house open conditions, leaf eating caterpillars and mites in jasmine, stem borer in red ginger under open field and mealy bug in crossandra, bacterial wilt in anthurium was noticed and will increase with temperature.

Remedial measures

Prophylactic sprays with recommended pesticides/ botanicals for control of above pests and diseases.

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

Period: 1st to 15th January, 2009

Latitude : 13°58' N

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Fortnight	Temperature(°C)		Relative Humidity(%)		Evaporation (mm)	Wind speed (km/h)	Total Rainfall (mm)
	Average Max.	Average Min.	Average At 7.30AM	Average at 1.30 PM			
1 st – 15 th January, 2009	25.7 (27.4)	9.6 (13.3)	70.0 (73.3)	44.5 (48.9)	3.7 (4.0)	5.19 (4.72)	Nil (Nil)

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

Fortnight from 1st to 15th January, 2009

The average maximum and minimum temperatures during the first fortnight from January 1st to 15th, 2009, were lower by 0.7°C and 3.65°C respectively, as compared to the previous fortnight. The average maximum and minimum temperature values were lower by 1.7°C and 3.7°C as compared to the values of corresponding period for the previous five years. The percent relative humidity during morning and afternoon hours were higher by 5.8 and lower by 4.7 % respectively as compared to previous fortnight. There was no rainfall during the fortnight.

Crop weather situation

- ❖ Flowering in mango is continued during the fortnight also.
- ❖ Moisture stress in banana, papaya and vegetables is likely to be observed.
- ❖ The weather is ideal for flowering in rose in open and poly house conditions.
- ❖ The weather is ideal for normal growth of carnation, tuberose, gerbera, gladiolus and jasmine. In crossandra slow growth is observed.
- ❖ The weather is ideal for tomato, garden peas, onion, dolichos, cabbage and cauliflower.
- ❖ Slow growth in chilli and French beans is expected under prevailing weather conditions.
- ❖ Weather is ideal for development and fruiting in muskmelon and watermelon.

Incidence of pests and diseases

Because of the prevailing weather conditions the following pest incidence is either observed or forecast:

Diseases

- ❖ In pomegranate, the intensity of bacterial blight incidence is drastically reduced. Moderate intensity of leaf and fruit spot disease caused by *Pseudocercospora punicae* and anthracnose of fruit and leaf (*C. gloeosporioides*) was recorded.
- ❖ Intensity of anthracnose was low on grape vines var. Anab - e- Shahi.
- ❖ In banana, intensity of *Macrophoma fruit* spot varied from moderate to severe on var. Grand Naine

whereas Crown rot (*Botryodiplodia theobromae* and *Fusarium moniliforme*) and anthracnose (*Colletotrichum musae*) of fruits recorded was moderate. Higher intensity of Sigatoka leaf spot (*Mycosphaerella* sp) (> 40%) was continued to be recorded.

- ❖ In guava, moderate levels anthracnose (*C. gloeosporioides*) and canker (*Pestatiopsis psidii*) in mature fruits (>30 %) were recorded.
- ❖ In sapota, low Intensity of Leaf spot (*P. indica*) was noticed.
- ❖ Incidence of watermelon budnecrosis virus upto 2.5% was noticed, as the dry weather is favourable for thrips multiplication and spread.
- ❖ In chilli, incidence of cucumber mosaic virus and chilli veinal mottle virus was noticed upto 25%. This may be due to increase in aphid vector population, which are favoured by weather conditions.
- ❖ In rose, powdery mildew occurs with increased severity during the period. The symptoms occur on young leaves as well as flower buds. Due to low night temperature and dew formation on the leaves downy mildew continues to be a problem until the end of January. The infection results in severe defoliation and drying up of flower buds. The flower buds infection is often mistaken as due to thrips infestation.

Insect pests

- ❖ The moderate day temperature and relative humidity, coupled with decreased night temperatures and nil rainfall prevailed during the last fortnight, favors the incidence of pests like thrips, aphids and mites on chilli, onion, tomato, rose, china aster
- ❖ The weather factors would also favor incidence of mango hoppers.
- ❖ Under protected cultivation, sucking pests like thrips, whiteflies, mites may increase on rose, gerbera, chrysanthemum, carnation, capsicum and tomato.

Remedial measures

Prophylactic sprays of recommended pesticides/botanicals for control of above pests and diseases.