WEATHER DATA FOR THE PREVAILING WEEK

Date of Fruit Pruning: 15/09/2021

Thursday (16/12/2021)–Wednesday (22/12/2021)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	14-17	28-29	Nashik, Dindori,Ozar, Vani, Loni, Pimpalgaon Baswant,Shirdi,Kalwan, Palkhed Thu to Wed –No Rain.	Clear	08-11	34-42	59-67
Pune	15-17	27-29	Pune,Phursungi, Loni Kalbhor, Uruli Kanchan, Patas, Yavat, Narayangaon, Baramati,Supa Thu to Wed –No Rain.	Clear	06-10	34-48	57-66
Solapur	17-19	28-30	Vairag, Kati,Osmanabad,Barshi ,Latur Ausa,KasegaonPangri,Tuljapur,Pandharpur,Nannaj ,Solapur- Thu to Wed –No Rain.	Clear	09-12	26-37	47-49
Sangli	17-18	29-31	Sangli ,Shetfal,Palus,Vita, Arag, Walva, Kawthe,Palsi Khanapur,Miraj, Kagvad Tasgaon ,Shirguppi Thu to Wed –No Rain.	Clear	08-12	30-54	55-68
Vijayapura	16-17	29-30	Vijayapura,Chadchan,Tikota &Telsang Thu to Wed –No Rain.	Clear	11-15	31-50	50-63
Hyderabad	15-16	29-30	Hyderabad ,Medchal,Zahirabad - Thu to Wed –No Rain.	Clear	08-09	24-30	43-47
Satara	15-17	28-29	Satara,Man,Khatav Rahata Fri – Light Rain. Phaltan Thu to Wed -No Rain.	Clear to partly Cloudy	06-08	32-54	53-77
Ahmednagar	14-16	28-29	Ahmednagar, Nagar,Kopargaon, Shrigonda, Sangamner,Karjat ,Jamkhed,Akole,Rahata- Thu to Wed No Rain.	Clear	05-10	28-38	54-60
Jalna	13-15	27-29	Jalna,Ambad,Gansawangi,Mantha ,Jafrabad -Thu to Wed-No Rain.	Clear	06-10	27-34	45-58
Buldhana	13-16	27-30	Buldana,Chikhli, D.raja,Sindkhedraja Thu to Wed-No Rain.	Clear	07-12	28-33	42-58
Kolhapur	16-19	30-31	Gagan-bavada ,Kagal, Karveer - Thu to Wed-No Rain.	Clear	07-10	31-52	53-72

Bengaluru Rural	14-18	26-27	Bengaluru-east, Bengaluru-north, Bengaluru-south ,Doddaballapur, Anekal – Thu to Wed-No Rain.	Clear	12-14	31-47	86-94
Belagavi	17-19	28-29	Belagavi,Gokak,Athni,Chikodi,Khanapur Thu to Wed-No Rain.	Clear	10-12	35-56	51-86
Bidar	14-15	28-29	Bidar Humnabad ,Basavakalyan Thu to Wed-No Rain.	Clear	09-10	26-37	45-60
Bagalkot	15-17	28-29	Bagalkot,Hungund,Mudhol, Jamkhandi-Badami Thu to Wed-No Rain.	Clear	12-14	26-47	50-76

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.timeanddate.com/weather/india

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

II. Water management (Dr. A.K. Upadhyay and Dr. Yukti Verma)

- **Days after fruit pruning: 91**
- **Expected pan evaporation: 3-5 mm**

Amount of irrigation advised (Dr. A.K. Upadhyay):

a. In case the soil is under wapsa (field capacity) condition, donot irrigate the vineyard.
b. During shoot growth stage (fruit pruning season), apply irrigation through drip @ 5100- 8500 L/ acre/ day. Further, in case vigour is more than desired, then reduce irrigation water application to 2500 - 4500 L/ acre.
c. 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.
d. During Flowering to setting stage, apply irrigation through drip @ 2000 to 3500L/ acre/ day. Further, in case vigour is more than desired, then reduce irrigation water application by half.
e. During Berry development stage, apply irrigation through drip @ 5100- 8500 L/ acre/ day.

Soil and Nutrient management

Shoot growth stage:

1. Inflorescence necrosis could be a issue in dense canopy. Remove side shoots and reduce canopy to allow penetration of the sunlight for proper aeration. Manage canopy for adequate sunlight and air movement within the canopy for avoiding/ minimizing problems of kooj (inflorescence necrosis).
2. Donot apply any nitrogen based fertilizer just before Flowering to Setting stage to avoid problems of kooj (inflorescence necrosis).
3. If SOP not applied, then apply 15 kg SOP and follow it up with SOP spray for building up the potassium levels in the vines. This will be especially beneficial during low temperature and rainy conditions.

Flowering to setting stage:

1. Manage canopy for adequate sunlight and air movement within the canopy for avoiding/ minimizing 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.
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.

Berry Development stage:

1. If the berry size is from 2-4mm, spray calcium @ 2g Calcium Chloride or 0.5 g Ca chelate per litre. Target sprays immediately after GA application (preferably next day) for better absorption.
2. If the berry size is from 5-8mm, spray calcium & 2g Calcium Chloride or 0.5 g Ca chelate per litre. Target sprays immediately after GA application (preferably next day) for better absorption.
3. Apply magnesium sulphate through drip @ 10kg/acre from 8-10mm berry size.
4. Foliar spray of sulphate of potash @ 3g/acre at 8-10mm berry size.
5. After 8-10 mm berry size, start application of nitrogen in the form of ammonium sulphate @ 25kg /acre in 4 splits in calcareous soil and as urea @ 15 kg/acre in other soils in 3 splits. Follow this up with Sulphate of potash or 0-0-50 @ 25 kg/ acre in 3-4 splits for next two weeks.
6. If soils are calcareous, then apply zinc sulphate and ferrous sulphate @ 5 kg/acre at 65-70 days after pruning

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

- NIL

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

The following suggestions are offered for the coming week

1. In the vineyard at the stage of berry setting, retention of leaf (10 -12) above the bunch is sufficient. Above this, remove the leaf by shoot pinching
2. Try to remove side shoots. This will support to maintain aeration in the canopy
3. Train the shoots in such a way that the vineyard will have open canopy
4. Majority of the grape vineyard is experiencing due/fog which supports for leaf wetness for longer time. This condition will favor for downy mildew infection. Hence, open canopy should be given priority
5. instead of spraying fungicide continuously, empty blower can be put in the vineyard so that leaf will be dried at the earliest and the possibility of further spread of downy mildew will be less.
6. In many vineyards downy mildew infection on bunches is being observed. After berry set, only dusting of fungicide (under the conditions of wet leaf) can be taken. Use only lable claim fungicide.
7. After berry set, biological control can be considered the safest way of disease management
8. In majority of the grape vineyard sun burn symptoms on berries/grape bunches are seen. After breaking the berry the pulp is black. This is not due to sun burn. It might be the reason that continuous sprays of fungicide during hot sun has resulted into damage of berry cells. In other condition, absorption of various fungicide coupled with downy mildew infection might have created this problem.
9. Continuous use of fungicide should be avoided.
10. If one fungicide is sprayed, give sufficient time to absorb and action before starting second spray.

V. Disease management (Dr. Sujoy Saha)

Days after fruit pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
91	High	Moderate	Low	Bacterial spot-Nil Bunch rot-High

As secondary infection of downy is prevalent in many areas application of Dimethomorph@1g/L or Iprovalicarb+propineb @ 2.25g/L or Mandipropamid@ 0.8g/L may be done for downy mildew control. Two applications of Amisulbrom 17.7% SC @375ml/ha at 10-days interval will give a good control of downy mildew. In areas where dew is seen dusting of mancozeb/metiram @ 5kg/acre will give good control. Foliar spray of Trichoderma may also be given @2-3ml/L but it should not be given immediately after application of chemical fungicides. Trichoderma through drip should be continued. One spray of *Ampelomyces quisqualis* @5g/l may also be given when high humidity is prevailing for the control of powdery mildew. Preventive spray of sulphur @ 2-3g/l will also give a protection against powdery mildew at this stage. If the incidence of powdery mildew is high, application of Difenoconazole @0.5ml/L or tetraconazole @ 0.75 ml /L or hexaconazole @ 1ml/L along with potassium hydrogen carbonate or mono potassium phosphate should be done. Cyflufenamid@ 500ml/L may be sprayed in non-export crops for the control of powdery mildew. Target application of Bacillus sp or Trichoderma with hand sprayer may be done to get good results. Tank-mix of any chemicals should be strictly avoided.

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

Growth Stage: Berry development stage after October pruning

- Caterpillar and mealybug population may increase in most of the grape areas due to cloudy conditions and increase in relative humidity.
- Emamectin benzoate 5 SG @ 88 gram per acre or cyantraniliprole 10 OD @ 0.7 ml per litre water is effective against *Spodoptera* caterpillars.
- Buprofezin 25 SC @ 1.25 ml per litre water or spirotetramat 15.31 OD @ 280 ml per acre are effective against mealybugs. Soil drenching with clothianidin 50 WDG may also be given for mealybug management. Entomogenous fungus such as *Metarhizium, Beauveria* and *Lecanicillium* can be used for plant wash to reduce mealybug populations.
- Bunch webbing caterpillars may start damaging bunches in most of the grape areas where humidity is high. The most effective way to control them is to collect and kill them by hand as insecticides may not reach inside the bunch. The caterpillars on leaves are also needs to be killed as they can go inside the bunch later on. Spraying of emamectin benzoate 5 SG @ 0.22 gram per litre water or cyantraniliprole 10 OD @ 0.7 ml per litre is effective to manage them.
- Sulphur 80 WDG @ 1.5-2.0 g/L water may be applied if mite infestation is observed.