

Chemical control of *Alternaria* blight of cumin (*Cuminum cyminum* L.)

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ABSTRACT

Attempts were made to control *Alternaria* blight of cumin (*Cuminum cyminum* L.) caused by *Alternaria burnsii* Uppal, Patel and Kamat. Out of nine fungicides evaluated, three sprays of mancozeb (0.2%) or propiconazole (0.025%) at 12 days interval at initiation of disease was the best for controlling the disease and increasing grain yield.

Key words: *Alternaria* blight, control, cumin, *Cuminum cyminum*.

Cumin (*Cuminum cyminum* L.) is an important spice crop grown in Gujarat and Rajasthan states in India. Although cultivation of these crops is confined to dry parts of these states, the infection of blight (*Alternaria burnsii*) is favoured by cloudy humid weather and rainfall after flowering (Gemawat & Prasad 1972). A field trial was conducted to evaluate the relative efficacy of fungicides for the management of *Alternaria* blight and the results are reported here.

A field experiment was conducted during *rabi*, 1991-92 at Agricultural College Farm, Junagadh on cumin variety Gujarat - 1. The experiment was laid out in a Randomized Block Design with 10 treatments and 3 replications. The

crop was sown in the third week of November with a plot size of 4.0m × 1.8 m.

Nine fungicides were sprayed thrice at an interval of 12 days at /after appearance of initial disease symptoms. The fungicides used were propiconazole, penconazole, hexaconazole, tridemorph, dinocap, triadimefon, sulphur dust, mancozeb and thiophanate methyl; an untreated control was also maintained.

The disease intensity was recorded after a week of the last spray of the fungicide on 10 randomly selected plants from each treatment. The plants were assessed individually using 0-3 scale (Gemawat & Prasad 1969) and per cent disease intensity was calculated. The data were analyzed statistically.

All the fungicides, except sulphur dust were found significantly effective in controlling blight disease as compared to untreated check (Table 1). Minimum disease intensity (25.60 per cent) and maximum yield (972 kg/ha) were obtained in plots treated with mancozeb. Propiconazole was the next best fungicide though it was at par with hexaconazole, tridemorph and penconazole. An yield of 816 kg/ha was recorded in propiconazole and it was at par with triadimefon. The 1,000 seed weight was also higher in mancozeb (3.5g), followed by propiconazole (3.4g). Mancozeb was also reported as the most effective fungicide in reducing the incidence of cumin blight as well as increasing the yield (Baswana, Jalali & Thakral 1991).

References

- Baswana K S, Jalali & Thakral K K 1991 Effect of sowing dates and fungicides on seed quality, yield and disease incidence. *Indian Cocoa, Arecanut & Spices J.* 14: 155-157.
- Gemawat P D & Prasad N 1969 Efficacy of different fungicides for control of *Alternaria blight of Cuminum cyminum* (Zeera). *Indian Phytopath.* 22 : 49-52.
- Gemawat P D & Prasad N 1972 Epidemiological studies on *Alternaria blight of Cuminum cyminum*. *Indian J. Mycol. Plant Pathol.* 2 : 65-75.

Table 1. Effect of fungicides on intensity of *Alternaria* blight and yield of cumin

Treatment	Conc. (a i)	Disease intensity	Yield (kg/ha)	1000 seed weight (g)
Propiconazole (Tilt 25% EC)	0.025%	31.01(26.53)	816	3.4
Penconazole (Topas 10 % EC)	0.01%	34.32(31.78)	711	3.3
Hexaconazole (Contaf 5% EC)	0.005%	32.48(28.55)	733	3.0
Tridemorph (Calixin 80 % EC)	0.08%	33.85(31.05)	653	2.9
Dinocap (Karathane 48% EC)	0.48%	44.32(48.80)	649	3.0
Triadimefon (Bayleton 25% WP)	0.025%	38.52(38.78)	847	3.3
Sulphur dust	20 kg/ha	49.45 (57.75)	664	3.1
Mancozeb (Indofil M- 45 75% WP)	0.20%	25.60 (18.68)	972	3.5
Thiophanate methyl (Topsin 70% WP)	0.07%	43.08 (46.63)	722	3.2
Control	—	53.40 (64.42)	604	2.9
S Em ±		1.73	25.34	
CD at 5%		5.13	75.00	

Data in parentheses are retransformed values