WEATHER DATA FOR THE PREVAILING WEEK

Date of Foundation Pruning: 15/04/2021

Wednesday (07/07/2021)–Wednesday (14/07/2021)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	23-24	28-32	**Nashik, Dindori, Ozar, Palkhed, , Vani, Loni, Pimpalgaon Baswant, Shirdi, Kalwan** Fri to Tue- Moderate to Good Rain.	Partly to Mostly Cloudy	06-17	57-81	87-92
Pune	20-22	24-29	**Pune, Phursungi, Loni Kalbhor, Uruli Kanchan, Patas, Yavat, Supa, Narayangaon, Baramati** Fri to Tue- Moderate to Good Rain.	Partly to Mostly Cloudy	07-19	55-82	82-88
Solapur	20-21	29-33	**Solapur, Vairag, Nannaj, Kati, Pangri, Osmanabad, Latur, Ausa, Tuljapur, Pandharpur, Barshi, Atpadi, Kasegaon** Fri to Tue- Moderate to Good Rain.	Partly to Mostly Cloudy	08-16	42-65	70-82
Sangli	21-22	26-30	**Sangli, Miraj, Palus** Fri & Sun- Light Rain. Sat, Mon & Tue- Moderate to Good Rain. **Kagvad, Shetfal, Palsi, Khanapur, Vita, Tasgaon, Shirguppi, Arag, Walva, Kawthe Mahakal** Fri to Tue- Moderate to Good Rain.	Mostly Cloudy	08-15	57-69	83-87
Vijayapura	20-22	28-32	**Vijayapura, Chadchan**, **Tikota, Telsang** Fri to Tue- Good Rain.	Mostly Cloudy	08-20	49-69	80-84
Hyderabad	21-23	29-33	**Hyderabad, Medchal, Zahirabad** Fri, Sat, Mon & Tue- Good Rain. Sun- Light Rain.	Partly to Mostly Cloudy	07-13	50-75	78-88
Satara	21-22	24-29	**Satara, Man, Khatav, Phaltan** Sun & Mon- Light Rain. Fri & Tue- Good Rain.	Partly to Mostly Cloudy	08-11	60-78	87-88
Ahmednagar	20-22	28-31	**Ahmednagar, Nagar, Kopargaon, Sangamner, Shrigonda, Karjat, Jamkhed, Akole, Rahata** Fri to Tue- Moderate to Good Rain.	Partly to Mostly Cloudy	08-17	55-68	81-87

Jalna	21-22	26-34	**Jalna, Ambad, Jafrabad, Mantha, Gansawangi** Fri to Tue- Good Rain.	Mostly Cloudy	09-16	39-68	76-86
Buldhana	22-24	30-35	**Buldana, Chikhli, D.raja, Sindkhedraja** Fri to Wed- Good Rain.	Mostly Cloudy	05-14	47-71	85-91
Kolhapur	22-23	25-28	**Gagan-bavada, Kagal, Karveer** Fri to Wed- Good Rain.	Mostly Cloudy	04-10	78-96	94-98
Bengaluru Rural	19-20	25-29	**Bangaluru-east, Bangaluru-north, Bangaluru-south, Doddaballapur, Anekal** Fri to Wed- Moderate to Good Rain.	Mostly cloudy	08-18	56-69	83-85
Belagavi	21-23	24-28	**Belagavi, Athni, Chikodi, Gokak, Khanapur** Fri to Wed- Good Rain.	Mostly cloudy	07-15	78-91	92-95
Bidar	20-21	30-33	**Bidar, Basavakalyan, Humnabad** Fri to Wed- Good Rain.	Mostly cloudy	08-16	51-74	83-89
Bagalkot	20-21	24-29	**Bagalkot, Bilagi, Jamkhandi, Mudhol, Hungund, Badami** Fri to Wed- Good Rain.	Mostly cloudy	09-20	56-80	79-86

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:** 83

b) **Pan evaporation:** : 4.5 to 6 mm

Amount of irrigation advised:

1. All the grape growing regions are forecasted to receive rains. The irrigation water application should be based upon the growth of the vines. In case rain exceeds 5 mm on a given day, irrigation water application can be skipped for that day. Generally, under wapsa (field capacity) condition of the soil, donot give irrigation.

2. **Fruit Bud Differentiation stage:**
    a. Apply irrigation through surface drip @ 2500 to 4000 L/acre per day.
    b. 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.
3. **Cane maturity stage:** Apply irrigation through surface drip @ 2500 to 4000 L/acre per day.
4. Flooding the vineyard is not advised as it leads to wastage of water. Concentrate irrigation water application in the root zone only.
5. In case of monsoon rains, remove mulch cover on the bund and allow the rain water to seep into the soil. This will leach the accumulated salts in the rootzone. The mulch so removed can be mixed with the soil to improve the soil porosity.

Nutrient management

1. After current rains, give foliar spray of SOP @ 3-5 g/L depending upon canopy.
2. In case of calcareous soils where acute iron deficiency is observed, repeatedly spray 2-3g/L Ferrous sulphate two to three times at 3 days interval followed by 15-20 kg/ acre Ferrous sulphate application through drip. The fertigation dose should be split into atleast 3 doses of 5kg each. Apply 5kg/ acre soluble sulphur through drip every week. Also spray magnesium sulphate and potassium sulphate @ 3 gm each/ L once only. Keep a close watch on the development of leaf blackening symptoms if irrigation water contains sodium more than 100ppm.
3. 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.
4. If the leaf yellowing starts from in between the leaf veins then, possibility of magnesium deficiency is there. Foliar spray of Magnesium sulphate @ 3-4g/L followed by fertigation of 15-20 kg magnesium sulphate/acre in 2 to 3 splits.
5. In coloured varieties like Jumbo, Nanasaheb Purple etc., leaf curling along with reddening/ bronzing of the leaf margin can be observed if potassium deficiency is there. 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. 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.
2. Apply Magnesium sulphate @ 15kg/ acre in atleast 2 splits from 45 to 55 DAP.

Cane maturity stage

1. Potassium application is required from Cane maturity stage onwards. Approx. 64 kg of sulphate of potash (soluble grade) should be applied in this stage. Split the application into atleast five doses to reduce the leaching losses of the potassium. Apply 15 kg SOP in two – three splits during this week. In calcareous soils, provide foliar application of Sulphate of Potash (@ 4g/L) once in this growth stage.
2. Apply magnesium sulphate @ 15 kg/acre in two splits. The application should be done during 60-75 days after pruning. In calcareous soils, provide foliar application of Magnesium sulphate (@3g/L) in this growth stage.

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

Nil

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

Under the cloudy as well as rainy period, the canopy management practices to be followed in different growth stages are as below.

1) New vineyard:

With the saturation of moisture in between the rows, the new roots are becoming active. This condition is called formation of white roots. These roots also synthesize the PGR and supply to the growing shoot tips. Thus, the internodal length will increase leading to more vigor. In addition, the side shoots will also be emerging at faster rate. This condition will lead to formation of dense canopy. In the vines where new shoots are formed and the sub cane was developed, fruit bud differentiation is in progress. The sunlight on the bud is important for fruit bud differentiation.

Under this canopy relative humidity will be more than 70% which is considered to be more favourable for the development of diseases like downy mildew. If the rain continues for 2-3 days, anthracnose disease may become prevalent on growing shoots. Once the organism enters into the shoot, it will reach to bunch after forward pruning very easily. Hence, following practices are suggested to control the problems

1. Remove the side shoots on priority. This will help in making open canopy thereby reducing the chances of disease spread.
2. Do not retain the small leaf available near the bud. This leaf will not allow the sunlight on the bud required for fruit bud differentiation.
3. Shoot pinching also to be done on priority. This will help to control the vigor thereby allowing the shoot to be vertically position on the cordon.
4. Apply potassic fertilizers to advance cane maturity.
5. Under the condition of 30 days old shoot, spray 6BA and Uracil with minimum dose
6. Spray of P and K based soluble fertilizers will also help in achieving the fruit bud differentiation.

2) Old Vineyard:

In majority of the vineyards, the cane maturity stage is coinciding with the rains or cloudy weather. This condition will delay cane maturity as well as create the condition for spread of diseases. Since the vigor is increasing during this period, availability of sunlight will be less thereby increasing the gibberellin level in the vine. Hence, following practices are suggested

1. Shoot pinching to be followed. Only the small portion of shoot tip need to be removed. Hard pinching will lead to sprouting of additional side shoots and emergence of bunches.
2. Removal of side shoots will support to achieve open canopy thereby reducing the chances of disease incidence and thus disease can be controlled effectively. The spray coverage will be proper. This will help to reduce the chances for further disease spread.
3. Under the condition rains, instead of supplying the nutrients through drip, spray of potassic fertilizers will help to avoid any deficiency. This will also help for advancing cane maturity.
4. Emergence of excess shoots will form dense canopy thereby increasing the relative humidity. This condition will delay the cane maturity. Hence, maintaining the open canopy by training the shoots on wire will support to advance the maturity.
5. Boudreaux spray @ 0.5% may also support to maintain the healthy shoots.
6. Irrigation need to be kept under control. This will support for controlling the vegetative growth.

V. Disease management (Dr. Sujoy Saha)

Days after foundation pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
83	Low	Low	High	Bacterial spot

In areas receiving light to moderate drizzles application of Thiophenate methyl @1g/L may be given to protect from anthracnose disease. Drip application of Trichoderma may be continued in areas receiving rainfall. In some areas of Nashik, Sangli and Solapur, where bacterial spot is incident application of Mancozeb @2.5g/litre may be given. Foliar spray of Trichoderma may also be given @2-3ml/L but it should not be given immediately after application of copper fungicides. If bacterial spot and anthracnose are incident together a ready-mix of kasugamycin + copper oxychloride @0.75g/l may be applied twice at an interval of 10 days. In some pockets of Nashik and Solapur where downy mildew is present application of potassium salt of active phosphorus@ 4g/l + Mancozeb@2.0g/L should be done. Use of silicon-based sticker will increase the efficacy of spray chemicals. It is to be noted that, water volume per acre (approx. 400 litres) or per hectare (approx. 1000 litres) should be maintained. Sporadic incidence of powdery in some vineyards may be controlled by sulphur@2g/l.

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

1. Due to reduction in temperature and cloudy conditions, mealybug infestation may be noticed. Use of broad spectrum insecticides should be avoided for mealybug control. Buprofezin 25 SC @ 1.25 ml/l water may be given to manage mealybugs. Preventive plant wash, on stem and cordons, of biocontrol agents such as *Verticillium, Metarhizium, Beauveria* may be given.
2. In case of thrips or caterpillar infestation, remove excess canopy. Application of fipronil 80 WG @ 0.0625 g per litre or emamectin benzoate 5 SG @ 0.22 g per litre water is effective. Light traps may be installed outside the vineyards to manage moths for reducing caterpillar infestation.

3. Mite infestation may start appearing, therefore, monitor the vineyards carefully. If mite infestation is observed, sulphur 80 WDG @ 1.5-2.0 gram per litre or abamectin 1.9 EC @ 0.75 ml/l water is effective.
4. Red colour stem borer (*Dervishiya cadambae*) has started egg laying and infestation under bark in grape areas. Install light traps near the vineyards to manage moths of this stem borer. Remove loose bark from stem and cordons and give preventive wash on stem and cordons with biocontrol agent *Metarhizium* @ 3-5 ml per litre water minimum once in the month during July to September months. If infestation is observed, remove the loose bark and give stem and cordon wash with lambda cyhalothrin 5 CS @ 2.5 ml per litre water and 1.5-2 litres water per plant.