WEATHER DATA FOR THE PREVAILING WEEK

Date of Fruit Pruning: 15/09/2021

Wednesday (20/10/2021)–Wednesday (27/10/2021)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	19-20	31-32	Nashik, Dindori, Ozar, Vani, Loni, Pimpalgaon Baswant,Shirdi,Kalwan, Palkhed Thu to Wed – No Rain	Clear	05-06	30-35	55-89
Pune	18-19	30-31	Pune, Phursungi, Loni Kalbhor, Uruli Kanchan, Patas, Yavat, Narayangaon, Baramati,Supa Thu to Wed –No Rain	Clear	07-08	30-33	55-76
Solapur	18-19	28-31	Solapur, Vairag, Nannaj, Kati,Osmanabad, Latur, Ausa, Barshi, Kasegaon,Pangri, Tuljapur,Pandharpur Thu toWed –No Rain Atpadi-Sat to Sun- Drizzling to Light Rain.	Clear to Partly cloudy	10-13	31-45	57-77
Sangli	21-22	32-33	Sangli,Shetfal,Palus,Vita, Arag,Walva, Kawthe,Palsi Khanapur Thu to Wed –No Rain. Miraj, Kagvad, Tasgaon Sat to Sun- Drizzling to Light Rain. Shirguppi Sat to Sun-Light to Moderate Rain.	Clear to Partly cloudy	06-08	32-38	56-75
Vijayapura	19-21	32-33	Vijayapura Mon- Drizzling. Chadchan,Tikota &Telsang Thu to Wed –No Rain .	Clear to Partly cloudy	08-14	26-34	49-67
Hyderabad	20-21	29-31	Hyderabad,Medchal,Zahirabad Thu to Wed –No Rain .	Clear	08-11	29-41	51-71
Satara	18-19	30-31	Satara, Phaltan, Man,Khatav Rahata – Thu to Wed –No Rain .	Clear	05-08	35-40	59-72
Ahmednagar	18-19	31-32	Ahmednagar, Nagar, Kopargaon, Shrigonda,Jamkhed,Akole,Rahata, Sangamner,Karjat Thu to Wed –No Rain .	Clear	07-11	28-34	60-74
Jalna	17-18	30-31	Jalna,Jafrabad,Ambad,Gansawangi,Mantha Thu to Wed –No Rain .	Clear	05-10	26-37	52-62
Buldhana	19-20	30-31	Buldana,Chikhli, D.raja,Sindkhedraja Thu to Wed –No Rain.	Clear	05-08	30-41	50-60
Kolhapur	21-22	32-33	Gagan-bavada ,Kagal,Karveer Thu to Wed –No Rain .	Clear	06-08	37-44	62-86
Bengaluru Rural	20-21	27-30	Bengaluru-east, Bengaluru-north, Bengaluru-south,Doddaballapur, Anekal Thu to Mon – Good Rain	Partly to Mostly cloudy	05-09	58-63	83-88

Belagavi	18-22	27-31	Belagavi Mon-Light Rain,Gokak Sat to Sun-Moderate Rain. Athni Sat to Sun- Drizzling to Light Rain Chikodi Sat-Light Rain, Sun-Good Rain.Khanapur Thu to Wed –No Rain.	Clear to Mostly cloudy	07-08	46-55	63-91
Bidar	18-19	29-30	Bidar Humnabad ,Basavakalyan- Thu to Wed –No Rain .	Clear	07-10	36-53	58-82
Bagalkot	20-22	31-32	BagalkotSun- Drizzling. Hungund,Badami &Mudhol Mon-Light Rain,Badami Fri,Sun-Drizzling. Jamkhandi, Bilagi Thu to Wed –No Rain .	Clear to Partly cloudy	06-12	30-38	51-69

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 and Dr. Yukti Verma)

a) **Days after fruit pruning:** 35

b) **Pan evaporation: 3-5mm**

Amount of irrigation advised:

1. Some grape growing areas are likely to receive rains from drizzling to good rains. In case rain exceeds 5 mm on a given day soil is under wapsa (field capacity) condition, donot irrigate the vineyard.
2. If continuous good rains are forecasted, remove the mulch and allow the bund/ rootzone to be fully wet with water for leaching of salts. The mulch so removed can be mixed with the soil to improve the soil porosity.This is especially important for the following condition:
   i) In Solapur, Sangli, Vijayapura or any area where the ground water used for irrigation contains more salt.

3. During shoot growth stage (Fruit pruning season), apply irrigation through drip @ 5100-8500 L/ acre/ day for all grape growing regions. In case vigour is more than desired, then reduce irrigation water application by half to 2500 - 4300 L/ acre and still if growth is more, stop the irrigation till such time the growth is brought under control and then start irrigation.
4. 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.
5. From flowering to fruit setting, apply irrigation through drip upto 3000 L/ acre/ day. Vigour needs to be controlled.

Nutrient management

Pre-pruning operations – Fruit pruning season

1. In case the soils are saturated, due to prolonged saturation, the roots may start decaying. **Donot disturb the soil in the root zone even if pruning is being taken up. Wait for the soil to come to the wapsa condition before any soil related intervention has to be done.**
2. Test the soil and irrigation water, to plan for nutrient and water management during fruit pruning season.
3. The vineyards where sodicity problems are there, apply gypsum to the soil for removal of sodium from the soil exchange complex. In case of calcareous soils, use sulphur for similar purpose. The application should be alongwith FYM/compost etc. They should be mixed in the soil and not left on the top.
4. If soils are calcareous in nature, then apply 50 kg sulphur between the vines in the soil atleast 15-20 days before pruning. The sulphur should be properly mixed in the soil for improving its efficacy in taking care of calcium carbonates. The efficacy of sulphur is improved if FYM/ Compost are applied along with sulphur and mixed in the soil. If SSP is applied as basal dose, mix with FYM/compost etc. to avoid phosphorus fixation.

   REMEMBER: Sulphur should not be left on the surface of the bund. This will not help in removing calcium carbonate from the soil.

Shoot Growth stage

1. Based upon the soil test value, during shoot growth stage apply urea @ 15kg / acre this week in two splits. If the soil is calcareous, instead of urea apply ammonium sulphate @ 25 kg/ acre in three splits this week. Depending upon the crop vigour, regulate nitrogen application.

2. If sodicity problem is there, apply 10 kg Sulphate of potash per acre in 2 splits this week.
3. Until and unless leaves are fully developed donot go for any foliar application of nutrients. It will be lead to wastage of spray.
4. The quantity of nutrients to be applied through foliar, depends upon canopy size.
5. If the crop is between 5 leaf to prebloom stage, apply Zinc sulphate and Ferrous sulphate @ 15 kg/ acre based upon soil test value. Boron application should be carried out only if soil test value indicates low levels and the irrigation water does not contain boron. If during foundation puning, the petiole test stated that boron was deficient then apply boron @ 1.5 kg to 5 kg depending upon the soil test value. Apply one kg boron at a time.
6. If soils are calcareous, spray Sulphate of potash and Magnesium sulphate @ 2-3g/L depending upon leaf age during prebloom stage.

Flowering to setting stage:

1. Donot apply any nitrogen based fertilizer just before Flowering to Setting stage to avoid problems of kooj (inflorescence necrosis).
2. Apply 3-4 kg Phosphoric acid in two to three splits this week. Remember that the pH of the irrigation water should be near 6.0. OR apply SSP @ 125kg/acre as basal application. SSP should be mixed with FYM/Compost before application to minimize phosphorus fixation.
3. **Petiole nutrient testing: At 70% capfall stage, petiole samples should be taken for nutrient analysis. The leaf opposite the bunch should be removed for sampling.**

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

Nil

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

In majority of the grape vineyard, the fruit pruning is in progress. The bud sprouting starts after 7-8 days. During this period if the vineyard is experiencing rainfall, the vine physiology disturbs with increase in gibberellins level. This condition results into increase in vine vigor. In addition, the vineyard faces different condition during bunch emergence. The grape growers are advised the following.

1. Do not allow to stagnate water in the root zone. Remove the water from field by making a small trench between rows.
2. Spray cytokinin based PGR so that the level of cytokines in the vine will get increased and gibberellins level will be reduced. Spray 6 BA @ 10 PPM when the bud starts sprouting. For effective results, the spray should be done when sprouting started
3. Application of potash as soil application and also spray will help to control the vigor

Management practices for uniform sprout

1. If the leaf fall is completely achieved, the growers should start fruit pruning immediately to avoid sprouts.
2. Application of hydrogen cyanamide is equally important as it helps in achieving early bud sprout. The dose of hydrogen cyanamide depend upon diameter, temperature in the vineyard and leaf fall achieved. In general, 40 ml/L water will be sufficient for cane with 8 to 10 mm diameter.
3. In case of thick canes, one more application of hydrogen cyanamide will be required with the same concentration.
4. The thick canes should be twisted so that the physiological processes will initiate and uniform bud sprouting will be achieved in both the type of canes.
5. Avoid application of hydrogen cynamide immediately after the pruning but, can be applied on next day.
6. Under the condition of vineyard affected with diseases, spray Bordeaux mixture @ 1% on canes, cordon, and trunk and on ground. This will support to control the major diseases before the bud sprouts.
7. Spraying of biological agents like Trichoderma before pruning will also help to control the disease.

V. Disease management (Dr. Sujoy Saha)

Days after fruit pruning	Risk of diseases			
	Downy mildew	**Powdery mildew**	**Anthracnose**	**Others (specify)**
35	Low	Nil	Low to moderate	Bacterial spot-High Rust- moderate

In areas of early pruning, stem and cordon wash with mancozeb 75WP @2.5-3g/l followed by sulphur@ 2.5-3g/l should be done at an interval of 3-5 days. Foliar spray of Trichoderma may also be given @2- 3ml/L but it should not be given immediately after application of copper fungicides. If sprouting has started in early pruned areas spray of copper hydroxide @ 1, 5-2g/l may be given for prophylactic spray against downy mildew. *Trichoderma* through drip should be continued. In areas where 5-7 leaf stages are predominant application of Dimethomorph @ 1g/L+mancozeb 75WP @ 2g/L or Iprovalicarb+propineb @ 2.25g/L or Mandipropamid @ 0.8g/L may be done. Two applications of Amisulbrom 17.7% SC @375ml/ha at 10-days interval will give a good control of downy mildew.

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

Foundation pruning growth stage: Cane maturity and afterwards

- Caterpillar (*Spodoptera litura*) infestation may increase in most of the grape areas as humidity is increasing. For the management of caterpillars, emamectin benzoate 5 SG @ 0.22 g/litre or fipronil 80 WG @ 0.06 g/litre or cyantraniliprole 10 OD @ 0.7 ml per lire water may be given.
- Mealybug population and movement of ants may be noticed under the bark. Due to possibility of rains and build-up of relative humidity, plant wash with entomopathogenic fungi viz. *Metarhizium, Beauveria* and *Lecanicillium* may be useful for controlling mealybugs and ants.
- Do not spray any broad spectrum insecticides such as chlorpyrifos, dichlorvos, methomyl, profenophos, etc. for mealybug control. Higher humidity will favour development of natural enemies which will slowly kill mealybugs. In case chemical spray is required, prefer buprofezin 25 SC @ 1.25 ml per litre of water for plant wash.
- Incidences of new species of stem borer (red colour larva) may be noticed under bark in Sangali, Solapur, Nashik, Pune, Bijapur grape areas. Remove the loose bark and give good plant wash mainly targeting cordons and main trunk with lambda cyhalothrin 4.9 CS @ 2.5 ml/l.

Fruit pruning growth stage: Dormant bud to sprouting

- Caterpillar (*Spodoptera litura*) infestation may increase in most of the grape areas as humidity is high. Caterpillars may chew on buds and new sprouts. For the management of caterpillars, emamectin benzoate 5 SG @ 0.22 g/litre or fipronil 80 WG @ 0.06 g/litre water may be given during night.

- Remove loose bark and give preventive plant wash with buprofezin 25 SC @ 1.25 ml/litre water. At 15 days interval, plant wash with entomopathogenic fungi viz. *Metarhizium, Beauveria* and *Lecanicillium* may be useful for controlling mealybugs and ants.
- Give soil drenching with *Metarhizium* just after fruit pruning to manage thrips pupa and ants in soil.
- For flea beetle management, remove weeds from inside and around the vineyards. Harrowing may be done in inter row space once the rainy spell is over. Then give soil drenching with clothianidin 50 WDG @ 200 gram per acre in the root zone to kill flea beetle grubs in the soil. Thereafter, foliar application of lambda cyhalothrin 4.9 CS @ 200 ml per acre or imidacloprid 17.8 SL @ 160 ml per acre or fipronil 80 WG @ 25 g per acre or spinosad 45 SC @ 100 ml per acre may be given. The foliar spray may preferably to give at night.