



Study of Current Status of Occurrence and Distribution of bacterial blight of pomegranate caused by *Xanthomonas axonopodis* PV *punicae* in Southwestern Region of Maharashtra State

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ABSTRACT

*Pomegranate is an important commercial fruit crop of an Indian farmer. It has occupied considerable economy of Indian and overseas fruit market. In Maharashtra also, pomegranate is cultivated as an important cash crop. Pomegranate is mainly cultivated in Pune, Ahmednagar, Sangli, Solapur and Washim districts of Maharashtra. In Maharashtra, the area under pomegranate cultivation is about 1.32 lakh hectares. This area is increasing day by day. However, a variety of diseases affect the yield of pomegranate adversely. One of them is the bacterial blight disease [B. B. D.] of pomegranate caused by *Xanthomonas axonopodis* PV *punicae*. Every pomegranate cultivating area is affected by bacterial blight of pomegranate. A survey was carried out in Southwestern region of Maharashtra to determine the occurrence and distribution of the disease in these regions of Maharashtra. To collect the primary data, a survey was carried out by an interview with the growers. Random samples were collected from the fields and final conclusions were drawn.*

Key words: BBD, survey, South western Maharashtra, pomegranate.

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INTRODUCTION

Pomegranate is an important commercial fruit crop of an Indian farmer. It is called 'Fruit of paradise' due to its multiple uses. Its fruit, stem and leaves all have medicinal uses [1]. The economy of Indian fruit farmers is much dependent on the pomegranate. However, the pomegranate crop is adversely affected by a variety of plant pathogens. One of them is Bacterial Blight Disease of pomegranate [BBD] caused by *Xanthomonas axonopodis* PV *punicae*. The disease is highly destructive and decreases the yield of pomegranate considerably; sometimes up to 90% decrease in the yield is also observed. Day by day cultivation of pomegranate is becoming hard for farmers. The pomegranate growers are trying their best to control the trouble of bacterial blight disease of pomegranate. However, no any remedy has been observed to eliminate this problem completely. The bacterial blight disorder is principal obstacle in further development of pomegranate cultivation. It has become a negative factor of pomegranate orchards. The pomegranate is cultivated as a cash crop in all the districts of Maharashtra [3]. But, its location, manufacturing and productiveness differ widely. The epidemic spread of bacterial blight ailment came about in each pomegranate district of Maharashtra. Consequently, complete state became taken into consideration for look at. The study was carried out to study the occurrence and distribution of bacterial blight of pomegranate in Southwestern region of Maharashtra. Random sampling method was used to interview the growers. In addition, the data was collected from reference books, journals and magazines and newspapers [4].

MATERIALS AND METHODS

Almost every pomegranate cultivating field from Southwestern Maharashtra state was selected. The southwestern Maharashtra includes Sindhudurg, Ratnagiri, Raigad, Mumbai, Thane [Konkan region], Kolhapur, Sangli, Satara, and Pune [Pune region] [Map 1]. The farmers were asked the questions directly or sometimes on telephonic discussion. Sometimes, the information was collected from the reference materials, articles, books also. The farmers were asked the questions regarding the area under cultivation, the variety of pomegranate they cultivate, the season of cultivation, the approximate number of affected

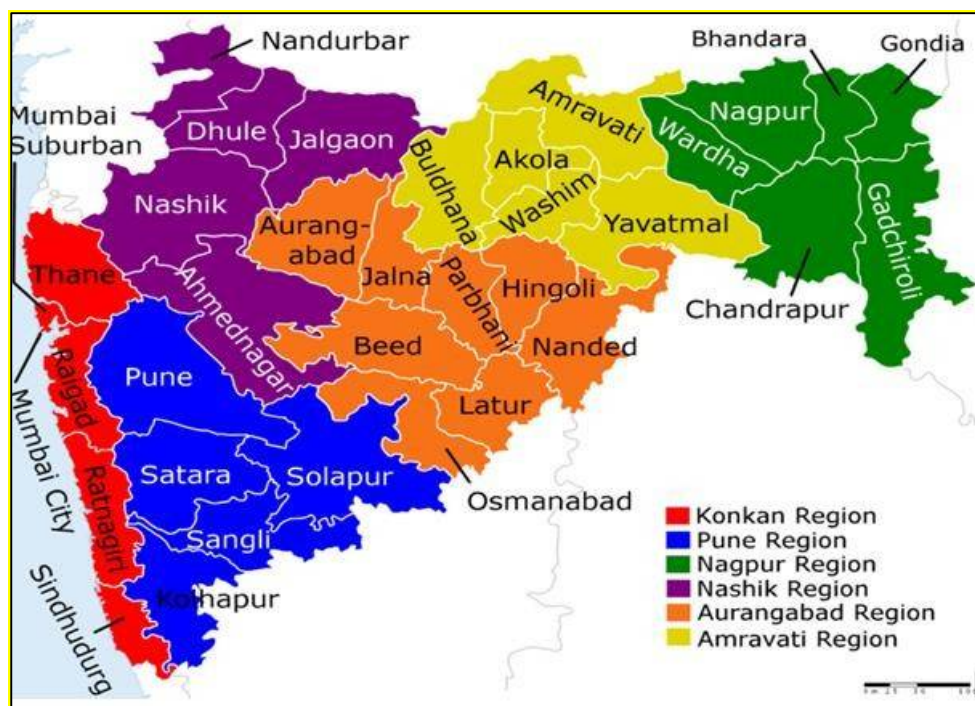
plants, the actual economic loss caused, the control methods they use and the control method they expect. All the data was properly organized and conclusions were drawn.

RESULT AND DISCUSSION

The occurrence and distribution of the disease was studied in all the regions of southwestern Maharashtra. These regions included Sindhudurg, Ratnagiri, Raigad, Mumbai, Thane [Konkan region], Kolhapur, Sangli, Satara, and Pune [Pune region].

The commonly cultivated varieties of pomegranate in these areas were found to be Arakta, Bhagwa, Ganesh and Mrudula. Few growers tried to cultivate Ruby variety imported from Karnataka. However, it was found that this variety cannot sustain in agro-climatic conditions of Maharashtra. All these varieties were found to be sensitive to bacterial blight disease [5]. In all these regions, the organism responsible for Bacterial Blight Disease of pomegranate was found to be '*Xanthomonas axonopodis* sp. *Punicae*'. Initially, brown to black spots is developed on the surface of leaves, fruits and stems. The spots later on enlarged and produced typical oily spots on the plant parts [2]. The disease was developed on the plant parts in all the three planting seasons viz. MrugBahar, AmbeBahar and Hast Bahar. No any season is excluded from the disease. The favorable temperature for development of the disease was found to be 9°C to 43° C. The humidity below 80% was found to be favorable for the disease. It was very difficult for the growers to state the basic cause of infection of the plant. After onset, the disease is capable of damaging the whole orchard within 15 to 30 days. However, the extent of the loss varies from one orchard to other depending on the severity of the infection.

The maximum growers prefer the use of chemicals like streptomycin for the control of the disease. However, some prefer to use botanicals like cow dung, neem leaf powder, camphor powder etc. The financial support and subsidy given by the government is not sufficient to control the disease. Extra help must be poured from the government to sustain the pomegranate growers. As per the view of scientists, an integrated approach is needed in relation to every component of pomegranate price chain starting from plantation up to advertising (viz. Nursery holders, harvesting, growers, middleman, contractors, labours, transporters, agro-chemical corporations, government agricultural officers and pomegranate consultants) to control the economic loss caused by the disease. It will build a self confidence in pomegranate growers [5]. All the present control measures have been failed. Hence, instead of giving the subsidy and monetary help, the funds must be diverted to develop the disease resistant varieties and development of 'pomegranate sickness diagnostic center' in pomegranate developing areas. It is advised to the farmers that they should plant another hardy fruit plants like ber, amla, custard apple, mango in alternate rows or among bushes. It will generate additional monetary benefit to compensate the losses caused by bacterial blight of pomegranate [2, 3].



Map 1: Map of Maharashtra Showing Various Regions

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