WEATHER DATA FOR THE PREVAILING WEEK

Date of Fruit Pruning: 28/09/2020

Wednesday (21/10/2020)–Wednesday(28/10/2020)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	19-22	30-31	**Nashik, Pimpalgaon Baswant, Ozar, Palkhed, Dindori, Vani** Wed & Thu- Light Rain. Fri to Sun- Drizzling. Mon to Next Wed- No Rain. **Shirdi, Loni** Wed, Sat, Sun & Tue- Drizzling. Thu- Moderate Rain. Fri & Mon- No Rain. Next Wed- Light Rain. **Niphad, Kalwan, Devla** Wed to Sun- Drizzling. Mon to Next Wed- No Rain.	Mostly Cloudy	0-10	48-62	81-100
Pune	20-22	29-31	**Pune, Phursungi, Loni Kalbhor, Uruli Kanchan, Yavat, Patas, Supa, Baramati, Narayangaon, Junnar** Wed & Thu- Light Rain. Fri & Next Wed- Drizzling.	Mostly Cloudy	0-11	58-65	90-100
Solapur	21-22	30-32	**Solapur, Nannaj, Kati, Vairag, Pangri, Barshi, Osmanabad, Latur, Ausa, Kasegaon, Atpadi-** Wed to Sun- Light Rain. Mon- Drizzling. Tue & Next Wed- No Rain. **Tuljapur, Pandharpur** Wed to Sun- Drizzling. Mon to Next Wed- No Rain.	Mostly Cloudy	2-10	54-63	83-97
Sangli	21-22	29-31	**Sangli, Miraj, Shirguppi, Kagvad, Arag**, **Kawthe Mahakal, Palus, Walva, Tasgaon, Palsi, Vita, Shetfal** Wed to Fri- Light Rain. Sat to Mon- Drizzling. Tue & Next Wed- No Rain. **Khanapur** Wed to Mon- Drizzling. Tue & Next Wed- No Rain.	Mostly Cloudy	0-13	61-69	93-100
Bijapur	21-22	28-30	**Bijapur, Tikota, Telsang**, **Chadchan** Wed to Fri- Light Rain. Sat to Mon- Drizzling. Tue & Next Wed- No Rain.	Mostly Cloudy	3-13	57-75	89-97
Hyderabad	20-22	25-29	**Hyderabad, Medchal, Zahirabad** Wed, Thu & Mon- Light Rain. Fri to Sun, Tue & Next Wed- Drizzling.	Mostly Cloudy	0-08	64-77	88-98

II. a) Days after fruit pruning: 23 days

Expected pan evaporation: Nil - 4 mm

Amount of irrigation advised:

1. In case the soil is under wapsa (field capacity) condition, donot irrigate the vineyard.
2. Most of the vineyards have already crossed cane maturity stage. The irrigation water application should be such as to avoid new shoot growth as this may lead to development of disease and pests. Emphasis should be to maintain existing leaf in healthy condition and avoid leaf fall till it is desired.
3. In areas of Solapur, Sangli and Bijapur the ground water used for irrigation contains more salt and less and poor quality irrigation water was used during Foundation pruning season, remove the mulch and allow the bund/ rootzone to be fully wet with water received from rains for leaching of salts for subsequent fruit pruning.

Shoot growth stage:

1. During shoot growth stage (fruit pruning season), apply irrigation through drip @ 3400-6800 L/ acre/ day. Further, in case vigour is more than desired, then reduce irrigation water application by half to 1700 - 3400 L/ acre.
2. Still if growth is more, stop the irrigation till such time the growth is brought under control and then start irrigation.
3. 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.

Nutrient management:

1. Due to continuous rains earlier and also improper potassium management, the canes may not be mature. It is advised to spray SOP @ 5g/L twice followed by 15-20 kg SOP/acre through drip in two splits.
2. Remove mulch applied during Foundation pruning and loosen the soil for improving movement of water through the root zone to reduce salts accumulated in the root zone. Organic mulch can be mixed in the soil to improve the porosity of the soil.

Pre-pruning operations – Fruit pruning season:

1. In many of the grape growing areas in Nasik, Sangli and other areas, continuous spells of rains were received, the soils are already saturated. This has affected the rooting activity. Due to prolonged saturation, the roots may have started 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. 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.

3. 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.
   REMEMBER: Sulphur should not be left on the surface of the bund. This will not help in removing calcium carbonate from the soil.
4. In case in calcareous soils, if SSP is applied as basal dose, mix with FYM/compost etc. to avoid phosphorus fixation.
5. Test the soil and irrigation water, to plan for nutrient and water management during fruit pruning season.
6. Efforts should be made to reduce the soil pH (pH exceeding 7.6). Apply less decomposed organic matter sources like FYM or green manure like Dhaincha etc. to the soil before pruning. Elemental sulphur @ 25-50 kg/acre could lead to more reduction in soil pH values.

Fruit pruning season:

1. If the rootzone is saturated then donot apply any fertilizer. Growth will be slow, donot worry. As and when the soil comes into field capacity (wapsa), root activity will increase and the growth will progress. After that only fertilizer should be applied.
2. Basal application should not be undertaken during this period.
3. In case organic fertilizers are applied, check the C:N ratio. Lower the C:N ratio more the nitrogen release, hence possibility of enhanced growth. Control nitrogen application based upon growth of vine.
4. 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.
5. If sodicity problem is there, apply 10 kg Sulphate of potash per acre in 2 splits this week.
6. Until and unless leaves are fully developed donot go for any foliar application of nutrients. It will lead to wastage of spray.
7. The quantity of nutrients to be applied through foliar, depends upon canopy size.
8. 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.

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)

Root activity in the vineyard:

Due to excess rains, the continuous water stagnation in the root zone resulted into blackening of roots. The feeder roots which are considered most important for the supply of nutrient and water to the vine are now missing. Under such condition, synthesis of PGR by roots will also be reduced. Following practices are suggested

a) To improve root activity, the water in the root zone need to be drained out. Hence, open a small trench in between the rows so that the excess water from root zone will be drained out.
b) Do not apply any fertilizers through soil till the time soil comes under wafsa condition.
c) Under this condition, the leaf may show symptoms of yellowing, etc. To avoid deficiency of nutrients, spray the nutrients as per the recommendations.
d) Once the soil comes under wafsa condition, loosening the bund should be done on priority. This will help for proper aeration in the root zone and thus the white root formation will be easy.
e) While loosening the bund, the root cutting may be experience. However, care should be taken that the roots are not cut more than 10%.

Fillage/bunch abortion:

Under the continuous rainfall situation, the water is saturated. In addition, the cloudy condition has also helped to increase relative humidity in the vineyard. Hence, the sudden change in increased gibberellins in the vine is experienced thus reflecting in increased vigor. The reduction in cytokinin content in the vine results into such condition thereby converting the bunch into tendril. This condition is also called as fillage. To avoid this condition, following practices are suggested.

a) Apply potash through soil (under wafsa condition) and through sprays to control the vigor.
b) Spray cytokinin based plant growth regulators.
c) Removal of water from the root zone will provide aeration and thus the root will start synthesis of PGR.

Inflorescence rot (Kooj):

Under the condition of excess and continuous rainfall, the vine vigor increases. The vineyard under pre-bloom stage will lead to form dense canopy. Under such canopy, if a small drop of water is retained on the pedicel or the peduncle of a bunch will result into rot. The dense canopy will also support to increase the relative humidity thereby encouraging the suffocative environment. Hence, to avoid these following practices are advised.

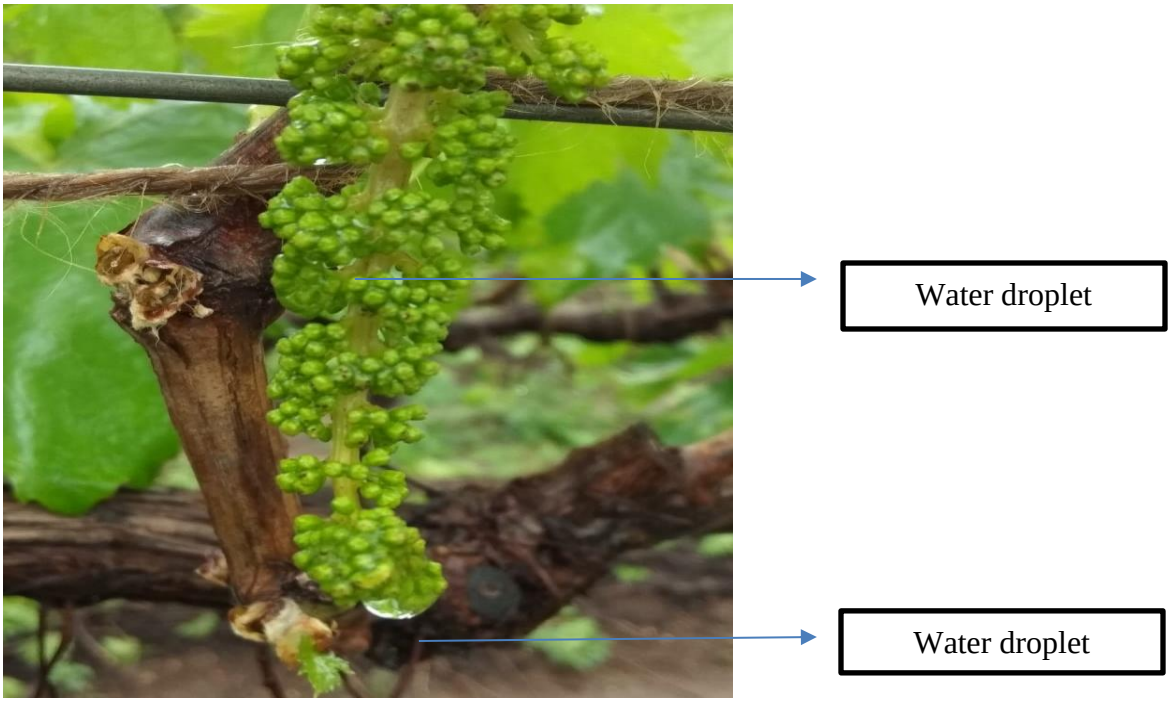
a) Removal of excess shoots at the earliest should be the priority. This can be done during 14^{th} to 18^{th} days after the fruit pruning.
b) Shoot tipping immediately will help to reduce the gibberellin content in the vine.

c) Application of potassic fertilizer either through soil or spray will also help to control vigor thereby reducing the leaf succulency.
d) Spray of any fungicides for the control of downy mildew need to be take.

V. Disease management (Dr. Sujoy Saha)

Days after fruit pruning	**Risk of diseases**			
	Downy mildew	**Powdery mildew**	**Anthracnose**	**Others (specify)**
23	High	Moderate	High	Bacterial spot

As rains are being expected in most of the grape growing areas, application of CAA fungicides viz. Dimethomorph@1g/L+mancozeb 75WP@2g/L or Iprovalicarb+propineb @ 2.25g/L or Mandipropamid@ 0.8g/L+ mancozeb 75WP@2g/L may be done for control of downy mildew, in regions which have a 5-7 leaf stage after pruning. If downy infection is heavy in certain areas, application of new fungicide amisulbrom @ 375g/ha may be done twice at 7-10 days interval. Vineyards with "ponga" stage can adopt dusting technique with mancozeb 75WP @ 5kg/acre for downy control. Potassium salt of phosphoric acid @4g/L + mancozeb 75WP@2g/L as a tank mix will also control downy mildew effectively due to high systemicity of the potassium salt of phosphoric acid. The tank-mixture of Thiophenate methyl@1g/l + Mancozeb @ 2g/l will also give a good control of mixed infection of anthracnose and bacterial spot, if any. Due to drizzle, water might get accumulated in berries and a horticultural grade oil spray may be undertaken @2ml/L which will shed the water from within. No sprays should be taken during rainfall period and an open dry period should be selected for subsequent sprays.For all fungicide applications use of any silicon based adjuvants @ 1ml/L will enhance the efficacy of spray. Drip application of Trichoderma may be given in areas where there is slight drizzle which will enable the BCA to multiply. Foliar application of Trichoderma, twice, will also bring down the anthracnose infection. No biocontrol agents should be used in areas where copper is used.



Water accumulation in berries

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 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.

Current rainfall may reduce flea beetle incidence to some extent temporarily. 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 prefera