
SHORT COMMUNICATION

Screening of pomegranate genotypes for anthracnose disease resistance

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Pomegranate is a commercially important fruit of both tropical and subtropical countries. The most popular varieties in India are *Ganesh*, *Mridula*, *Arakta*, *Bhagwa (Kesar)*. It suffer from several economically important disease like anthracnose, caused by *Colletotrichum gloeosporioides* (Penz.) Penz. and Sacc. which has become a potentially destructive disease both under field and post-harvest storage conditions. In severely affected orchards, defoliation, dropping of flowers and fruit occurred resulting in drastic reduction of fruit yield while after harvest it reduce the market value of fruits. With an aim to search for resistance genotypes against anthracnose, 19 genotypes were evaluated under *in vitro* conditions using detached leaf technique. Among them *Ganesh*, *Araktha* and *Kesar* were found to be susceptible and but none of them were resistant.

Key words : Pomegranate genotypes, anthracnose, screening

Pomegranate (*Punica granatum* L.) is extensively cultivated in the Mediterranean and other parts of world including India. It is regarded as the "Fruit of Paradise". In India, it is regarded as a "vital cash crop", grown in an area of 1.5 lakh ha with a production of 11.0 lakh tons. Successful cultivation of pomegranate in recent years has met with different problems such as pests and diseases. Among the various fungal diseases, anthracnose caused by *Colletotrichum gloeosporioides* (Penz.) Penz. and Sacc. is one of the most serious disease of pomegranate and reduces fruit quality to a greater extent. Propagules of pathogen cause lesions and decay of the fruit. The screening for disease resistance is essential to identify resistant variety / source. Resistant variety is one of the best ways in reducing loss due to disease. However, there is need to screen the genotypes against anthracnose of pomegranate. Hence, screening of the genotypes has been studied.

Nineteen pomegranate cultivars (*Araktha*, *Alandi*, *Ganesh*, *GUT-C-Shah rose pink*, *G-137*, *Jalore*

seedless, *Jodhpur red*, *Jural anar*, *Jyoti*, *Kabuli*, *Kaladgi local*, *Kandar*, *Kesar*, *Mridula*, *Muskot*, *RCR*, *Ruby*, *Speen dahedar*, *Yeronad*) were selected from glass house of Department of Plant Pathology, College of Agriculture, University of Agricultural Sciences, Dharwad and detached leaf inoculation technique was used for screening under artificial inoculation (Tuite, 1969)

Five young leaves from each genotype were selected and detached from the plant, washed thoroughly with distilled sterile water, swabbed with 1 per cent sodium hypochlorite and washed with sterile water and inoculated with inoculum 5 mm disc of 12 days old culture. Control was maintained by spraying sterile water only. Moist cotton swab was placed at the base of petiole. The leaves were kept in Petriplates lined with moist blotting paper to maintain humidity.

Further, these plates were placed in humid chamber and incubated at 27±1°C for 12 days. After 12 days of incubation the genotypes were evaluated for their reaction on 0-5 scale (NRCP, Sullapur). The varieties were classified as follows.

Grade	Per cent leaf area covered	Reaction
0	No disease	Immune
1	0 – 5.0	Resistant
2	5.1 -10.0	Moderately resistant
3	10.1 – 25.0	Moderately susceptible
4	25.1 – 50.0	Susceptible
5	>50.0	Highly susceptible

The management of disease through host plant resistance has been an important choice in all crop improvement programme. Utilization of resistance is most simple, effective and economical method in the management of biotic stress. Besides, the resistant cultivars conserve natural resources and reduce the cost, time and energy when compared to other methods of disease management. Increase in use of fungicides to control the anthracnose has led to consciousness of their persistence and development of new strains of pathogen. To avoid this situation, identifying the resistant cultivars against anthracnose is most significant one.

Nineteen pomegranate cultivars were screened for their reaction under artificial condition. None of them were resistant to anthracnose fungus (Table 1). Three cultivars viz., *Ganesh*, *Araktha* and *Kesar* showed susceptible reaction where as sixteen cultivars showed moderately susceptible reaction. The results are in agreement with findings

Table 1: Screening of pomegranate genotypes against *Colletotrichum gloeosporioides* by detached leaf technique

Genotypes	Disease reaction
Araktha	S
Alandi	MS
Ganesh	S
GUT-C-Shah rose pink	MS
G-137	MS
Jalore seedless	MS
Jodhpur red	MS
Jural anar	MS
Jyoti	MS
Kabuli	MS
Kaladgi local	MS
Kandar	MS
Kesar	S
Mridula	MS
Muskot	MS
RCR	MS
Ruby	MS
Speen dahedar	MS
Yeronad	MS

S=Susceptible, MS=Moderately Susceptible

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