



Fungicides for control of powdery mildew in cucurbit . . .

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Several new materials show promise

Most cucurbits grown in California lack tolerance to powdery mildew disease caused by the fungus *Sphaerotheca fuliginea* (Schlect.) Poll. Plants infected with the disease show reduced vigor and defoliation under severe disease conditions; fruits may become sunburned with a consequent reduction in quality. We tested several new fungicides for control of the fungus in 1982, 1984, and 1985.

Zucchini squash, 1982

For the first trial, we selected zucchini squash plants, cultivar Ambassador, at the 10-leaf stage, in a commercial squash field in San Diego County. Treatments were replicated four times on single-row plots 25 feet long. Light to medium mildew was prevalent in the field before fungicide application. All materials were applied to the point of runoff with a pressurized sprayer at 30 psi on June 25 and July 12 and 26. Rohm and Haas B-1956 spreader sticker was used in each treatment at the rate of 4 fluid ounces per 100 gallons of water.

Bayleton (triadimefon), Tilt (propiconazole), and Rubigan (fenarimol) were significantly better than the other fungicide treatment tested (table 1). The treatment Benlate (benomyl) plus Phaltan (folpet) gave good commercial control, and all fungicides were significantly better than no treatment.

Cucumber, 1984

The next trial used cucumber, cultivar Marketer, planted at the University of California South Coast Field Station, Irvine, in the summer of 1984. Summit (tridemol), Topas (penconazole), Spotless (diniconazole), NuStar (DuPont 6573), and Bayleton were applied beginning in the six-leaf stage on September 6 and 20. We replicated treatments five times on single-row plots 25 feet long, using the same

TABLE 1. Effect of foliar fungicide sprays for powdery mildew control in zucchini squash 'Ambassador', San Diego County, 1982

Material, rate/acre in 100 gal. water	Disease rating Aug. 5*†
Bayleton 50W, 4 oz.	0.0 a
Tilt 3.6E, 2 fl. oz.	0.0 a
Rubigan 12.5%, 4 fl. oz.	0.2 a
Benlate 50W, 8 oz. + Phaltan 50W, 2 lb.	1.2 b
No treatment	7.2 c

* Duncan's multiple range test (DMRT) used at the 5% level. Treatment means followed by the same letter are not significantly different.

† Rated on a scale of 0 to 10: 0 = no symptoms; 10 = severe mildew completely covering both leaf surfaces.

TABLE 2. Effect of foliar fungicide sprays for powdery mildew control in cucumber 'Marketer', UC South Coast Field Station, Irvine, 1984

Material, rate/acre in 100 gal. water	Disease rating Sept. 30*†
Spotless 25W, 4 oz.	0.2 a
Topas 10W, 5 oz.	0.6 a
Summit 25W, 4 oz.	1.0 ab
NuStar 40%, 2.5 fl. oz.	1.0 ab
Spotless 25W, 2 oz.	1.2 ab
Bayleton 50W, 2 oz.	2.0 b
No treatment	6.0 c

* DMRT at 5% level.

† Scale of 0 to 10.

TABLE 3. Effect of foliar fungicide sprays for powdery mildew control in banana squash 'Banana Pink Jumbo', fall 1985

Material, rate/acre in 92 gal. water	Disease rating Oct. 23*†
Summit 25%DF, 2 oz. + Morestan 25W, 8 oz.	0.4 a
Bayleton 50W, 2 oz. + Benlate 50W, 8 oz.	0.6 a
Bayleton 50W, 2 oz. + Phaltan 50W, 2 lb.	0.7 a
Bayleton 50W, 2 oz. + Morestan 25W, 1 lb.	0.7 a
Summit 25%DF, 2 oz.	0.7 a
Mobay 1608 1.2EC, 6.5 fl. oz.	0.8 a
Benlate 50W, 8 oz.	1.2 ab
Morestan 25W, 8 oz.	2.1 ab
Bayleton 50W, 4 oz.	2.9 b
Phaltan 50W, 2 lb.	5.4 c
No treatment	8.2 d

* DMRT at 5% level.

† Scale of 0 to 10.

methods and equipment as in the 1982 squash trial.

Spotless, Topas, Summit, and NuStar gave excellent control of powdery mildew on cucumber (table 2). Bayleton was somewhat lower in effectiveness. All were significantly better than no treatment.

Banana squash, 1985

We conducted the 1985 trial on banana squash plants, cultivar Banana Pink Jumbo, at the 12-leaf stage in a commercial squash field in Riverside County. Treatments were replicated four times on single-row plots 25 feet long. All treatments were sprayed in 92 gallons of water per acre on September 20 and October 4.

Several treatments — Morestan (oxythioquinox) plus Summit; Bayleton plus either Benlate, Phaltan, or Morestan; Summit; Mobay 1608; Benlate; and Morestan — were significantly better than the other materials tested. Bayleton provided fair control, while Phaltan did not give adequate commercial control of powdery mildew.

Conclusions

Bayleton, Benlate, and Phaltan are currently registered for control of powdery mildew of cucurbits. Bayleton provided excellent control in the 1982 trial, but less control was noted in the 1984 and 1985 cucurbit trials. Materials that showed promise for control in our tests included Tilt, Rubigan, Spotless, Topas, NuStar, Summit, Mobay 1608, and Morestan. None of these is presently registered in California for this use.

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