

## ICAR-National Research Centre for Grapes, Pune – 412 307

### **Report on flood affected grape gardens of Walwa tal. (Dist. Sangli)**

Due to incessant rains received in the first week of August, 2019 in Sangli, Satara and Kolhapur, many areas were submerged. In Walwa and Nagthane areas in Sangli, 650-670 mm of rains were received leading to submergence of many vineyards in these areas. In the area, approximate 3000 acre area is under grapes and according to the growers of that area approximately 30 per cent of the vineyards were affected by flood. The vineyards are in foundation pruning season with majority of them under cane maturity stage. A request was received from grape growers of Walwa area and Dr. T. S. Mungare, AGM, MRDBS, Pune for visit to the area and subsequently to guide the grape growers for managing the vineyards submerged during that period. Accordingly, Dr. R. G. Somkuwar and Dr. A. K. Upadhyay, scientists from Horticulture and Soil Science discipline were deputed to visit affected vineyard on 16.08.2019. Subsequently, Dr Sujoy Saha and Dr Deependra S. Yadav, scientists from Pathology and Entomology visited the affected vineyards on 20.08.2019.

On 16<sup>th</sup> August, they visited seven vineyards in Nagthane and Walwa area followed by another three vineyards on 20.08.2019. The plots were earlier submerged due to flood and also experienced heavy rains. The vineyards visited ranged from rootstock planted to framework developed stage to mature vineyards of 7-8 years of age. The vineyards had silt deposit due to flooding and wherever they were submerged the leaves of the grapevines were covered with silt. In vineyards where submergence was not there, leaves were damaged due to heavy rains. After the field visit, 'charchasatra' was organised in Walwa where approximately 500 farmers were present. Apart from Scientists from ICAR-NRC Grapes, Mr Basavraj, Project Director (ATMA) along with his staff and representatives of MRDBS participated in the 'charchasatra'. Following advice was given to the affected growers:

- 1) **Complete leaf drying on mature cane:** The vineyards under submergence for 10-12 days had all the leaves defoliated or the canes and leaves had dried and were covered with silt leading to possible defoliation. The canes were already mature but covered with silt. As the monsoon activity has stopped, the temperature and relative humidity in the vineyards would increase leading to initiation of bud sprouting. The vines needed to be stayed with

water to wash out the silt from the canes, cordons etc. as far as possible. **Early fruit pruning under such conditions was recommended.**

- 2) **The lateral half shoot is green:** In the vineyard where framework development was in progress, the lateral half cane was green and yet to mature. The leaves were generally green in the greener portion of the cane. The cane maturity need to be attained before fruit pruning. The buds in the green portion of canes are likely to sprout earlier and develop faster. **Two –three buds should be allowed to sprout so that, the buds on mature portions continue to remain dormant.** This will help to delay fruit pruning by 10 to 15 days. The new sprouts should be allowed to grow and pinched at 5-6 leaf. Application of potash through spray (0:0:50 @ 2-3 g/L water) and soil application through drip @ 15 kg/acre in two splits (weekly interval) will help to initiate cane maturity.
- 3) **Saturated root zone:** The root zone is fully saturated due to prolonged submergence. The possibility of extensive root damage exists. The vineyard should be allowed to come to field capacity (wapsa) before any intervention in the soil is made.
- 4) **Silt deposit in vineyard:** This is especially more applicable in those vineyards which are along the river course. The silt so deposited on the soil could lead to concreting action as they are very fine in size. This will hamper the aeration as well penetration of water along with nutrients to the root zone. There is a need to disturb the upper silt deposited layer either by mixing with FYM/ compost/ organic matter or mixing of silt with the underlain soil.
- 5) **Application of fertilizer:** Presently the root zone was fully saturated with water. Under such conditions of submergence, feeder roots were extensively damaged. The application of fertilizer at this stage will not be required as the root is not active and possibility of leaching exists. Hence, growers need to wait for soil to come at field capacity (wapsa). After field capacity(wapsa) is achieved, fertilizer application should be through drip only. Major soil intervention in terms of organic matter addition should be avoided atleast for one to two weeks to allow roots to develop and proliferate in root zone.
- 6) **The vineyard faced heavy rainfall:** Some of the vineyard faced heavy and continuous rainfall for about 8-10 days. The water stagnated in the vineyard for prolonged period. With the increased humidity and reduced temperature, the rust incidence was severe. As conditions were not conducive for spraying, the grower could not control rust. About 70-

80% leaves were affected due to the heavy incidence of rust. In addition, the threat of downy mildew, anthracnose and bacterial blight was also there. Considering these, the growers were advised to spray for the following diseases:

a) **Control of rust:** Spray of hexaconazole @ 1 ml/L water or tetraconazole @ 0.75 ml/L or fuzilazole @ 12.5 ml/L or difenconazole @ 0.5 ml/L water at the interval of 5 days was recommended. Tebuconazole @ 0.5ml/L water or tebuconazole @ 0.5 ml/L + trifloxistrobin @ 1.75 ml/L water can also give good control of rust.

**As a preventive measure:** In the garden where rust is not a problem or the incidence is just initiated: Spray of chlorothalonil @ 2.0 g/L water or copper oxychloride/hydroxide @ 2.5 g/L water was recommended.

b) **Control of anthracnose:** Thiophenate methyl @ 1.0ml/L or carbendazim @ 1.0g/L spray will help to control the disease. Under the severe damage by anthracnose, spray of fluopyram + tebuconazole @ 0.5 ml/L water at 5-7 days interval will help to control the disease.

c) **Control of downy mildew:** Removal of new shoots and spray of potassium salt of phosphoric acid @4.0g/L water + mancozeb @ 2.0 g/L. The above spray will also help to control bacterial blight in the vineyard.

d) **Control of bacterial spot:** Application of Mancozeb 75WP @2.5g/L will control bacterial spot. Repeat spray after 5-7 days.

7) There was no incidence of any insect pests in the surveyed flood affected vineyards. The farmers were advised to monitor for caterpillar and thrips incidences after fruit pruning. The farmers were also advised to visit weather forecast based weekly advisory page on our Centre's website and/or subscribe mobile applications who have access to our Decision Support System API service.



Fig.1: Grape vineyard and rootstock garden submerged in water for 12 days



Fig. 2: Grape vineyard after water was drained out. Note silt deposit on leaves (left) and on soil (right)



Fig. 3: Field visit by the scientist of ICAR-NRCG, Pune in affected area on 16<sup>th</sup> Aug., 2019



Fig. 4: Scientist of ICAR-NRCG, Pune guiding the grape growers on 16<sup>th</sup> Aug., 2019



Fig. 5: Field visit by the scientist of ICAR-NRCG, Pune in affected area followed by group discussion on 20<sup>th</sup> Aug., 2019