मौसम पूर्वानुमान आधारित साप्ताहिक सलाह

Weather Forecast Based Weekly Advisory

(Assumption: Fruit Pruning date - 15/09/2018)

I. Weather Data for the Prevailing Week

Thursday (27/12/2018) -- Thursday (03/01/2019)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr)	R H%	
	Min	Max				Min	Max
Nashik	10-13	26-30	**No Rain**	Clear	03-19	18-21	43-53
Pune	12-14	28-30	**No Rain**	Clear	02-15	17-21	30-46
Solapur	14-16	29-31	**No Rain**	Clear	03-11	18-22	39-55
Sangli	15-16	29-31	**No Rain**	Clear	02-09	19-24	39-54
Bijapur	14-16	28-30	**No Rain**	Clear	03-18	21-26	42-57
Hyderabad	13-16	27-29	**No Rain**	Clear	05-10	30-41	58-78

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: **101** days

b) Expected growth stage of the crop: - Veraison stage after October pruning

III. Water management (Dr. A.K. Upadhyay)

Expected pan evaporation: 3.5 to 5 mm

Amount of irrigation advised:

1. During Flowering to setting stage, apply irrigation through drip @ 2,000 to 3,500L/ acre/ day.
2. From Berry development stage onwards till maturity, apply irrigation through drip @ 6,000- 7,600 L/ acre/ day for Nasik and Pune region and from 7,600 – 8,500 for Hyderabad, Sangli, Solapur and Bijapur region.
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.

IV. Soil and Nutrient requirement (Dr. A.K. Upadhyay)

Inflorescence necrosis could be 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).

Flowering to setting stage:

1. 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.
2. Go for petiole sampling at Full bloom stage (2/3rd Cap fall stage). The petiole sampled should be opposite the bunch.

Berry Development stage:

1. After Berry setting, continue initially with Phosphoric acid application @ 5 kg in two splits this week till 8 mm berry size.
2. 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.
3. 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.
4. In the calcareous soil, spray magnesium sulphate @ 3g/L on the vines followed by fertigation of magnesium sulphate @ 10kg/acre from setting till 6-8 mm berry stage.
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. In calcareous soil, apply Zinc sulphate@ 5-10kg/acre and Ferrous sulphate @ 10kg/acre after 8-10 mm berry size separately.

Ripening to Harvest stage:

1. Apply Sulphate of potash or 0-0-50 @ 25 kg/ acre in 3-4 splits for next two weeks. Follow this up with Magnesium sulphate @ 10 kg/acre in two splits. Spray Magnesium sulphate in calcareous soil.

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

- At this time every grape grower might have completed all the application of GA & CPPU and they are free to go for flood irrigation, but don't apply flood irrigation. Though this week temperature will not be below 10^{o} C in all the regions, however it may lead to "Ukadya" a physiological Disorder.
- Apply sufficient /optimum irrigation on "Bodh" only and keep the moisture level at field capacity to get maximum increase in berry size.

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

As per the weather prediction, the minimum temperature in different regions is reducing. In Nashik, the minimum temperature has already dropped below 3^{0}C. In coming week, the temperature is likely to be below 10^{0}C. However, in Sangali, Solapur and Indapur area, the minimum temperature is expected to be around 14-15^{0}C. The grape vineyard under low temperature will have difficulties in completing the physiological processes. Hence, under such situation the growers may face the following problems.

1) **Pink berry formation:** The increase in maximum temperature (upto 35^{0}C) during day time and reduction in night temperature (below 7^{0}C) in the vineyard will result into formation of pink pigmentation in the grape berries. When the gap between minimum and maximum temperature widens, the green pigment changes into pink causing pink berry syndrome. This is one of the major physiological disorders in green colour grapes.

This condition is generally seen at the time of berry veraision stage. The problem can be overcome by reducing the gap between maximum and minimum temperature. So far, no chemical have been found effective in controlling the pink berry. Hence, covering the individual bunch with paper is the only solution at present. Bunches are to be covered with paper 8-10 days before the veraision. Before covering bunches, following precautions are to be taken.

i) Preventive spray for the control of powdery mildew.

ii) Preventive spray for the control of mealy bug.

2) **Scorching on leaf and reduced berry growth:** Under the situation of reduction in night temperature, the vine stops functioning physiologically thereby the berry growth hampers. In addition, the cells in the leaf exposed to the sky damages due to severe cold. The green pigment in the leaf dries converting in to scorching symptoms. Majority of the grape growers are spraying micro nutrients and also major nutrient for better berry growth during low temperature condition. However, this does not help. To control this situation, following measures are suggested.

a) Irrigation in the vineyard

b) Creation of heat in the vineyard by making the fire.

c) Mulching on the bund.

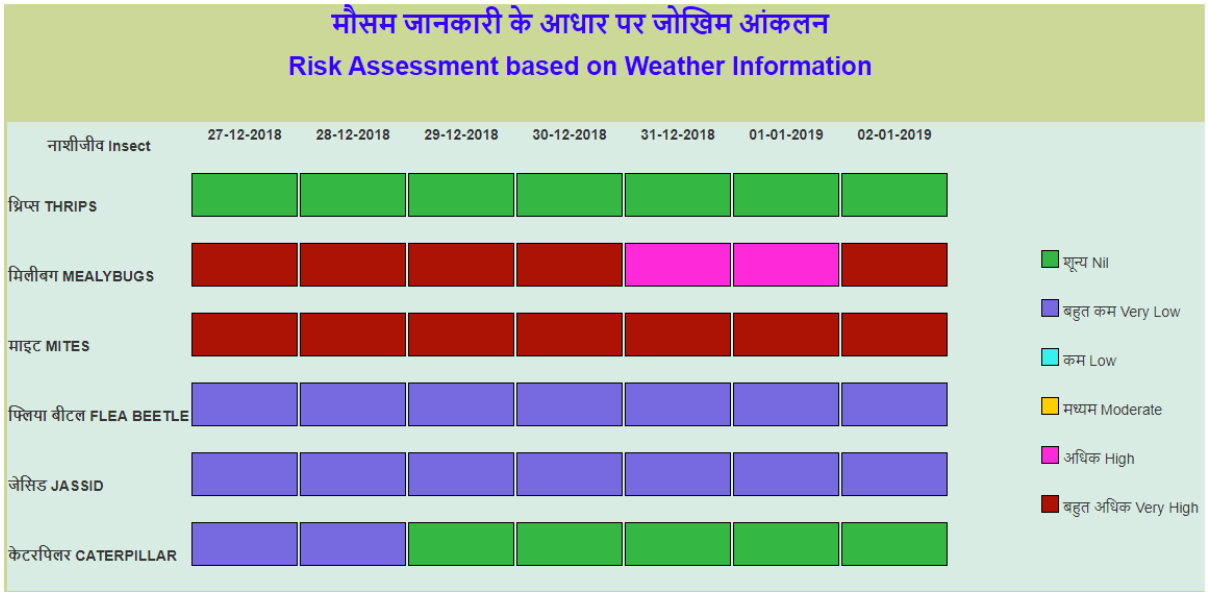
The above measures will help to increase the temperature in the vineyard thereby supporting the vine for accelerating the physiological process through root activation

VII. Disease management (Dr. S.D. Sawant and Dr. Sujoy Saha)

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

In case of powdery mildew management, application of sulphur 80WP@2g/L or *Ampelomyces quisqualis* @6-8g/L(where there is low temperature) at this stage will also be beneficial. As temperature is low in Nashik region application of *Ampelomyces quisqualis* is preferred. Berry cracking and Ukdaya is a problem which is associated with untimely rainfall, excess irrigation as well as variation in diurnal temperature. Application of potash/potassium will be beneficial at this stage in the form of potassium-bi-carbonate. If potassium salts of phosphoric acid had been applied earlier, it will be beneficial at this stage. Application of formulations of silicon (silicic acid) will also give resistance to diseases as well as increase the shelf life of the berries. To elevate the temperature in vines so as to avoid frost injury bonfires may be organized with utmost care so as not to damage the vines.1-2 applications of chitosan@2g/L will help in avoiding berry cracking.

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



- Entomogenous fungus such as *Metarhizium, Beauveria* and *Lecanicillium* can be used for plant wash at 15 days interval to reduce mealybug populations. If, insecticide application seems inevitable, the only buprofezin 25 SC @ 1.25 ml/L water (PHI 45 days) may be used for management of mealybugs as this insecticide does not harm beneficial organisms in the vineyard.
- Sulphur 80 WDG @ 1.5-2.0 g/L water may be applied if mite infestation is observed.

Crop advisory relevant to different places is prepared by experts, considering forecasted weather, crop growth stages in majority of vineyards and ground information on incidence of different conditions in different grape growing areas received from regular interaction with progressive grape growers. No claims are made on its correctness.

Usefulness of this information may be communicated to us at director.nrcg@icar.gov.in.