

## WEATHER DATA FOR THE PREVAILING WEEK

(Assumption: Fruit Pruning date- 15/04/2019)

### I. WEATHER DATA FOR THE PREVAILING WEEK

Thursday (30/05/2019) – Thursday (06/06/2019)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr)	R H%	
	Min	Max				Min	Max
<b>Nashik</b>	24-25	36-38	<b>No Rain</b>	Clear	11-22	25-39	76-82
<b>Pune</b>	24	36-39	<b>No Rain</b>	Clear	11-22	28-42	81-83
<b>Solapur</b>	27-29	39-43	<b>Solapur - Sat Drizzling</b> <b>Pandharpur, Kasegaon, Atpadi- Sun Drizzling</b>	Clear to Partly cloudy	10-18	15-26	39-64
<b>Sangli</b>	25	37-42	<b>Shetfal-Sun Drizzling</b>	Clear to Partly cloudy	14-24	17-35	79-82
<b>Bijapur</b>	26-28	39-43	<b>Bijapur, Tikota, Telsang-Sat Drizzling</b>	Clear to Partly cloudy	13-24	14-27	60-71
<b>Hyderabad</b>	28-29	40-43	<b>Hyderabad -Fri, Mon – Tue &amp; Next Thu Drizzling</b> <b>Zahirabad- Sat, Mon – Tue Drizzling</b> <b>Medchal- Sun, Tue, Thu</b>	Clear to Partly cloudy	08-17	20-31	59-72

Note: Above weather information is summary of weather forecasting given in following websites

<http://www.imd.gov.in/>, <http://wxmaps.org/pix/prec6.html>, <http://www.fallingrain.com/world/IN/>, <http://www.wunderground.com/>, <http://www.bbcweather.com-weather/1269750>, etc.

### II. a) Days after pruning:47

### b) Expected growth stage of the crop: - Early shoot growth/5-leaf stage

Expected pan evaporation: 7.5 to 11 mm

### III) Nutrient and Irrigation Management ( Dr A K Upadhyay)

#### 1. Shoot growth stage:

- a) Irrigation water < 1dS/m : apply irrigation through surface drip @ 10,200 to 11,560 L/acre per day during shoot growth stage for Nasik and Pune region; from 12,240 - 14,960 L/acre per day for Sangli, Solapur, Hyderabad and Bijapur region.

- b) Saline irrigation water (1.1 – 2.0 dS/m): apply irrigation through surface drip @ 12,750 to 14,450 L/acre per day during shoot growth stage for for Nasik and Pune region; from 15,300 – 18,700 L/acre per day for Sangli, Solapur, Hyderabad and Bijapur region.
  - c) In case of rains, donot irrigate if the soil is already at field capacity.
  - d) Mulching the vineyards during this period will reduce the salinity build up in the root zone due to upward movement of saline water from lower soil layer. This will also reduce the irrigation water requirement by another 10%.
2. **Fruit Bud Differentiation stage:** Apply irrigation through surface drip @ 5000 to 6000 L/acre per day during shoot growth stage for Nasik and Pune region and from 6000- 6500 L/acre per day for Sangli, Solapur, Hyderabad and Bijapur region.

### Foundation pruning season:

1. **At shoot growth stage**, apply 25 kg urea/ acre in 2 -3 splits after sprouting. In case of vigorous growth of shoots, stop nitrogen application and wait for the growth to stabilize before resuming nitrogen application. In calcareous soils, do not apply urea, instead use Ammonium sulphate @ 40 kg/acre in atleast 3 splits from sprouting onwards till next 10 days.
2. **In case irrigation water has more than 100ppm sodium and the soil available sodium levels are above 1000 ppm**, apply Sulphate of potash @ 40-50 kg/ acre during Shoot growth stage.
3. After **3-5 leaf stage**, apply magnesium sulphate, zinc sulphate and ferrous sulphate @ 20kg/acre in atleast 2 splits.
4. During **fruit bud differentiation stage**, based upon soil test values, apply 45 – 50 kg phosphoric acid or 250 kg SSP in case the soils are deficient in phosphorus. Phosphoric acid application is desirable in calcareous soils.
5. In case faster growth is observed (intermodal distance > 5 cm approx.), skip nitrogen application. Still the growth is not checked then reduce the irrigation water application.
6. **Possibility of leaf curling could be there.** Check the reasons whether excess growth or moisture stress or sucking pest injury or potassium deficiency. In case of excess growth, then follow the advise given in item no.3. For moisture stress, check whether the irrigation water is saline or quantity of water applied is less. If saline, then increase the quantity of irrigation water application to remove the salts. The sucking pest injury like hoppers has relationship with potassium build up in the vines and could lead to leaf curling. Control sucking pest and at the same time foliar application of potassium sulphate is advised to mitigate the potassium deficiency followed by application through fertigation @ 20-25 kg/acre.
7. At 45 DAP, **perform petiole test to know the nutrient content of the vines.** The petioles should be collected from 5<sup>th</sup> leaf from the base of the shoot counting the leaves even if they have been removed.
8. Keep a close watch on the development of **leaf blackening** symptoms from the margin.
9. Apply 10-15 kg Magnesium Sulphate/ acre between **50-60 days after pruning**. In calcareous soils, provide foliar application of Magnesium sulphate (@3g/L) followed by Sulphate of Potash (@ 4g/L) once in this growth stage.
10. Potassium application is required from **Cane maturity stage onwards**. Approx. 64 kg of sulphate of potash (soluble grade) should be applied in this stage. Split the application into atleast five doses to reduce the leaching losses of the potassium. Apply 15 kg SOP in two – three splits during this week. In calcareous soils, provide foliar application of Sulphate of Potash (@ 4g/L) once in this growth stage.

11. During **Cane maturity stage onwards**, apply magnesium sulphate @ 15 kg/acre in two splits. The application should be done during 60-75 days after pruning. In calcareous soils, provide foliar application of Magnesium sulphate (@3g/L) in this growth stage.

#### **IV. Requirement of growth regulators (Dr. S.D. Ramteke)**

This is the time to apply cytokinin and uracil to enhance the fruitfulness. Almost all the vineyards must have subcane system. When 3 leaves come after subcane the above chemicals have to be given twice or these chemicals have to be applied 40 days after pruning. Cytokinin (6 BA) has to be applied at 40 DAP (10 ppm) Likewise uracil has to be applied at 45 DAP (20ppm). These agrochemicals must be repeated once again in the same sequence so as to increase the bud fruitfulness.

#### **V. Canopy management (Dr. R.G. Somkuwar)**

##### **Old vineyard:**

In this vineyard, the sub cane development is completed and the shoot pinching is also completed. The start of cane maturity is the indication of controlled growth. This condition will support buildup of food material in the cane. However, increase in temperature above 43°C in the vineyard will lead to increased demand of water. Majority of grape vineyard are facing water shortage. Following corrective measures are suggested to enhance fruit bud differentiation and cane maturity.

- i) Control the shoot vigor by shoot pinching. This will help in advancing cane maturity and storage of food material.
- ii) Controlled vigor will support the storage of food material in the cane thereby reducing the chances of fillage during fruit pruning.
- iii) Remove side shoots to encourage open canopy for free air circulation. This will support for reduction in micro climate in the canopy and uniform distribution of spray solution.
- iv) Lower down the drip line in the bund. This will help in reduction of water loss.
- v) Use mulching on the bunds. The application of mulch either on bund or on the place of dripper will help in controlling the evaporation.
- vi) Irrigate the vine during morning or evening.
- vii) Spray antistress @ 3-4ml/litre water. This will help in reducing the water loss through transpiration.
- viii) Use shade net on opposite side of wind in the vineyard. This will help in reducing the wind speed thereby reducing the water loss.

## VI. Disease management (Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
47	NIL	LOW	LOW	-

As temperature is on the rise water spray may be given in plots where pruning has just taken place. In regions where early sprouting is present, application of fungicides like Hexaconazole @1ml/L or Tetraconazole @ 0.75 ml /L or Difenoconazole @1ml/L or Fluopyram 200+Tebuconazole 200SC @0.5ml/L may be given for the control of powdery mildew as well as to restrict excess vegetative growth and help in fruit bud differentiation. To protect from anthracnose, a prophylactic spray with thiophenate methyl may be given @1g/L of water.

**VII. Insect and Mite management. (Dr. D.S. Yadav)**

Days after pruning	Risk of pests					
	Mealybug	Mite	Thrips	Caterpillar	Flea beetle	Stem borer ( <i>Stromatium barbatum</i> )
Early shoot growth/5-leaf stage	High	Moderate	High	High	Low	Very high

- Adults of stem borer *Stromatium barbatum* start emerging during the last week of May to first fortnight of June. Installation of light traps will be helpful in monitoring the initiation of emergence of stem borer adults. Run the light traps for 3 hours daily, during evening between 7.00 pm – 10.00 pm and destroy the collected beetles in water mixed with insecticide. If adult stem borers are noticed, application of fipronil 80 WG @ 0.06 g/litre, lambda cyhalothrin 5 CS @ 0.5 ml/litre or imidacloprid 17.8 SL @ 0.3 ml/litre water may be given directed at main stem and cordons during night. Follow the following link for detailed information on youtube video <https://www.youtube.com/watch?v=Yvx7dIbPEAU>
- Spraying of imidacloprid 17.8 SL @ 0.4 ml per litre water will help in controlling thrips and mealybug on new growth.
- In case of thrips or caterpillar infestation, application of fipronil 80 WG @ 0.0625 g per litre or emamectin benzoate 5 SG @ 0.22 g per litre water is effective.
- Mite infestation may start appearing, therefore, monitor the vineyards carefully. If mite infestation is observed, sulphur 80 WDG @ 1.5-2.0 gram per litre water is effective.

