ICAR-National Research Center for Grapes, Manjri, Pune is engaged in developing appropriate and economically viable agro techniques for quality grape production and to sustain the productivity and quality through management of biotic and abiotic stresses.

During our visit to the institute on 25th July 2018 we had the opportunity to see their field station.

Grape leaf samples (healthy and anthracnose, bacterial spot, and powdery mildew infected) as well as active pathogen cultures were provided by Dr. Indu Sawant and Dr. Sujoy Saha (ICAR-NRC for Grapes).

Many thanks to Director of the ICAR-NRC for Grapes for his kind support.

**Bacterial leaf spot of grapes**, caused by *Xanthomonas campestris pv. viticola* is an important disease of grapes.

The young growing shoots are affected first. Disease infects leaves, shoots and berries. The symptoms appear as minute water soaked spots on the lower surface of the leaves along the main and lateral veins.
The pathogen survives in infected plant residue in soil and seed borne.

Temperature range of 25-30 °C and relative humidity of 80-90% is favourable for the development of the disease.

**Powdery mildew**, is caused by the fungus *Erysiphe necator*, and can infect all green tissues of the grapevine. Tissues are susceptible to infection throughout the growing season.
Diseased leaves appear whitish gray, dusty, or have a powdery white appearance. Petioles, cluster stems, and green shoots look distorted or stunted.

Note the fungal mycelia growing off the grape leaf surface

The powdery mildew fungus overwinters in dormant buds or as specialized structures on the surface of the vines. When conditions are favorable for growth of the fungus in spring, spores are produced, released, and cause new infections.

Secondary spread of the disease can occur if spores are produced in these new infections. High humidity and moist weather favours the development of disease.
Disease information/description as on Vikaspedia website: