

WEATHER DATA FOR THE PREVAILING WEEK

Date of foundation pruning: 15/04/2020

Wednesday(10/6/2020)– Wednesday (17/6/2020)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	23-24	28-31	Nashik, Pimpalgaon Baswant, Ojhar, Palkhed, Dindori, Vani Wed to Sat- Drizzling. Sun & Mon - Good Rain. Tue- Moderate Rain. Next Wed- Light Rain. Shiradi, Loni Wed, Sun & Mon- Good Rain. Thu- Moderate Rain. Fri & Sat- Drizzling. Tue & Next Wed- Light Rain. Niphad, Kalvan, Devla Wed, Thu & Tue- Moderate Rain. Fri, Sat & Next Wed- Drizzling. Sun & Mon- Good Rain.	Mostly Cloudy	8-22	66-83	91-96
Pune	23-24	27-30	Pune, Phursungi, Narayangaon, Junnar Wed to Fri- Drizzling. Sat- Light Rain. Sun to Tue- Good Rain. Next Wed- Moderate Rain. Loni Kalbhor, Uruli Kanchan, Yavat, Patas, Supa, Baramati Wed & Tue- Light Rain. Thu to Sat- Moderate Rain. Sun & Mon- Good Rain. Next Wed- Drizzling.	Mostly Cloudy	4-20	70-82	91-94
Solapur	24-25	30-33	Solapur, Nanaj, Kati, Pandharpur, Osmanabad, Tuljapur, Ausa, Latur Wed- Good Rain. Thu & Sun- Moderate Rain. Fri, Mon to Next Wed- Drizzling. Sat- Light Rain. Vairag, Pangri, Barsi Wed, Sun & Mon- Good Rain. Thu to Sat- Moderate Rain. Tue & Next Wed- Drizzling. Kasegaon, Atpadi Wed & Next Wed- Light Rain. Thu & Sun- Good Rain. Fri- Drizzling. Sat, Mon & Tue- Moderate Rain.	Mostly Cloudy	10-23	59-76	88-95
Sangli	23-24	27-31	Sangli, Shetfal, Khanapur, Miraj, Arag Wed & Fri- Drizzling. Thu, Mon & Next Wed- Moderate Rain. Sat, Sun & Tue- Good Rain. Kavtha Mahankal, Palus, Valva, Shirguppi, Kagvad, Palsi, Vite. Tasgaon, Wed & Next Wed- Light Rain. Thu & Sun- Good Rain. Fri- Drizzling. Sat, Mon & Tue- Moderate Rain.	Mostly Cloudy	10-26	64-81	90-93
Bijapur	23-24	29-31	Bijapur, Tikota, Telsang, Chadchan Wed to Fri- Moderate Rain. Sat to Next Wed- Light Rain.	Mostly Cloudy	17-29	61-75	88-92

Hyderabad	24	28-32	Hyderabad, Medchal, Zahirabad Wed to Fri- Good Rain. Sat, Mon to Next Wed- Light rain. Sun- Moderate Rain.	Mostly Cloudy	11-23	62-85	92-100
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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: - 56 days

b) Expected growth stage of the crop: Fruit bud differentiation stage

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

Water management

Expected pan evaporation: 5 to 6 mm

Amount of irrigation advised:

1. All the grape growing regions are forecasted to receive from drizzling to good 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 @ 3500 to 5000 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.
 - c. Flooding the vineyard is not advised as it leads to wastage of water. Concentrate irrigation water application in the root zone only.
3. **Cane maturity stage:** Apply irrigation through surface drip @ 3500 to 5000 L/acre per day.
4. 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. During fruit bud differentiation stage:

- a. 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.
- b. Donot apply any water soluble fertilizer having nitrogen.
- c. 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.
- d. After current rains, give foliar spray of SOP @ 3-4g/L depending upon canopy.

- e. Apply Magnesium sulphate @ 15kg/ acre in at least 2 splits from 45 to 55 DAP.
- f. In calcareous soils, spray magnesium sulphate and potassium sulphate @ 3 gm each/ L once only during 45 to 55 DAP.

2. Cane maturity stage:

- a. Potassium application is required from Cane maturity stage onwards. 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.
- b. 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 (@4g/L) in this growth stage.
- c. In case of calcareous soils where acute iron deficiency is observed, repeatedly spray 2-3g/L Ferrous sulphate two to three times at 4-5 days interval followed by 15-20 kg/ acre Ferrous sulphate application through drip. The fertigation dose should be split into at least 3 doses of 5kg each.
- d. After current rains, give foliar spray of SOP @ 5g/L.

NOTE:

In some vineyards, problem of yellowing of the leaves along the margin along with vein reddening is observed. This is due to potassium deficiency. The deficiency of potassium can be due to insufficient potassium application or calcareous soils affecting the potassium uptake. It could also be due to sodicity problem in the vineyard. This deficiency can lead to more powdery mildew infestation and sucking pest (leaf hopper) incidence. Sodicity problems could also lead to sodium toxicity and potassium deficiency with leaves showing leaf blackening and necrosis symptoms in Thompson Seedless and its clone or leaf reddening symptoms in coloured varieties along the leaf margin.

Under such situation, Potassium deficiency can be corrected by a combination of foliar spray (minimum three to four) of 0.5% sulphate of potassium (5g/litre SOP) and soil application of potassium fertilizers. In sunny days the spraying should be done in morning or evening when humidity is high and temperature is low. Spraying during day time when temperature is high and humidity is low reduces potassium uptake into the leaves. Apply 25 to 50 kg SOP /acre as single dose or via fertigation (in 3 to 4 splits) within one week, depending upon extent/severity of potassium deficiency.

However, for any measures to succeed, calcareous or sodicity conditions should be managed, then only appreciable effect of potassium application can be observed.

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

Nil

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

During this week, the weather condition in majority of the grape vineyard is favourable for vegetative growth. This will have effect on vine development in different way. Following points are therefore suggested based on the growth stage.

A) **Excess vigor:** In the late pruned vineyard with the recent rainfall or even cloudy weather, the humidity build up will increase and vineyard temperature will be reduced. This will support for excess shoot vigor. Hence, following measures are suggested.

- i) Shoot pinching to be done immediately to take the advantage of vigor.
- ii) Potassic fertilizer for control of vegetative growth and also the side shoot pinching to be done on priority.
- iii) Spray of potash @ 2 to 3.0 g/L water can be done once the rain stops.
- iv) Application of growth regulators (6 BA and uracil) for fruit bud differentiation can be taken up.
- v) Spray 0:40:37 @ 2.5 g/L water (4-5 sprays at an interval of 2-4 days).

B) **Sprouting of main bud:** The main bud is sprouting in majority of the vineyard. The rainfall increases the relative humidity in the vineyard thereby increasing the shoot vigor. If the hard pinching is done after sub cane development, the bud sprouts is experienced. To control the problem, following practices are suggested.

- 1) Do not control the vegetative growth for a period of about 6-7 days.
- 2) Do not pinch the shoot tip. Also the potash application need to be stopped
- 3) Do not remove the side shoots
- 4) To encourage the vegetative growth for some time, spray urea @ 2.0 to 2.5 g per lit water and also 1.5 to 2.0 kg/acre through soil (once)
- 5) Avoid cytokine based PGR and growth retardant sprays for some time.
- 6) Increase 10-15% irrigation for uptake of nitrogen (if required)

C) **Rootstock planting:** In this garden, all the rootstock plants might have not reached to the level of grafting due to shortage of irrigation, lack of fertilizers and high temperature. Hence, at this stage the re-cut of rootstock leaving 1 or 2 buds at base may be taken up. The following practices are suggested.

- i) Fresh re-cut of rootstock to be taken leaving 1 to 2 buds at base.
- ii) Apply DAP @ 30kg/acre basis to speed up the vegetative growth and root development.
- iii) Retention of only 3-4 shoot from the sprouted shoots.

D) **Sudden drying of vine:** 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.

The following suggestions are given:

- 1) Drenching of Carbendazim @ 1.5g + Imidachlopid 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.

VI. Disease management (Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
49	Low	Nil	Moderate	nil

Application of Kasugamycin 5% + Copper oxychloride 45% @ 2.5 g/Litre may be applied for the control of both bacterial spot and anthracnose. If it is only anthracnose, application of thiophenate methyl 70WP @ 1g/L may be done. If it is only bacterial leaf spot application of mancozeb 75WP @

2g/L may be done. Drip application of Trichoderma may be given in areas where there is slight drizzle which will enable the BCA to multiply. One prophylactic spray of Mancozeb@2g/litre may be given for managing downy mildew as moderate to heavy rains are forecasted in this week.

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

Days after pruning	Risk of pests				
	Mealybug	Mite	Thrips	Caterpillar	Flea beetle
Sub cane development to Initiation of cane maturity	Low to Moderate	Moderate to High	Low to Moderate	High	Low

- Adults of stem borer *Stromatium barbatum* start emerging during the last week of May to first fortnight of June. Installation of light traps will be helpful in monitoring the initiation of emergence of stem borer adults. Run the light traps for 3 hours daily, during evening between 7.00 pm – 10.00 pm and destroy the collected beetles in water mixed with insecticide. If adult stem borers are noticed, application of fipronil 80 WG @ 0.06 g/litre, lambda cyhalothrin 5 CS @ 0.5 ml/litre or imidacloprid 17.8 SL @ 0.3 ml/litre water may be given directed at main stem and cordons during night. Follow the following link for detailed information on YouTube video <https://www.youtube.com/watch?v=Yvx7dIbPEAU>
- 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.
- In case of thrips or caterpillar infestation, application of fipronil 80 WG @ 0.0625 g per litre or emamectin benzoate 5 SG @ 0.22 g per litre water is effective.
- 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.