Fungicidal management of leaf spot of turmeric incited by Colletotrichum capsici

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In Cuddapah District of Andhra Pradesh, turmeric (Curcuma longa L.) variety Mydukur is extensively grown which is highly susceptible to leaf spot caused by Colletotrichum capsici (Syd.) Butler and Bisby. Leaf spot predominates in the turmeric growing areas and very often taking a severe form resulting in reduced yields. Yield losses due to this disease were estimated to occur in the range of 15-60% by various workers under different conditions (2).

An experiment was conducted at Agricultural Research Station, Anantharajupet, Acharya N.G. Ranga Agricultural University during July, 1999 - March, 2000 and July, 2000 - March, 2001 which is an endemic area for the Colletotrichum leaf spot disease of turmeric. The experiment was laid out in a randomised block design with three replications. Indofil M-45 (0.25%). Blitox (0.3%). Hinosan (0.1%). Kavach (0.1%). Bavistin (0.1%). Topsin-M (0.1%). Calixin (0.1%). Kitazin (0.1%). Neem oil (0.8%) were used for chemical control of the disease and a water sprayed check was also kept. First fungicidal spray was given prophylactically during August before the incidence of the disease and consequent three sprays were given at 15 days interval. Disease intensity was recorded in each treatment following the 0-6 scale. Final percent disease index (PDI) and yield were recorded for each treatment. Recovery of cured rhizomes calculated at 20% of fresh weight. Benefit cost ratio was calculated for each fungicide by dividing net returns obtained by input cost.

Colletotrichum leaf spot appeared two months after planting. Among the fungicides evaluated Topsin-M (0.1%) was found to be effective followed by Indofil M-45 (0.25%) and Bavistin (0.1%). When disease incidence and yield were taken in to consideration Neem oil was least effective. Neem oil and blitox recorded very poor vigour of the turmeric plants and rhizome yield was also less when compared to other fungicides. Copper fungicides were found to be ineffective and phytotoxic on turmeric (1,3,4). Highly significant negative correlation between the percentage of infection and yield was observed. For the effective management of Colletotrichum leaf spot first prophylactic spray before the incidence of the disease is important. Generally farmers start sprayings after the incidence of the leaf spot which will not control the disease completely even with six fungicidal sprays. Since turmeric crop is a long duration commercial crop and involves high investment, the reduction in yield due to leaf spot incidence results in heavy monetary loss to the farmers. Hence, the study was undertaken to recommend to effective chemical with minimum number of sprays. Benefit cost ratio was worked out based on net returns concept for each fungicide used in the management of Colletotrichum leaf spot on turmeric. Among the fungicides evaluated Indofil M-45 @ 0.25% recorded highest B:C ratio of 6.8 and 6.2 followed by Bavistin @ 0.1% 6.1 and 4.6 and Topsin-M @ 0.1%, 4.6 and 4.2 during 1999-2000 and 2000-2001 respectively. In the case of Topsin - M though an increased yield of 30.1 Q ha⁻¹ in 1999-2000 and 27.82 Q ha⁻¹ in 2000-2001 was realised the returns were nullified.
due to high cost of the fungicide. Neem oil gave negative B:C ratio during both the years indicating that it is not economical to use against leaf spot disease on turmeric.

REFERENCES


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