

WEATHER DATA FOR THE PREVAILING WEEK

Date of foundation pruning: 15/04/2020

Wednesday(29/4/2020)– Wednesday (6/5/2020)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	23-24	38-39	No Rain.	Clear to Partly Cloudy	2-21	18-25	59-87
Pune	23-25	37-39	Pune Wed- Light rain. Thu- Drizzling. Phursungi Wed- Moderate rain. Thu- Drizzling. Loni kalbhor, Uruli Kanchan Wed & Fri- Drizzling. Yavat, Patas, Supa, Baramati Fri- Drizzling. Narayangaon, Junnar Thu- Drizzling.	Clear to Partly Cloudy	4-21	24-31	70-87
Solapur	28-30	40-43	Kasegaon Wed- Light rain. Thu- Drizzling.	Clear to Partly Cloudy	5-19	17-25	41-64
Sangli	24-26	36-40	Sangli Thu & Fri- Drizzling. Palus, Valva, Palsi Wed & Thu- Drizzling. Miraj, Shirguppi, Kagwad, Arag Thu- Drizzling.	Clear to Partly Cloudy	4-21	20-36	71-86
Bijapur	26-29	38-41	No Rain.	Clear to Partly Cloudy	6-19	17-26	50-75
Hyderabad	26-28	37-41	Hyderabad, Medchal Sat to Next Wed- Drizzling. Zahirabad Next Wed- Drizzling.	Partly Cloudy to Mostly Cloudy	3-13	25-36	58-78

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: - 14 days

b) Expected growth stage of the crop: 3-5 leaf stage

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

Water management

Expected pan evaporation: 7.5 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. 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 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 at 3-5 leaf stage.
3. 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.
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. **Shoot growth stage:**
 - a) Irrigation water < 1dS/m : apply irrigation through surface drip @ 10,200 to 12,240 L/acre per day for Nasik, Pune and Sangli region and from 11,560 to 13,600 L/acre per day for Solapur, Bijapur and Hyderabad regions..
 - b) Saline irrigation water (1.1 – 2.5 dS/m): apply irrigation through surface drip @ 12,750 to 15,300 L/acre per day for Nasik, Pune and Sangli region and from 14450 to 17,000 L/acre per day for Solapur, Bijapur and Hyderabad regions.
 - 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 application 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).
6. **Fruit Bud Differentiation stage:** Apply irrigation through surface drip @ 6000 to 6500 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 leads 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 where sodicity problems are there, apply gypsum to the soil for removal of sodium from the soil exchange complex. In case the sodic soils are calcareous also, use sulphur for similar purpose. Always apply FYM along with them and mix in the soil.
3. If soils are calcareous in nature, then apply 50 kg sulphur per acre between the vines in the soil. Before application, it should be mixed with organics to improve its efficacy. The sulphur should be properly mixed in the soil.
4. Apply FYM/ compost/other organic sources 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 100 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 leached and contaminate the ground water. They should be applied only from sprouting onwards.
6. As the soils are alkaline in reaction with pH exceeding 7.4, during foundation pruning season plan for fertilizers with high acidifying potential for better utilization of the nutrients.

Foundation pruning season:

1. **At shoot growth stage**, apply 25 kg urea/ acre in 2 -3 splits after sprouting. In calcareous soils, donot 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 test.
4. In calcareous soils, spray magnesium sulphate and potassium sulphate @2 gm each/ L once only 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. Do not apply beyond this until and unless the soil and petiole tests show low phosphorus availability.
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 even counting the leaves that have been removed.
7. Apply Magnesium sulphate @ 15kg/ acre in at least 2 splits from 45 to 55 DAP.
8. In calcareous soils, spray magnesium sulphate and potassium sulphate @ 3 gm each/ L once only during 45 to 55 DAP.

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

1. Do not use CCC for reducing shoot growth.
2. Do not use other alternatives like cultar, propiconazole, or ethrel for the above purpose
3. Shoot growth can be controlled with irrigation management.

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

New vineyard:

In these vineyards, the framework development (trunk and cordon development) is in process. The increase in maximum temperature will have adverse effect on vine development. Under this situation, the developing vine will start drying suddenly. Following changes will be observed in these vineyards.

- 1) The vineyards at the stage of framework development only will show the symptoms of sudden vine drying problem.
- 2) Initially, few leaves are drying and within a short period of 1-2 days, complete vine dries off. These problems are common in the first year vineyard when the temperature starts suddenly rising.
- 3) In the vineyard with excess irrigation water application will be severely affected. Around 5-6 vines in one acre will suffer with this problem.
- 4) The problem will be more in black soil as compared to the light soil.
- 5) The bark just near the soil surface will be blackish and wet with watery ooze suspecting fungal infection.
- 6) The uprooted roots will be black in colour indicating the disruption of water and food supply to the growing shoots.

During the last year this problem was identified in the vineyard of Mr. Dattatray Nilkantrao Patil of Aagalgaon village in Kawathe Mahakal taluka. Based on the problem identified, the following suggestions were given:

- 1) Drenching of Carbendazim @ 1.5g + Imidachloprid 17.8SL @ 1.5ml/litre water in the collar region.
- 2) Repeat the same drenching on third day under severe condition only, otherwise, drenching of hexaconazole @ 1.0 ml/litre water in the collar region after 3 days of first drenching.
- 3) The drenching of solution on collar region by hand was found more effective than drenching through drip.
- 4) In the beginning, drenching of solution on selected vine by hand can be done while on dose through drip in entire vineyard will help to control further spread.
- 5) After the control of present problem, drenching the vines with 2-3 litre Trichoderma per acre.
- 6) No pinching of shoots for a week and allow to grow.
- 7) Apply urea @ 1.5 to 2.0 kg/acre through drip only once to initiate the vigor.

Old Vineyard:

In the vineyards where harvesting was delayed, the delayed foundation pruning may lead to adverse effect on fruit bud differentiation in the coming season. Following conditions and possible measures are suggested for these vineyard.

- 1) Normally from the date of forward pruning, 140-150 days required for fruit harvest. However, under today's condition, the period of fruit retention on vine has exceeded than 160 days thus leading the vine into stress.
- 2) After the foundation pruning, the vine must be out of stress. Hence, though the pruning is getting delayed, the rest period should be at least of 8-10 days.
- 3) During this period, irrigation and nutrition should be around 10% extra than the regular dose. This will help the vine to recoup fast and sap flow in trunk and cordon will be maintained.
- 4) Pruning on cordon leaving single bud to be taken up.
- 5) For uniform and early bud sprout, water spray on cordon twice in a day, shade on cordon and application of hydrogen cyanamide with minimum concentration either by spray or swabbing will help.
- 6) After the bund breaking, the roots might have been exposed to bright sunlight. The trench must be closed immediately after application of FYM and other recommended nutrients. This will help in formation of new feeder roots and control the dead arms on the cordon.

VI. Disease management (Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)

14	Nil	Nil	Very low	nil
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Drizzles in early pruned areas can trigger both anthracnose as well as bacterial leaf spot. Hence, application of carbendazim 12% + mancozeb 63% @ 2 gm / litre or Kasugamycin 5% + Copper oxychloride 45% @ 2.5 g/Litre may be applied for the control of both. Immediately, after pruning, the cordon, has to be washed/drenched with mancozeb @2.5 – 3 g/ liter followed by sulphur @ 2g/ liter after 7 days. This will also clear the downy mildew inoculum from the cordons. In case of early sprouting, spray of copper hydroxide@1.5g/litre or 0.5% Bordeaux mixture may be given. Drip application of Trichoderma may be given in areas where there is slight drizzle which will enable the BCA to multiply. Non uniform sprouting may be prevented.

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

For flea beetle management, 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 doesn't work give soil drenching of imidacloprid 17.8 SL @ 1.5 ml per vine also. Spray imidacloprid 17.8 SL @ 0.4 ml per litre water if mealybug shoot malformation is observed on new shoots.

For thrips management, spray emamectin benzoate 5 SG@ 0.22 g per litre or fipronil 80 WG @ 0.06 g per litre or cyantraniliprole 10 OD @ 0.7 ml per litre water.

In case the infestation of white grubs is noticed on roots of new grape plants, soil drenching of imidacloprid 17.8 SL @ 1.5 ml per vine may be given.