

WEATHER DATA FOR THE PREVAILING WEEK

Date of foundation pruning: 15/04/2020

Wednesday (15/4/2020) – Wednesday (22/4/2020)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	22-25	38-40	No Rain	Clear to Partly Cloudy	2-19	15-20	49-75
Pune	22-25	38-39	No Rain	Clear to Partly Cloudy	2-19	18-21	53-82
Solapur	27-29	40-41	Solapur, Nanaj, Kati, Osmanabad, Tuljapur, Latur, Ausa, Pandharpur Mon- Drizzling.	Clear to Partly Cloudy	4-15	16-19	43-59
Sangli	23-25	38-40	Shetphal Mon- Drizzling.	Clear to Partly Cloudy	3-16	18-26	65-84
Bijapur	25-27	38-39	Bijapur, Tikota, Telsang, Chadchan Sun & Mon- Drizzling.	Clear to Partly Cloudy	6-17	18-25	43-69
Hyderabad	25-26	37-39	Hyderabad, Zahirabad, Medchal Sat to Mon- Light Rain.	Clear to Partly Cloudy	2-12	23-37	54-79

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: - zero days

b) Expected growth stage of the crop: Rest period

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

Water management

Expected pan evaporation: 8.5 to 11.0 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. 7000 – 7500 L/ acre, once in a week. Care should be taken to reduce/stop the water in case new growth is observed on the shoot.
2. **Cover the cordons of the pruned vines with shade net** (if available) for uniform sprouting as well as reducing the irrigation water needs by 20-25%. Shade net coverage will reduce the temperature impact on the cordons. However, remove shade net at 3-5 leaf stage.
3. If shade net 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.
4. **Shoot growth stage:**
 - a) Irrigation water < 1dS/m: Apply irrigation through surface drip @ 11,560 to 14,960 L/acre per day during shoot growth stage.
 - b) Saline irrigation water (1.1 – 2.5 dS/m): Apply irrigation through surface drip @ 14,450 to 18,700 L/acre per day during shoot growth stage.
 - c) Mulching the vineyards during this period will reduce the salinity build up in the root zone as there will be no evaporation from the soil surface. This will also reduce the irrigation water requirement by another 10%.
 - d) In case the shoot growth is vigorous, reduce irrigation water till growth is controlled.
 - e) If the soil is at field capacity (wapsa condition), then withhold irrigation water application till such time, the soil moisture content comes below field capacity (wapsa).
5. 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.
6. **Fruit Bud Differentiation stage:** Apply irrigation through surface drip @ 6000 to 7000 L/acre per day.

7. For fruit bud differentiation stage, stress needs to be given. In clayey soil as the water holding capacity is higher, please note that stress needs to be imposed early else fruitfulness will be affected.
8. Flooding the vineyard is not advised as it will lead to wastage of water. Concentrate irrigation water application in the root zone only.

Nutrient Management

Pre- Pruning Practices

1. If planning for foundation pruning in next 10- 15 days, it is advised to get soil and water analysed for planning nutrient and water application schedule for foundation pruning season.
2. The vineyards with sodicity problems, apply gypsum to the soil for removal of sodium from the soil exchange complex. In case of the sodic soils are calcareous also, use sulphur for similar purpose.
3. 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 further improves its efficacy.
4. Apply FYM/ compost/other organic sources including green manuring at least 12-15 days before foundation pruning. Application of organics improves the nutrient and water retention in the root zone and reduces nutrient losses from the profile. If possible mix 200 kg single super phosphate in the FYM and apply in the soil.
5. Never apply water soluble fertilisers like urea, ammonium sulphate etc. as basal, as they will be leached and contaminate the ground water. They should be applied only from sprouting onwards.

Foundation pruning season:

1. **At shoot growth stage**, apply 25 kg urea/ acre in 2 -3 splits after sprouting. In calcareous soils, do not apply urea, instead use Ammonium sulphate @ 40 kg/acre in at least 3 splits from sprouting onwards till next 10 days. Apply as per need only.
2. In case of vigorous growth of shoots, stop nitrogen application and wait for the growth to stabilize before resuming nitrogen application.
3. Based upon soil test value, apply Zinc sulphate @10 kg/acre along with Ferrous sulphate @10kg/acre followed by Magnesium sulphate @15kg/acre in at least 2 splits during 5-7 leaf stage. Boron application should be strictly based upon soil and petiole test.
4. In calcareous soils, spray magnesium sulphate and potassium sulphate @2 gm each/ L during active growing stage.
5. **During fruit bud differentiation stage**, based upon soil test values, apply 20 – 25 kg phosphoric acid or 150 kg SSP in case the soils are deficient in phosphorus. Phosphoric acid application is desirable in calcareous soils.
6. 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.

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

Nil

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

In the grape vineyard, following operations are suggested:

Old vineyard:

- 1) Pre-pruning practices are to be taken on priority before foundation pruning. This will include cutting the bud, opening the trench and application of farm yard manure (FYM).
- 2) Care should be taken that more than 30% roots are not damaged while trench opening.
- 3) After the application of FYM and other nutrients, cover the trench immediately with soil.
- 4) Covering the bund immediately will avoid the drying of roots since the temperature during this period is exceeding 40°C while relative humidity will be less than 30%.
- 5) Irrigate the vine immediately after closing the trench. This will avoid dead arm of the cordon.
- 6) Application of hydrogen cyanamide with minimum dose (20 to 25 ml/L) will be required for early and uniform bud sprouts.
- 7) In case of non-availability of bud breaking chemical, regular water spray on the cordon twice in a day (11.0 am to 12.30pm and 2.0 pm to 4.0 pm) from 5th to 15th day from foundation pruning can be done. This will help to increase relative humidity and reduce the temperature in the vineyard thereby enhancing early and uniform bud sprout.
- 8) During the first week of foundation pruning, irrigate the root zone with sufficient water till wafsa condition. This will help to development white roots required for uptake of nutrients and water supplied through the soil.
- 9) During bud swelling stage, flea beetle will become a major threat due to increase in atmospheric temperature. Hence, regular spray of insecticide to be taken.

Vineyard at framework development stage:

- 1) During the process of trunk and cordon development, sufficient irrigation and nutrient (nitrogen and phosphorous) is required to the vine. This will support for vegetative growth which can be utilized for increase in inter nodal length. The vigor of vine also helps in obtaining thick shoots diameter (trunk and cordon).
- 2) The increase in inter nodal length will help to reduce the cost of labour requirement for shoot thinning after foundation pruning in the later year.
- 3) The new growth may show symptoms of either potash deficiency or thrips infection. The potash deficiency may be seen on older leaves while thrips infestation on younger leaf (in general). Considering the present position in the vineyard, application of potash or thrips control may be given priority.
- 4) In the case of shortage of reduced irrigation water in the vineyard, use of mulching may be given priority.

VI. Disease management (Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
-	Nil	Nil	Very low	nil

In very early pruned vines, there is a chance of incidence of anthracnose in early shoots or if there is a chance existence of inoculum in the old, improperly pruned canes. Drizzles in these areas can trigger both anthracnose as well as bacterial leaf spot. Hence, application of Carbendazim 12% + Mancozeb 63% @ 2 gm / liter should be done in these areas which control both anthracnose and bacterial leaf spot. Carbendazim will take care of anthracnose while mancozeb will control bacterial leaf spot. A new registered fungicide, Kasugamycin + Copper oxychloride @ 2.5 g/Litre may be applied for the control of both. In areas where pruning is to be taken up in the coming weeks, clean cultivation practices need to be followed. After pruning, the pruned material should be disposed in a pit, away from the vines. This will reduce the primary inoculum of downy mildew diseases, if any (keeping into consideration the heavy incidence of downy mildew last season). Immediately, after pruning, the

cordon has to be washed/ drenched with Mancozeb @2.5 – 3 g/ liter water followed by Sulphur @ 2g/ liter after 7 days. This will also clear the downy mildew inoculum from the cordons.

In case of raisin making, due to improper drying/ lack of sunlight, the raisin may become black. The blackening of raisin might be due to fungal / saprophytic contamination. To control this, application of hydrogen peroxide @ 2-3 ml/ liter of water or chlorine dioxide@ 50-100 ppm may be done. Dipping of raisins in chlorine dioxide in 50-100 ppm solution might also be done instead of spraying.

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

Days after pruning	Risk of pests				
	Mealybug	Mite	Thrips/leafhopper	Caterpillar	Flea beetle
>165 days after fruit pruning Stage: Vine resting stage after harvest	High	High	Low	Nil	Nil
Just after foundation pruning to sprouting	Moderate	Nil	Moderate	Nil	Moderate to High

- Spot plant wash with Buprofezin 25 SC @ 1.25 ml per litre water with 1.5-2.0 litre water per plant.
- Sulphur 80 WDG @ 1.5-2.0 g/L or abamectin 1.9% EC @ 0.75 ml/L water may be applied if mite infestation is observed at vine resting stage after harvest.
- For flea beetle management after foundation pruning, spray Imidacloprid 17.8 SL @ 0.4 ml per litre or Fipronil 80 WG @ 0.06 g per litre or Lambda cyhalothrin 4.9 CS @ 0.5 ml per litre water during early morning hours. If that is not found sufficient to manage flea beetle, give soil drenching of Imidacloprid 17.8 SL @ 1.5 ml per vine also.