WEATHER DATA FOR THE PREVAILING WEEK

Date of Foundation Pruning: 15/04/2021

Wednesday (05/05/2021)–Wednesday (12/05/2021)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	21-24	34-37	**Nashik, Dindori, Ozar, Palkhed, , Vani, Loni, Pimpalgaon Baswant, Niphad, Shirdi, Devla, Kalwan** Fri- Moderate Rain. Sat & Mon- Drizzling.	Clear to Partly Cloudy	3-17	21-29	58-84
Pune	19-22	35-37	**Pune, Phursungi, Loni Kalbhor, Uruli Kanchan, Patas, Yavat, Supa, Narayangaon, Junnar, Baramati** Fri- Good Rain. Sat- Light Rain. Sun- Moderate Rain.	Clear to Partly Cloudy	2-15	25-32	58-73
Solapur	19-23	35-39	**Solapur, Vairag, Nannaj, Kati, Pangri, Osmanabad, Kasegaon, Atpadi, Latur, Ausa, Tuljapur, Barshi, Pandharpur** Fri to Sun- Moderate Rain.	Clear to Partly Cloudy	4-12	22-41	39-55
Sangli	21-24	33-37	**Sangli,Kagvad, Shetfal, Palsi, Palus, Khanapur, Vita, Tasgaon, Shirguppi, Arag, Miraj, Walva, Kawthe Mahakal** Sat to Tue- Light Rain.	Clear to Partly Cloudy	5-13	23-40	58-71
Vijayapura	19-22	35-38	**Vijayapura, Chadchan**, **Tikota, Telsang** Fri & Sat- Good Rain. Sun & Tue- Light Rain. Mon- Moderate Rain.	Clear to Partly Cloudy	3-12	27-42	57-70
Hyderabad	23-25	35-38	**Hyderabad, Medchal, Zahirabad** Fri & Sun to Mon- Light Rain.	Clear to Partly Cloudy	5-14	22-32	48-60
Satara	21-24	35-37	**Satara, Khatav, Man, Phaltan** Fri & Sat- Good Rain. Sun- Light Rain.	Clear to Partly Cloudy	3-15	31-40	65-79
Ahmednagar	21-24	35-39	**Ahmednagar,Nagar, amkhed,Sangamner, Shrigonda, Karjat, Akole,Kopargaon, Rahata** Fri & Sat- Light Rain. Tue- Drizzling.	Clear to Partly Cloudy	5-18	20-29	37-53
Jalna	23-25	36-39	**Jalna, Jafrabad, Mantha, Ambad, Gansawangi** Mon & Tue- Drizzling.	Clear to Partly Cloudy	2-11	18-22	27-44
Buldhana	23-25	38-40	**Buldana, Chikhli, D.raja, Sindkhedraja** Fri to Tue- Light Rain.	Clear to Partly	4-11	18-24	32-38

				Cloudy			
Kolhapur	25-27	31-36	**Gagan-bavada, Kagal, Karveer** Fri & Mon- Drizzling. Sat- Good Rain. Sun- Moderate Rain.	Clear to Partly Cloudy	5-15	32-40	75-93
Bengaluru Rural	21-23	33-35	**Bangaluru-east, Bangaluru-north, Bangaluru-south, Doddaballapur, Anekal** Fri to Sun- Light Rain. Tue- Moderate Rain.	Clear to Partly Cloudy	3-11	28-40	66-71
Belagavi	22-24	35-37	**Belagavi, Athni,Chikodi, Gokak, Khanapur** Fri & Sat- Moderate Rain. Sun- Drizzling. Mon & Tue- Good Rain.	Clear to Partly Cloudy	5-18	37-40	72-86
Bidar	20-24	34-39	**Bidar, Basavakalyan, Humnabad** Fri- Good Rain. Sat to Tue- Light Rain.	Clear to Partly Cloudy	3-14	26-30	43-54
Bagalkot	23-25	35-37	**Bagalkot, Bilagi, Badami, Hungund, Jamkhandi, Mudhol** Fri & Tue- Good Rain. Sat to Mon- Light Rain.	Clear to Partly Cloudy	5-17	25-36	55-65

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

https://www.wunderground.com/?cm_ven=cgi

https://imdagrimet.gov.in/weatherdata/BlockWindow.php

https://www.accuweather.com/

ICAR-National Research Centre for Grapes does not claim accuracy of it.

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

a) **Days after foundation pruning: 21**
b) **Pan evaporation: 8 to 10mm.**

1. After foundation pruning, during shoot growth stage, apply 13,600 – 17,000 L/acre per day of irrigation water. If EC of the irrigation water is less than 1 dS/m, then apply 10,880 – 13,600 L/acre per day.
2. In case vigour is more than desired, then reduce irrigation water application to 6,800 – 8,500 L/ acre. Still if you are not able to control the vigour, stop irrigation till such time growth is controlled.
3. **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. 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. In case the soil is under wapsa (field capacity) condition, donot irrigate the vineyard.
6. During fruit bud differentiation stage, shoot vigour to be controlled and hence, the irrigation water applied should be from 5000 to 6000 L/ acre/ 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. Practice mulching to keep the bunds moistened. This will reduce the salinity build up in the root zone due to evaporation of the moisture from the surface of the bund.
9. Flooding the vineyard is not advised as it will lead to wastage of water. Concentrate irrigation water application in the root zone only.

Shoot growth stage

1. Apply 50 kg urea/ acre in 5-6 splits after sprouting. In calcareous soils, donot apply urea, instead use Ammonium sulphate @ 85 kg/acre in atleast 7-8 splits from sprouting onwards.
2. In case of vigorous growth of shoots, stop nitrogen application and wait for the growth to stabilize before resuming nitrogen application. If still the growth continues, then reduce irrigation. Then resume when growth is maintained at desired level.
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 atleast 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. Possibility of leaf curling, check the leaf margins, if slight to more yellow, possibility of potassium deficiency. Foliar spray of SOP @ 3g/L followed by fertigation of 20-25 kg SOP/acre in 2 to 3 splits.

Fruit bud differentiation stage

1. 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. Donot apply beyond this until and unless the soil and petiole tests show low phosphorus availability.
2. Donot apply any water soluble fertilizer having nitrogen.
3. 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.
4. Apply Magnesium sulphate @ 15kg/ acre in atleast 2 splits from 45 to 55 DAP.

5. In calcareous soils, spray magnesium sulphate and potassium sulphate @ 3 gm each/ L once only during 45 to 55 DAP.
6. Keep a close watch on the development of leaf blackening symptoms if irrigation water contains sodium more than 100ppm.
7. Possibility of leaf curling, check the leaf margins, if slight to more yellow, possibility of potassium deficiency. Foliar spray of SOP @ 3-4g/L followed by fertigation of 20-25 kg SOP/acre in 2 to 3 splits.

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

Nil

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

Management in new vineyard:

With the unseasonal rains and hailstorm in many of the grape vineyard, following problems are encountered. Considering this, following advice is listed as below.

1. Due to heavy rains alongwith hailstorm, the growing shoots are damaged. In some cases, the growing shoot only broken. Under such condition, pinching of the same shoot just below the damaged bud. This will help for sprouting of side shoot.
2. In case of shoot broken in between, taking the re-cut leaving 2-3 buds from the base will help to take new up new growth.
3. In some cases, there will be a damage/wound on cordon and trunk. Under such situation removal of these parts is not advisable.
4. Since the temperature in the vineyard is reduced and the RH is increased, this condition will support for increase in sap flow in the vine. Hence, application of nitrogen will help in healing the wound at faster rate.
5. Under the condition of wound on the shoots and cordon, spray copper based fungicides @ 2g/L water immediately. This will support to avoid further spread.
6. Since the moisture in root zone is sufficient and also the RH in canopy, spraying of biologicals like Trichoderma will help in controlling the diseases.
7. The cloudy weather will help in reducing the temperature in the vineyard. This will support for early and uniform bud sprouts.
8. In the vineyard after the re-cut, shoot growth will be at faster rate. For uniform and early bud sprouts, irrigation and nutrition requirement should be the priority.

9. Among the nutrients, nitrogen plays an important role. Nitrogen to the re-cut plants can be supplied through urea, 18:46:0, 12:61:0, etc.
10. Under light soil, the irrigation to be in different time interval. Frequent irrigation can be the better option since the water holding in light soil is less.
11. The water holding capacity of black cotton soil is more hence, the irrigation can be based on the requirement.
12. To reduce the temperature and increase RH, irrigate the bund completely. This will help to increase the root spread also. Irrigation during day time should be avoided.
13. During this period, the incidence of thrips will be more on succulent shoots. During this growth stage, the deficiency symptoms of potash will also be seen on the older leaf. Hence, depending upon the symptoms, corrective measures either for thrips or potash deficiency to be taken up.
14. Many of the times double shoots comes out from the single bud. Under such condition, maintain only single bud.
15. During the bud swelling stage, the insect like flea beetle may become more serious. This pest eat the food material from the sprouted bud thereby spoiling the re-cut of the vine.
16. The cordon development should be stop n go method. Pinching of shoot trained for cordon at 6 to 7 leaf when it is at 9 to 10 leaf stage. The side shoot arising out of it will be the fruitful canes. The side shoots are to be pinched at 3 to 4 leaf. This will help to develop cordon with sufficient reserve food material.
17. Once the shoots are pinched for sub cane, spray 6 BA @ 10 ppm and Uracil @ 25 ppm. This will enhance the fruit bud differentiation.
18. A small quantity of phosphorous and potash mixed grade fertilizer also bee supplied through soil (if the vigor is increasing).
19. Spray of 0:40:37 @ 1.5 g/L or 0:52:34 @ 2 g/L water can help to improve fruit bud differentiation.

Management in old vineyard:

1. The hailstorm in the newly pruned vineyard might have damaged the buds. In this condition, the vine will be under stress for some time. The damaged buds cannot be corrected. However, application of nitrogenous fertilizer, covering the vineyard by shade nets can help to increase the sap in the bud thereby correcting the defects.
2. The remaining practices for correcting the damage due to hails will be same as that of in new vineyard.

3. In majority of the vineyard where the pinching for sub cane was done. However, with the rainfall the root zone is saturated with excess moisture. This will lead to high vigor. Hence, application of 6BA and Uracil will be necessary to assure fruit bud differentiation.
4. In addition, 2-3 sprays of P and K based fertilizer or only K containing fertilizer and through drip may help in controlling the vigor and advance fruit bud differentiation.
5. After the bud sprouts, shoot thinning considering the spacing in the vineyard be done. For one square feet spacing, 0.5 shoots are to be maintained while the remaining shoots to be removed.
6. While shoot removal, downward growing shoots, double shoots are considered first.
7. Sub cane should be developed only when the shoot vigour is high and the irrigation water is available in sufficient quantity.
8. For sub cane development, pinch the shoot at 7 leaf when it grows till 9 leaf.
9. During the vegetative growth stage, irrigation water and nitrogenous fertilizer should be the priority.
10. In case of high temperature and reduced vegetative growth, mulching on the bund should be given priority. This will help in controlling the water loss from the soil surface and also maintain the temperature in the root zone.
11. During the fruit bud differentiation stage, PGR sprays to be given at proper growth stage. First spray of 6 BA @ 10 ppm to be given at 3-4 leaf emergence after the sub cane.
12. Second spray of Uracil @ 25 ppm after 5 days of 6 BA (at about 5-6 leaf on sub cane) while the third spray of 6 BA @ 10 ppm (after pinching of sub cane at 5 leaf).
13. At the same time, fertilizer sprays like 0:40:37 @ 1.5 to 2.0 g/L water or 0:52:34 @ 2 to 2.5 g/L water cane be given.
14. Six to 7 sprays at an interval of 3-4 days will be sufficient to achieve fruit bud differentiation in the vine.

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V. Disease management (Dr. Sujoy Saha)

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

The cordons should be washed with Mancozeb and sulphur alternatively after pruning. Pruned material should be collected and put in the compost pit. In early pruned areas application of copper hydroxide @ 1.5-2g/l if it is in 3-5 leaf stage.3-5gms of mancozeb may be mixed with pasting mixture for initial protection of cut surfaces. In areas where light to moderate rains are received, drip application of Trichoderma may be done. In some areas of Nashik, where bacterial spot is incident application of Mancozeb @2g/litre may be given.

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

Days after pruning	Risk of pests				
	Mealybug	Mite	Thrips/leafhopper	Caterpillar	Flea beetle
Sprouting to early shoot growth	Moderate	Nil	Moderate	Nil to low	Moderate to High
New vineyards	Moderate	Nil	Very high	Nil to low	Moderate

- Give preventive spray of imidacloprid 17.8 SL @ 0.4 ml per litre water at the time of bud sprouting after April pruning to manage flea beetle and mealybug shoot malformation.
- For flea beetle management during early shoot growth, 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 or late evening. If that is not found sufficient to manage flea beetle, give soil drenching of imidacloprid 17.8 SL @ 1.5 ml per vine also.
- For thrips management in new vineyards or new shoot growth after April pruning, give regular applications of effective insecticides such as spinosad 45 SC @ 0.25 ml/l, spinetoram 11.7 SC @ 0.3 ml/l, cyantraniliprole 10 OD @ 0.7 ml/l, emamectin benzoate 5 SG @ 0.22g/l or fipronil 80 WG @ 0.0625 g/l water when thrips population is 5 per shoot or above.