

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 (25/04/2019) -- Thursday (02/05/2019)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr)	R H%	
	Min	Max				Min	Max
Nashik	23-29	38-43	No Rain	Partly cloudy to Clear	06-18	12-18	27-64
Pune	23-28	38-44	No Rain	Partly cloudy to Clear	05-25	13-23	32-69
Solapur	26-30	39-43	Latur, Ausa Wed-Thu Drizzling	Partly to Mostly cloudy	06-13	14-24	34-56
Sangli	24-27	39-42	Khanapur Wed-Thu Drizzling	Partly cloudy	09-15	17-23	57-69
Bijapur	27-29	39-42	Bijapur, Tikota Wed- Light Rain, Thu- Drizzling Chadchan Thu- Drizzling	Partly to Mostly cloudy	08-18	15-23	41-55
Hyderabad	24-26	36-42	Zahirabad, Hyderabad, Medchal Tue- Drizzling	Partly cloudy to Clear	09-18	22-29	56-91

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: 10

b) Expected growth stage of the crop: - Post harvest resting / very early pruning stage

III. Water management (Dr. A.K. Upadhyay)

Expected pan evaporation: 8.5 to 10 mm

Amount of irrigation advised:

1. **Rest period:** Provide only need based irrigation to protect the existing leaves from drying and also contribute towards increasing the reserves of the vines through photosynthetic activity. The quantum of irrigation water applied should be approx. 5000 L/ acre, twice in a week. Care should be taken to reduce/stop the water in case new growth is observed on the shoot.
2. **Shoot growth stage:**
 - 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, Pune, Sangli and Hyderabad region and from 12,240 - 13,600 L/acre per day for Solapur and Bijapur 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 Nasik, Pune, Sangli and Hyderabad region and from 15,300 - 17,000 L/acre per day for Solapur and Bijapur region.
 - c) 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%.
3. **Fruit Bud Differentiation stage:** Apply irrigation through surface drip @ 5500 to 6000 L/acre per day during shoot growth stage for Nasik, Pune, Sangli and Hyderabad region and from 6000- 6500 L/acre per day for Solapur and Bijapur region.
4. 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.
5. **Cover the cordons of the pruned vines with shadenet**, if available, for uniform sprouting as well as reducing the irrigation water needs by 20-25 %. Shadenet coverage will reduce the temperature impact on the cordons. However, remove shadenet after 3-5 leaf stage.
6. If shadenet is not available, spray the cordons with water during the peak heat period i.e. 2-3 pm to reduce the heat effect on the buds.

IV. Soil and Nutrient requirement (Dr. A.K. Upadhyay)

Rest period to Foundation pruning:

1. Before pruning, test the vineyard soil and irrigation water to plan for soil, nutrient and water management.
2. Apply 10kg Urea, 10 kg DAP and 10 kg Sulphate of Potash/ acre in two splits every 15-20 days.
3. The vineyards where sodicity problems are there, apply gypsum to the soil for removal of sodium from the soil exchange complex. In case of calcareous soils, use sulphur for similar purpose.

Foundation pruning season:

1. Apply FYM/ compost/other organic sources including green manuring atleast 12-15 days before Foundation pruning. If possible mix 200 kg Single super phosphate in the FYM and apply in the soil. Application of organics improves the nutrient and water retention in the root zone and reduces nutrient losses from the profile.
2. If soils are calcareous in nature, then apply 50 kg sulphur between the vines in the soil. The sulphur should be properly mixed in the soil for improving its efficacy in taking care of calcium carbonates. Mixing of sulphur in organics lead to better utilization of sulphur for reducing calcium carbonate in the root zone along with reduction in soil pH also.
3. 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.
4. **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.
5. After **3-5 leaf stage**, apply magnesium sulphate, zinc sulphate and ferrous sulphate @ 20kg/acre in atleast 2 splits.
6. 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.
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 grape vineyard is expected to cross 45°C while the relative humidity in the atmosphere will be reduced to 20%. This will create the problem of bud sprouting after foundation pruning and shoot growth after the sprouting. Under these conditions, following measures are suggested.

- 1) In the pruned vineyards, water sprays twice in a day (11.0am to 12.pm and 2.0 to 4.0pm) will help to increase the relative humidity and reduce the temperature near the sprouting buds. The bud sprout will be easy even under high temperature.
- 2) Covering the vines by shade net or wrapping the cordon by gunny cloth or by newspaper will help for easy bud sprouts.
- 3) Irrigation in the vineyard during early morning or evening will help to reduce the evaporation losses from the root zone.
- 4) Use of mulch on the bund will support to reduce the evaporation losses and conserve the moisture. The root development will also be better under this condition.
- 5) Maintain the canopy based on the availability of irrigation.

VII. Disease management (Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthraco nose	Others (specify)
10	Nil	Nil	Low	Bacterial spot

Wherever pruning is complete, the arms are exposed to hot sun and as they are exposed to direct sunlight, their temperature increases to 50-52⁰ C. It is advised to spray water around 1-2pm in the afternoon to protect the arms from excess heat as well as to ensure uniform sprouting. Early sprouting will provide the necessary shade to the arms. Precaution should be taken that arms do not dry up or otherwise borers might get attracted towards them. In areas where pruning is done application of Mancozeb @ 2g/L + Thiophenate methyl @ 1g/L may be done to control bacterial spot and anthracnose diseases.

VIII. Insect and Mite management. (Dr. D.S. Yadav)

Days after pruning	Risk of pests				
	Mealybug	Mite	Thrips	Caterpillar	Flea beetle
Just after foundation pruning	High	Nil	Nil	Nil	Low
Sprouting stage	High	Nil	Low to moderate	Low	Moderate

- Spot plant wash with buprofezin 25 SC @ 1.25 ml per litre water with 1.5-2.0 litre water per plant.
- Preventive spray of imidacloprid 17.8 SL @ 0.4 ml per litre water will help in controlling flea beetle, thrips and mealybug on new sprouts

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.