

Efficacy of Fungicides for Managing Powdery Mildew of Mango

R. A. CHAVAN, V.D. DESHMUKH, S.V. TAWADE AND J.D. DESHMUKH

International Journal of Plant Protection, Vol. 2 No. 1 : 71-72 (April to September, 2009)

See end of the article for authors' affiliations

Correspondence to :
V.D. DESHMUKH
Department of
Agricultural
Biotechnology
MGM College of
Agricultural
Biotechnology,
Aurangabad (M.S.)
INDIA

SUMMARY

Six fungicides were tested for their efficacy in reducing the powdery mildew of mango caused by *Oidium mangiferae* under field conditions. The fungicides were: carbendazim (Bavistin 50 WP) 0.05%, wettable sulfur (Sulfex 80 WP) 0.25%, triademefon (Bayletan 25 WP) 0.05%, thiophanate-methyl (Roko 70 WP) 0.1%, penconazole (Topas 10% EC) 0.05%, hexaconazole (Contaf 5EC) 0.05% and the control. Three years experimentation (2006-08) on cultivar "Keshar" at bearing showed that all the fungicides reduced the disease significantly when applied at pre-bloom, 10 days after 1st spray and at fruit setting stage compared to the untreated control. Results revealed that hexaconazole gave lowest incidence of powdery mildew (21.2%). Hexaconazole was significant over rest of treatments except triademefon. Reduction in disease severity also increased the average number of fruits per inflorescence. Hexaconazole was best in retaining highest pea stage fruits (24.77) followed by triademefon (20.77).

Key words :

Mango,
Powdery mildew,
Oidium mangiferae,
Fungicidal control.

Powdery mildew caused by *Oidium mangiferae* Berth. is most serious problem of mango (*Mangifera indica* L.). In India, it has been reported from Uttar Pradesh, Punjab, Maharashtra, Gujarat, Madhya Pradesh, Jammu and Kashmir, Haryana, Andhra Pradesh, Karnataka and Tamil Nadu. The losses caused vary from 5-20 per cent depending upon the weather conditions. Prakash and Srivastava (1987) reported 30-90% losses in Lucknow. The causative fungus attacks mainly flowers, stalks and small fruits resulting in shading of flowers and pea size fruits. So, considering the problem, an experiment on evaluation of different fungicides in controlling mango powdery mildew was conducted at Fruit Research Station, Aurangabad.

MATERIALS AND METHODS

Six fungicide viz., carbendazim (Bavistin 50 WP) 0.05%, wettable sulfur (Sulfex 80 WP) 0.25%, triademefon (Bayletan 25 WP) 0.05%, thiophanate-methyl (Roko 70 WP) 0.05%, penconazole (Topas 10% EC) 0.05%, hexaconazole (Contaf 5EC) 0.05% were evaluated for their field efficacy against powdery mildew of mango (cv. KESHAR). Sprays were done three times, first one being at a pre bloom stage, second at 10 days after 1st spray and at fruit setting stage. Powdery mildew intensity and fruit counts at pea stage were recorded on ten inflorescences per tree per treatment. Per cent disease intensity was assessed based on visual observation and

graded in 0-9 scale.

RESULTS AND DISCUSSION

An experiment on evaluation of different fungicides in controlling mango powdery mildew in field condition clearly showed the significant effect of fungicides in reducing the intensity of disease. Results presented in Table 1 revealed that hexaconazole 0.05% gave lowest incidence of powdery mildew during all three years. It gave significantly lowest incidence of disease (21.2%) over rest of treatments except triademefon at 0.05% (25.2%) which was at par with hexaconazole. Intensity of disease directly affected retention of pea stage fruits on inflorescences. Data clearly revealed that number of fruits were less with increase in incidence of powdery mildew. Hence, the fungicide effective in minimizing the incidence of disease was found similarly effective in retaining maximum number pea stage fruits. Table 2 revealed that Hexaconazole was consistent in retaining maximum numbers of fruits in all years of experiment (24.11) while triademefon was at par with hexaconazole and stood second in retention of maximum fruits on inflorescences (20.77). Ray (2003) reported in his two years experiment on susceptible cultivar "Himsagar" the effectiveness of triademefon in minimizing disease severity (2.87%) followed by dinocap and penconazole applied at a concentration of 0.1, 0.1, 0.05 and 0.05% and reduction in disease severity also increased with the average number of fruits

Accepted :
February, 2009

Table 1 : Effect of fungicides on the intensity of powdery mildew of mango

Sr. No.	Treatments	% Intensity of powdery mildew			
		2005-06	2006-07	2007-08	Pooled mean
1.	Bayleton 25% WP 0.05%	14.5 (22.32)	35.5 (36.34)	25.8 (30.55)	25.2 (29.73)
2.	Sulphur 80WP 0.25%	30.1 (32.01)	37.0 (37.45)	37.3 (37.67)	34.8 (35.71)
3.	Carbendazim 50WP 0.05%	53.0 (46.72)	40.3 (39.60)	48.4 (44.12)	47.2 (43.48)
4.	Thiophanate methyl 70 WP 0.05%	38.0 (37.44)	33.3 (34.90)	44.0 (41.54)	38.4 (37.44)
5.	Hexaconazole 5EC 0.05%	13.1 (21.27)	26.6 (30.58)	24.0 (29.32)	21.2 (27.05)
6.	Penconazole 10%EC 0.05%	21.3 (27.59)	26.6 (31.03)	45.5 (42.41)	31.1 (33.67)
7.	Control	81.3 (64.60)	59.9 (50.75)	91.0 (72.66)	77.4 (62.67)
8.	SE±	2.00	1.9 5.84	0.92	2.29
	C.D. (P=0.05)	6.17		2.85	6.64

Table 2: Effect of different fungicides on retention of pea stage mango

Sr. No.	Treatments	Number of fruits retained per ten inflorescences			Pooled mean
		2005-06	2006-07	2007-08	
1.	Bayleton 25% WP 0.05%	28.33	18.66	15.33	20.77
2.	Sulphur 80WP 0.25%	10.66	11.66	11.33	11.22
3.	Carbendazim 50WP 0.05%	9.00	13.66	10.66	11.11
4.	Thiophanate methyl 70 WP 0.05%	16.67	16.33	13.66	15.55
5.	Hexaconazole 5EC 0.05%	28.00	25.33	19.00	24.11
6.	Penconazole 10%EC 0.05%	26.33	22.33	13.00	20.55
7.	Control	0.66	4.33	4.66	3.22
8.	S.E.±	2.01	0.93	1.20	1.01
	C.D. (P=0.05)	6.19	2.86	3.72	3.37

per branch from 448.75 to 1142.08% over the untreated control by application of different fungicides. Rawa and Ullasa (1985) reported significant results of baycor (0.1 per cent), bayleton (0.1 per cent) and calixin (0.1 per cent) in controlling the powdery mildew on Alphanso. Several fungicides, such as Cosan (0.2%), benlate (0.2%), wettable sulphur and DDT (2:1), karathane or morestan, carbendizim (0.1%), 0.2% microsul and butrimate, Baycor, Calixin, Anvil (0.05%), Systhane (0.05%), Saprol (0.2%) have been found to be effective in controlling the disease (Sohi and Sridhar, 1973; Lingraj, 1969; Fundacion, 1972; Prakash and Singh, 1982; Rawal and Ullasa, 1985; Rawal and Saxena, 1989).

Authors' affiliations:

R.A. CHAVAN, Fruit Research Station, Himayath Bagh, AURANGABAD (M.S.) INDIA

S.V. TAWADE, Department of Agricultural Biotechnology MGM College of Agricultural Biotechnology, AURANGABAD (M.S.) INDIA

J.D. DESHMUKH, Banana Research Station, NANDED (M.S.) INDIA

REFERENCES

- Fundacion, S.** (1972). Control of powdery mildew in mango. *Noticias Agrícolas*, **6**(20) : 78-79.
- Lingaraj, D. S.** (1969). Mango diseases and pests (*Mangifera indica* L.). *J. Mysore Hort. Soc.*, **14** : 15-18.
- Prakash, Om and Singh, U.N.** (1982). Evaluation of various fungicides for the control of powdery mildew of mango caused by *Oidium mangiferae*. *Pesticides*, **16** : 171-178.
- Rawal, R.D. and Ullasa, B.A.** (1985). Control of mango powdery mildew (*Oidium mangiferae* Berth.) by fungicides. Second Internat. Symp. Mango (Abst.), Bangalore, p 62.
- Rawal, R.D. and Saxena, A.K.** (1989). Control of powdery mildew of mango through fungicidal sprays. Proc. 3rd Internat. Mango Symp. held at Darwin, Australia during Sept. 25-29, 1989.
- Ray, S.K.** (2003). Efficacy of different fungicides for management of powdery mildew of mango in West Bengal. *J. Mycopathol. Res.*, **41**(2) : 153-155.
- Sohi, H.S. and T.S. Sridhar** (1973). Powdery mildew of mango and its control. *Indian Phytopathol.*, **26** : 361-362.
