On avocado, the age of leaves had an opposite effect. All larvae died on new foliage, while second instars were able to survive through pupation on old foliage.

Class III plants

Four of the crops tested were totally unsuitable for larval development, even for fifth instars, which were the least discriminating and most voracious of the instars tested. For example, leaves from three grape varieties were not only unsuitable for development, but larval feeding was essentially absent. The only attempt by larvae to eat grape foliage was by fifth instars on Concord grape. In this case, the feeding was very slight, indicating the foliage was not acceptable to the caterpillar. Similarly, caterpillars did not develop or even attempt to feed upon the foliage of tomato or kiwi.

Conclusions

The results indicate a relatively high rate of host plant acceptance; 29 percent of those tested were very suitable and 79 percent were suitable to some degree to gypsy moth larvae. Only 5 of 24 plant species (21 percent) were rejected entirely. Although these observations are based on studies conducted with greenhouse-grown plants and clipped foliage, the results indicate which varieties or species of plants are relatively suitable for the development of gypsy moth larvae. Our findings do not predict that the most suitable plants will be infested if a population of gypsy moths is present but rather suggest which plants may be more likely to be affected by an established population.

Although the gypsy moth is primarily considered to be a pest of forest and shade trees, our results suggest that it could become a pest of several important fruit and nut crops in California. The gypsy moth could achieve pest status in these crops by causing feeding damage or by being present in viable life stages that would result in the levying of quarantine restrictions. In California, the crops listed in table 1 as Class I and II plants occupied over 705,000 acres, representing a total value exceeding $975 million in 1985.

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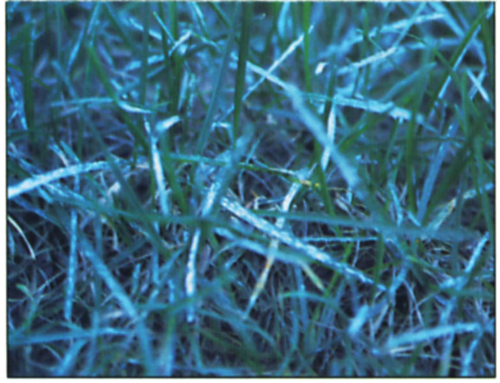

Powdery mildew on bluegrass can easily be identified by the white powdery appearance of the fungus on leaf blades.

Chemical control of powdery mildew on Kentucky bluegrass

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Several products effectively control this relatively minor disorder.

Powdery mildew of Kentucky bluegrass occurs during cool months in heavily shaded areas with poor air circulation. Although the disease is of relatively minor importance in Kentucky bluegrass (*Poa pratensis* L.), it is sometimes necessary to initiate control measures. Caused by the fungus *Erysiphe graminis* DC. ex Mérat, powdery mildew is characterized by the white, powdery appearance of the fungus on the leaf blades. Because of the limited occurrence of the disease, opportunities to test chemicals for control are also limited.

We began a trial in January 1986 on the north side of a multi-story building in San Bernardino, southern California. The area was approximately 8 by 200 feet, allowing four randomized blocks with one replication of each of six treatments in each block. The replications were 8 by 10 feet each.

Fungicides were applied three times at two-week intervals as drenches in 2 gallons of water followed by a 1-gallon water wash. Each nontreated control plot received 2 gallons of water followed by the wash. Chemicals used were Award (penconazole), Bayleton (triadimefon), Chipco 26019 (iprodione), MF-690 (no common name), and Systhane (myclobutanil). Visual evaluations were made before each treatment and two weeks after the final treatment.

TABLE 1. Effect of fungicide drenches for powdery mildew control in Kentucky bluegrass

Fungicide, rate/1,000 square feet	Visual ratings on days after first application on January 14, 1986* Init†	14	28	42
Bayleton-25W, 2 oz	6.3	2.4 a	0.5 a	1.3 a
Systhane-40W, 5 oz	8.3	5.3 ab	0.8 a	1.3 a
Award-50W, 3.5 oz	8.0	5.5 ab	1.8 a	1.5 ab
MF-690-50W, 3 oz	7.3	6.3 ab	7.0 b	4.3 abc
Control	7.0	6.5 ab	6.5 b	4.8 bc
Chipco 26019-50W, 4 oz	8.5	8.5 b	8.8 b	6.6 c

* Ratings on a scale of 0 to 10; 0 = no disease; 10 = plants dead. Ratings followed by different letters are significantly different at the 5% level by Duncan's multiple range analysis.
† There were no significant differences among ratings at initial evaluation.

Results

Fourteen days after the initial application, Bayleton was the only significantly effective treatment (table 1). At the 28-day evaluation, Bayleton, Systhane, and Award were statistically better than the other treatments. MF 690 and Chipco 26019 demonstrated no notable effectiveness against powdery mildew. In the final evaluation two weeks after the last application (42 days from the beginning), the Bayleton and Systhane treatments showed the best powdery mildew control, followed by the Award treatments. MF 690 was only marginally better than no treatment, and Chipco 26019 was the least effective treatment tested.

Bayleton and Chipco 26019 are the only fungicides tested that are currently registered for this use in California.

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