

## Tree Decline in Pomegranate (*Punica granatum* L.)

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Pomegranate (*Punica granatum* L.) is one of the major economic fruit crop of arid and semiarid zone of Maharashtra. Except for fruit borer, this crop is free from serious pests and diseases. However, some new types of disease symptoms have been noticed during recent past. The plants initially exhibit symptoms on leaves and leads to tree deterioration. The fruits from such tree are poor in quality as get rottened or blackend inside.

Leaf symptoms leading to tree deterioration were observed during February 1989 in an area of about 30 ha planted with pomegranate cv Ganesh in 1974, at Mahatma Phule Agricultural University,

Rahuri, Maharashtra. These plants are growing on light textured soil with pH 8.2, OC 0.39%, N 0.016%, available P 0.0007%, K 0.017% and EC 0.38 dSm<sup>-1</sup>.

This research note is an attempt to put them on record.

The details of leaf symptoms of declining tree are described in Table 1 and depicted in Fig.1.

Out of 1080 tree observed for extent of tree decline, only 204 plants were absolutely healthy and remaining plants showed deterioration. They were

Table 1 Leaf symptoms and number of plants showing such symptoms

| Figure number | Description of symptoms  |
|---------------|--|
| 1.1           | Mid and lateral veins yellowish white against feded background (45 7.5%)   |
| 1.2           | The veins green and other laminal portion becomes whitish yellow (170 28.3%)   |
| 1.3           | Ground colour chlorotic with green dots (island) on it, the half side of leaf advancing faster. (90 15%)                                       |
| 1.4           | Well demarked yellow spots, blotches against dark green lamina and leaf leathery. leaf shape changed. (20 3.3%)                                |
| 1.5           | The chlorosis starting from leaf margin and progressing toward mid vein. (240 40%)   |
| 1.6           | Main and lateral veins and adjacent area whitish yellow, yellowing starts first from basal end leaf marginal necrosis from tip area. (35 5.8%) |
| 1.7           | Healthy leaf, no symptoms of above types   |

Figure in parenthesis are number of plant showing symptoms and % of total

Table 2 Category of tree decline, its description and the number of plant in each category

| Deterioration category | Description   |
|------------------------|---|
| Start                  | The plants showing the leaf symptoms appear sickly, shoot drying started. (486 45%)                       |
| upto 25%               | Shoot and twings dried, mild leaf symptoms (200 18.5%)  |
| 25 to 50%              | Drying process affected secondary branches, leaf symptoms well marked. (173 16%)                          |
| 50 to 75%              | Some of the main branches dried. Plant unproductive.(6 0.5%)  |
| > 75%                  | Majority of main branches dried. No plant canopy. Plant totally unproductive. Death of the plant. (111 %) |
| Healthy                | No symptoms observed. No twig drying, lush green. Good bearing. (204 19%)                                 |

Figures in parenthesis are number of plants and % of total

classified according to the degree of deterioration (Table 2).

Decline of this kind has not been earlier reported from Maharashtra, thus studies in relation

to nutrition, association of pathological and physiological factors, if any and also seasonal variation symptoms need to be undertaken.

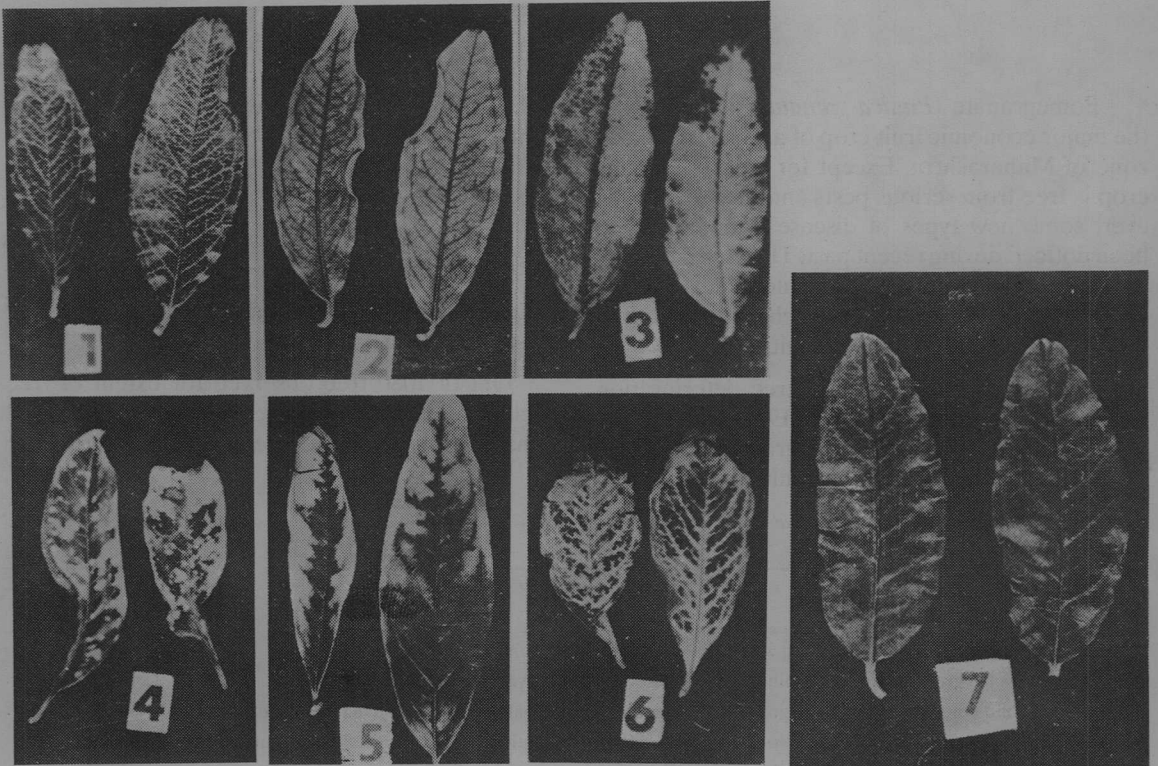


Fig 1 Symptoms on deteriorating pomegranate trees leaves

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