WEATHER DATA FOR THE PREVAILING WEEK

(Assumption: Fruit Pruning date- 15/09/2019)

I. WEATHER DATA FOR THE PREVAILING WEEK
Thursday (17/10/2019) – Thursday (24/10/2019)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/ hr) Min-Max	R H%	
	Min	Max				Min	Max
Nashik	19-22	27-33	**Nashik, Ojhar, Pimpalgaon Baswant, Dindori, Vani Palkhed** Sat, Mon & Next Thu- Light Rain. Sun & Tue- Good Rain. Wed- Moderate Rain. **Shirdi, Loni** Sat & Mon- Moderate Rain. Sun & Next Thu- Light Rain. Tue & Wed- Good Rain. **Niphad, Kalwan, Devla, Satana** Sat & Wed- Good Rain. Sun- Moderate Rain. Mon & Tue- Light Rain. Next Thu- Drizzling.	Mostly Cloudy	05-17	41-72	83-94
Pune	20-22	28-32	**Pune, Phursungi** Fri, Sun, Mon & Wed- Moderate Rain. Tue & Next Thu- Light Rain. **Narayangaon, Junnar** Fri & Sun- Light Rain. Sat- Drizzling. Mon, Tue & Next Thu- Moderate Rain. Wed- Good Rain. **Loni Kalbhor, Uruli Kanchan, Yavat, Patas, Supa, Baramati** Thu- Drizzling. Fri & Tue- Good Rain. Sat & Mon- Moderate Rain. Sun, Wed & Next Thu- Light Rain.	Partly cloudy	04-17	50-71	90-94

Solapur	21-23	29-32	**Solapur, Nanaj, Kati, Pandharpur, Kasegaon, Atpadi** Thu, Fri & Mon- Good Rain. Sat, Sun & Tue to Next Thu- Moderate Rain. **Vairag, Barshi, Pangri** Thu, Sun & Wed- Good Rain. Fri- Drizzling. Sat, Mon & Wed- Moderate Rain. Next Thu- Light Rain. **Osmanabad, Tuljapur Latur, Ausa** Fri, Sun & Tue- Good Rain. Fri, Mon, Wed & Next Thu- Moderate Rain. Sat- Light Rain.	Partly cloudy	04-16	61-72	92-94
Sangli	20-22	28-31	**Sangli, Miraj, Shirguppi, Kagwad, Arag** Thu, Fri & Sun- Good Rain. Sat, Mon, Wed & Next Thu- Moderate Rain. Tue- Light Rain. **Tasgaon, Palus, Valva** , **Kavthe Mahankal**, **Vita, Palsi** Thu, Fri & Sun-Mon- Good Rain. Sat, Tue & Next Thu- Moderate Rain. Wed- Light Rain. **Shetfal** Thu, Sun, Tue to Next Thu- Moderate Rain. Fri & Mon- Good Rain. Sat- Drizzling. **Khanapur** Fri, Sat & Next Thu- Light Rain. Sun to Tue- Moderate Rain. Wed- Good Rain.	Partly cloudy	04-17	63-73	92-95
Bijapur	20-22	28-30	**Bijapur** Fri Sat- Light Rain. Sun to Wed- Moderate Rain. Next Thu- Drizzling. **Tikota, Telsang, Chadchan** Thu, Sun, Tue & Wed- Moderate Rain. Fri, Sat, Mon & Next Thu- Good Rain.	Partly cloudy	05-17	66-74	94-95

Hyderabad	21-22	28-29	**Hyderabad, Medchal, Zahirabad** Thu, Sun, Wed & Next Thu- Good Rain. Fri, Mon & Tue- Moderate Rain. Sat- Light Rain.	Partly cloudy	03-14	76-81	94-100

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: 32

b) Expected growth stage of the crop: - Early pruning stage

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

Expected pan evaporation: Nil - 5 mm

Amount of irrigation advised:

1. In many areas rainfall has been forecasted. Previous week also many areas have received abundant rains.
2. Most of the unpruned vineyards have already crossed cane maturity stage and mostly the soil is at or above wapsa condition. Donot irrigate the vineyard as any new leaf/ shoot growth will lead to development of disease and pest. 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.
4. In areas of Solapur, Sangli and Bijapur where less rainfall was received, poor quality water was used and the quantity of available water is less, it is advised to flood the rootzone(only) with water to leach out the salts and wet the entire soil depth before pruning and then cover with mulch. Thereafter irrigate as per availability of water.

Shoot growth stage:

1. If the soil is in wapsa condition, donot irrigate the vineyard.
2. 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 by half to 2500 - 4000 L/ acre.
3. 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.

During **Flowering to setting stage**, apply irrigation through drip @ 2000 to 3000L/ acre/ day. Further, in case vigour is more than desired, then reduce irrigation water application by half to 1000 to 1500L/ acre.

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 if soil is in wapsa condition.
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. **Do not 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. In case pruning is planned during October, raise Sunnhemp or Dhaincha for green manuring purpose.
3. Test the soil and irrigation water, to plan for nutrient and water management during fruit pruning season.
4. 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.
5. 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.
6. In case in calcareous soils, if SSP is applied as basal dose, mix with FYM/compost etc. to avoid phosphorus fixation.
7. 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. 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.

3. 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.
4. If sodicity problem is there, apply 10 kg Sulphate of potash per acre in 2 splits this week.
5. Until and unless leaves are fully developed donot go for any foliar application of nutrients. It will lead to wastage of spray.
6. The quantity of nutrients to be applied through foliar, depends upon canopy size.
7. 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.
8. Apply 10 kg Magnesium sulphate per acre if the crop is between 5 leaf to prebloom stage.
9. 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. Do not 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.**

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

In this week most of the grape growers may go for forward pruning. After pruning application of Hydrogen cyanamide is must but it should be applied as a swabbing only. Do not go for spraying. The application must be done based on cane thickness.

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

Canopy management

During the last week, there were continuous rains. At the time of grafting in the new vineyards, the problem faced by the grape growers and remedies to be taken up is given below.

Grafted vines: With the continuous rains, the bud sprouting on grafted plants were delayed. This was mainly due to moisture saturation in the root zone thereby reducing the root activity. Under such situation, the growers are advised for not applying any nutrients till the wapsa condition achieved in the vineyard. In the same vineyard, the shoots were tied to bamboo with the help of sutali. After sprouting of all buds on the scion, the canopy was developed. In majority of the vineyards, the newly sprouted shoot is of 7-8 leaf. This has created a dense canopy. Due to continuous rains, increased relative humidity in the atmosphere has resulted into infestation of downy mildew.

Hence, removal of 2-3 basal leaf on the shoots can support to reduce the microclimate responsible for downy mildew infestation. Retention of single shoot will also help in avoiding buildup of diseases in the newly grafted vines.

VI. Disease management (Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
32	HIGH	NIL	Moderate	Bacterial leaf spot Rust

For downy mildew control application Metiram 44% +Dimethomorph 9% WG @ 2.5g/L or Dimethomorph@1g/L + Mancozeb@2g/L(tank-mix) L or Iprovalicarb+propineb @ 2.25g/L or Mandipropamid@ 0.8g/L or Benalaxyl-M 4% +Mancozeb 65% WP @2.75g/L should be applied. In case of high humidity areas where rains are prevalent after 17th October, application of Fosetyl-Al @1.5-2g/L or potassium salt of phosphoric acid @4g/l +Mancozeb @2g/L may be done. Please note use of copper should not be done where potassium salt of phosphoric acid is used. Mancozeb will also give an additional protection against bacterial leaf spot disease. In regions where cloudy conditions are prevailing, but with high humidity, foliar application of Bacillus sp @ 2g/L or Trichoderma sp @ 4-5g/L may be done. Care should be taken not to apply biocontrol agents where copper formulations are applied. In Sangli region where anthracnose is prevalent application of thiophenate methyl @1g/L should be continued.

VII. Insect and Mite Pest Management (Dr. D.S. Yadav)

Foundation pruning growth stage: Cane maturity and afterwards

1. 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.
2. 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.
3. 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.
4. 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 broad spectrum insecticides, for example, lambda cyhalothrin 5 CS @ 2.5 ml/l.

Fruit pruning growth stage: Dormant bud

1. 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.
2. 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.
3. Give soil drenching with *Metarhizium* just after fruit pruning to manage thrips, ants and flea beetle stages in soil.