मौसम पूर्वानुमान आधारित साप्ताहिक सलाह

Weather Forecast Based Weekly Advisory

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

I. Weather Data for the Prevailing Week

Thursday (09/05/2019) – Thursday (16/05/2019)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr)	R H%	
	Min	Max				Min	Max
Nashik	22-23	36-38	**No Rain**	Partly cloudy to Clear	07-20	24-32	81-84
Pune	22-23	36-38	**No Rain**	Clear	07-17	22-34	81-84
Solapur	26-28	39-40	**Latur, Pangri** Drizzling Sun-Mon **Ausa, Vairag** Drizzling Mon **Barshi** Drizzling Sat & Mon	Clear	07-17	18-23	45-50
Sangli	23-25	38-40	**Sangli, Kagwad, Shirguppi** Drizzling Mon	Clear	08-19	20-22	69-73
Bijapur	26-28	39-40	**No Rain**	Clear	10-22	17-21	49-55
Hyderabad	27-28	40-42	**Medchal & Zahirabad** Drizzling Sun	Clear	05-19	18-30	39-62

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: 26

b) Expected growth stage of the crop: - Very early pruning stage

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

Expected pan evaporation: 8.5 to 11 mm

Amount of irrigation advised:

a) Irrigation water < 1dS/m : apply irrigation through surface drip @ 11,560 to 13,600 L/acre per day during shoot growth stage for Nasik and Pune region; from 12,240 - 13,600 L/acre per day for Sangli Solapur and Bijapur region; from 12,920 – 14,960 L/acre per day for Hyderabad region.

b) Saline irrigation water (1.1 – 2.0 dS/m): apply irrigation through surface drip @ 14,450 to 17,000 L/acre per day during shoot growth stage for for Nasik and Pune region; from 15,300 - 16,150 L/acre per day for Sangli Solapur and Bijapur region and from 16,150 – 18,700 L/acre per day for Hyderabad 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%.

1. **Fruit Bud Differentiation stage:** Apply irrigation through surface drip @ 5500 to 6000 L/acre per day during shoot growth stage for Nasik and Pune region and from 6000- 6500 L/acre per day for Solapur, Bijapur and Hyderabad region.

2. In case there is **probability of less irrigation water availability**, then flood the bund (not whole vineyard) at pruning and mulch the bunds. Flooding the bund will reduce the accumulated salt load in the root zone and mulching will reduce the evaporation of water from soil surface. Thus, this will reduce the salt load in the soil and at the same time saturate the soil leading to proper sprouting. Further, in case less irrigation water is available still the newly emerging shoots will not be damaged due to salinity.

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, donot 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 5th 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.

V. Requirement of growth regulators (Dr. S.D. Ramteke)

Nil.

VI. Canopy management (Dr. R.G. Somkuwar)

During the coming week, the temperature in Nashik and Pune region is expected to be below 38°C while in Solapur and Sangli, it will be around 40°C with increased relative humidity upto 32% (minimum) to 84% (maximum in these region. The reduction in temperature may help to reduce the wind speed thereby reducing the water requirement. This condition may help for good vigor of vine. Considering these, the management practices to be followed under different growth stages are given below.

1. **Early pruned vineyard:**In the grape growing areas of Indapur and Satana, the foundation pruning is initiated during February month. In these gardens, the sub cane development is completed. The canopy is becoming dense and the shoot is also turning milky white from pink colour indicating the shoot towards maturity. The fruit bud differentiation is also at the stage of completion. With the reduction in temperature and cloudiness, these vineyards may experiences powdery mildew infestation. Hence, removal of 2-3 basal leaf on a shoot, removal of extra side shoots and also excess growth will help to reduce the microclimate required for the buildup of powdery mildew.

Application of potassic fertilizers will help to advance the cane maturity as well as strong cane with good reserve of food material thereby reducing the chances of diseases.

2. **Timely pruned vineyard:**

   Considering the weather, in these vineyards may show different stages like bud sprouting to 6-7 leaf stage. The bud sprouting was complete in some part of the cordons, however, some buds are still sprouting. Under such condition, water spray will help to increase the relative humidity thereby increasing the chances of complete and uniform sprouting.

   Water requirements to be considered as important factors during fruit bud differentiation. Under the condition of high vigor, application of phosphorous and potassic grade fertilizer either through soil or spray will help to control the vigor.

3. **Vineyard in framework development stage:**

   The cordon development stage is in progress with few shoots on each cordon. Majority of grape growers are using excess plant growth regulators required for fruit bud differentiation. In addition, excess or flood irrigation is also being applied. This disturbs the balance between PGR and physiological activities of a vine. Hence, avoid the flood irrigation and excess use of PGR in these gardens.

VII. Disease management (Dr. Sujoy Saha)

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

There is no major concern for diseases as rains are not forecasted. 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
3-4 leaves stage after foundation pruning	HIGH	NIL	HIGH	LOW	LOW

- Spraying of imidacloprid 17.8 SL @ 0.4 ml per litre water will help in controlling thrips and mealybug on new growth.

- If thrips population is very high, application of fipronil 80 WG @ 0.0625 g per litre or emamectin benzoate 5 SG @ 0.22 g per litre water may be given.

Crop advisory relevant to different places is prepared by experts, considering forecasted weather, crop growth stages in majority of vineyards and ground information on incidence of different conditions in different grape growing areas received from regular interaction with progressive grape growers. No claims are made on its correctness.

Usefulness of this information may be communicated to us at director.nrcg@icar.gov.in.