Management of black spot disease of rose caused by *Diplocarpon rosae* with fungicides and cultural practices

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Rose is the best known and most popular of garden flower throughout the world and is one of the nature’s beautiful creations. It is universally acclaimed as the “queen of flower”. No other flower is a better symbol of love, adoration, innocence and other virtues than the rose.

The black spot disease caused by *Diplocarpon rosae* Wolf. (*Marssonina rosae*) is the most important disease of cultivated roses throughout the world particularly, so in areas of high rainfall. Under field conditions, the treatment comprising Thiophanate methyl + Potash was most effective in managing black spot disease of rose followed by the other treatments viz, Thiophanate methyl + Silicon, Carbendazim + Potash and Carbendazim + Silicon.

SUMMARY

The black spot disease caused by *Diplocarpon rosae* Wolf. (*Marssonina rosae*) is the most important disease of cultivated roses throughout the world particularly, so in areas of high rainfall. Under field conditions, the treatment comprising Thiophanate methyl + Potash was most effective in managing black spot disease of rose followed by the other treatments viz, Thiophanate methyl + Silicon, Carbendazim + Potash and Carbendazim + Silicon.

The trial was conducted in a Randomized Block Design with three replications at Department of Agronomy, Br. B.S. Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri, during Kharif season of 2009 using rose variety ‘Sophia Lorens’. The two fungicides namely, Thiophanate methyl and Carbendazim were used in combination with cultural practices like mulching, potash and silicon application for the control of black spot of rose. In the beginning of Kharif season all cultural practices were applied as, 10 cm layer of paddy straw mulch placed around the base of plants, application of 60g potash per plant through muriate of potash and 10g silicon per plant through silica. Both the fungicides were applied at 0.2 per cent concentration. The spraying was done at 10 days interval starting from June month up to the end of Kharif season. Observations on disease incidence were recorded on fifteen randomly selected compound leaves from each plant on the basis of 0-5 disease rating scale suggested by Sharma and Singh (2002) viz., 0 = No infection, 1 = Small brownish flecks covering less than 1 per cent of the leaf area, 2 = Brownish to black small lesions on leaves covering 1-10 per cent of the leaf area, 3 = Characteristics black spots with radiating.
fringe like margins, increasing in size covering 11-25 per cent of the leaf area, 4 = Characteristics lesions covering 26-50 per cent of leaf area and moderate defoliation, 5 = Lesions coalesced, covering more than 50 per cent of the leaf area, heavy defoliation.

The data presented in the Table 1 indicated that all the treatments were significantly superior over control in reducing disease incidence. The disease incidence was lower in treatment T₂ followed by T₃ which were at par with each other and significantly effective over all other treatments. These were followed by T₄ and T₆ which were at par with each other and significantly effective over remaining treatments. As usual, T₁ and T₄ were least effective treatments and at par with each other and significantly differed from control.

The treatment comprising T₂ was most effective and recorded 45.43 per cent disease control (PDC). The other effective treatments were T₃ with 44.66 PDC, T₄ with 42.09 PDC and T₆ with 41.49 PDC. T₁ with 32.66 PDC and T₄ with 30.11 PDC were least effective.

These results are in similar lines with those of Vlasveld (1977) who recommended the use of thiophanate methyl and carbendazim against *Diplocarpon rosae*. Maljaja et al. (1997) observed that spraying of 0.2 per cent carbendazim recorded lower black spot incidence and higher yield. Jalal and Sarhan (1988) reported that application of potassium fertilizers made plants resistant to foliar disease. Sharma and Kolte (1994) reported that the severity of black spot disease of oilseed rape was significantly lower when muriate of potash was applied to the plants. Gillman and Zlesak (2000) observed that effective control of black spot disease of rose was achieved with the application of silicon.

<table>
<thead>
<tr>
<th>Tr. No.</th>
<th>Treatments</th>
<th>Mean PDI</th>
<th>PDC</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paddy straw mulching + Thiophanate methyl sprays</td>
<td>33.50 (35.37)</td>
<td>32.66</td>
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<tr>
<td>2.</td>
<td>Potash application + Thiophanate methyl sprays</td>
<td>27.15 (31.40)</td>
<td>45.43</td>
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<tr>
<td>3.</td>
<td>Silicon application + Thiophanate methyl sprays</td>
<td>27.53 (31.65)</td>
<td>44.66</td>
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<tr>
<td>4.</td>
<td>Paddy straw mulching + Carbendazim sprays</td>
<td>34.77 (36.13)</td>
<td>30.11</td>
</tr>
<tr>
<td>5.</td>
<td>Potash application + Carbendazim sprays</td>
<td>28.81 (32.46)</td>
<td>42.09</td>
</tr>
<tr>
<td>6.</td>
<td>Silicon application + Carbendazim sprays</td>
<td>29.11 (32.65)</td>
<td>41.49</td>
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<tr>
<td>7.</td>
<td>Control</td>
<td>49.75 (44.86)</td>
<td></td>
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</tbody>
</table>

S.E. ±: 0.39  C.D. (P=0.05) : 1.19

*Figures in the parentheses are arc sin values

**REFERENCES**


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