

Special Research Report #100: Disease Management

Verbena Cultivar Susceptibility to Powdery Mildew

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Fig. 1. Verbena cultivar Babylon White.

BACKGROUND

Verbenas (Fig. 1) are the spring crop most often afflicted by powdery mildew. Crops will become unsaleable if the powdery mildew, caused by *Podosphaera xanthii*, becomes an established epidemic before the disease is noticed. The powdery mildew colonies may appear as typical white spots on the upper leaf surfaces (Fig. 2A). In other cases the mildew forms thin white patches on the undersurface of yellowed lower leaves. Sometimes purplish spots form on verbena that

growers don't recognize as powdery mildew (Fig. 2B).

Although powdery mildew diseases are generally very host-specific, attacking only very closely related plants, the verbena disease is an exception in that it is the same powdery mildew that affects squash and cucumber (Fig 2C).

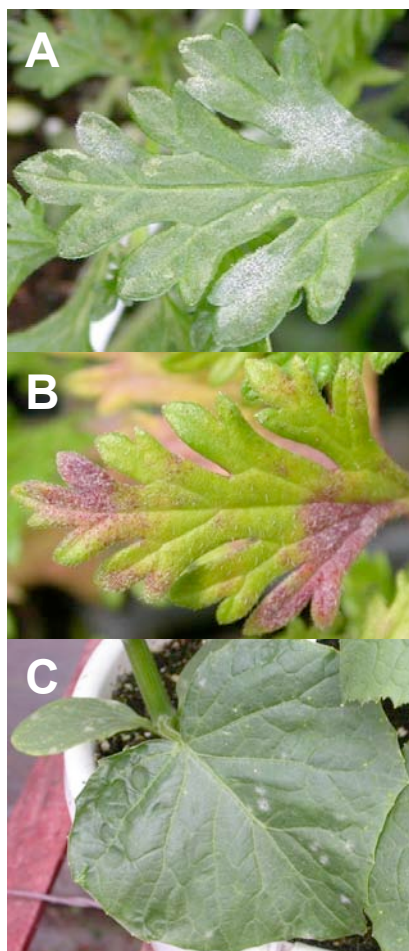


Fig. 2. *Podosphaera xanthii* as white spots (A) or purple spots (B) on verbena, and as white spots on cucumber (C).

Spacing plants and ensuring good air circulation via fans and vents, along with humidity management practices, can reduce powdery mildew somewhat. For problem infestations, applications of effective fungicides are recommended. Combining these techniques with selection of powdery mildew-resistant cultivars can maximize disease management for growers.

MATERIALS NEEDED

We screened 125 verbena cultivars in greenhouses in Michigan and New York, and in an outdoor planting in Michigan, to test their relative resistance to powdery mildew. Results of three separate trials over two years were compiled.

RESULTS

A number of cultivars showed very low susceptibility to powdery mildew, while others were identified as being disease-prone under the same environmental conditions (Fig. 3A, B, next page). The cultivars that were consistently the most resistant and most susceptible are listed in Tables 1 and 2 (next page). Cultivars within the same series often performed quite differently from one another.

Table 1. Verbena cultivars with high susceptibility to powdery mildew.

Aztec Peach
Babylon Blue
Babylon Carpet Blue
Babylon Light Blue
Babylon Purple
Babylon Red
Babylon White
Fuego Apricot
Lanai Blue
Lanai Blush White
Napoleon Purple
Napoleon Red
Quartz Blue
Quartz Burgundy with Eye
Quartz Magenta
Sparkler Deep Blue/White
Sparkler Purple/White
Sparkler Red/White
Sparkler Sky Blue/Red
Spitfire Violet/White
Superbena Coral Red
Temari Burgundy Improved
Tukana Scarlet
Tukana White
Wildfire Purple Improved

Table 2. Verbena cultivars with low susceptibility to powdery mildew.

Aztec Grape Magic
Aztec Lilac Picotee
Aztec Magic Purple
Aztec Silver Magic
Aztec Wild Rose
Lanai Royal Purple with Eye
Rapunzel Hot Rose
Rapunzel Orchid
Superbena Dark Blue
Superbena Large Lilac Blue
Superbena Pink Shades

applications should begin at the first sign of powdery mildew in these disease-prone cultivars; management will not be so difficult for the “low susceptibility” cultivars.

IMPACT TO INDUSTRY

Growers who wish to save money and time and promote environmental health by using less pesticides can elect to use verbena cultivars that we have shown to have lower susceptibility to powdery mildew. As a result, retailers and consumers will be presented with verbenas that will have less chemical pesticide residue and that will continue to exhibit low susceptibility to powdery mildew in display areas and gardens.

CONCLUSIONS

The wide variation in verbena susceptibility to powdery mildew is good news: growers can choose to grow cultivars that are less prone to disease. Those cultivars that were intermediate in their susceptibility or that were tested only once will be re-tested over the next few years. Growers who produce any of the cultivars on the “high susceptibility” list should scout especially carefully for the first signs of powdery mildew, turning over lower leaves to check for hidden colonies of the fungus. Fungicide

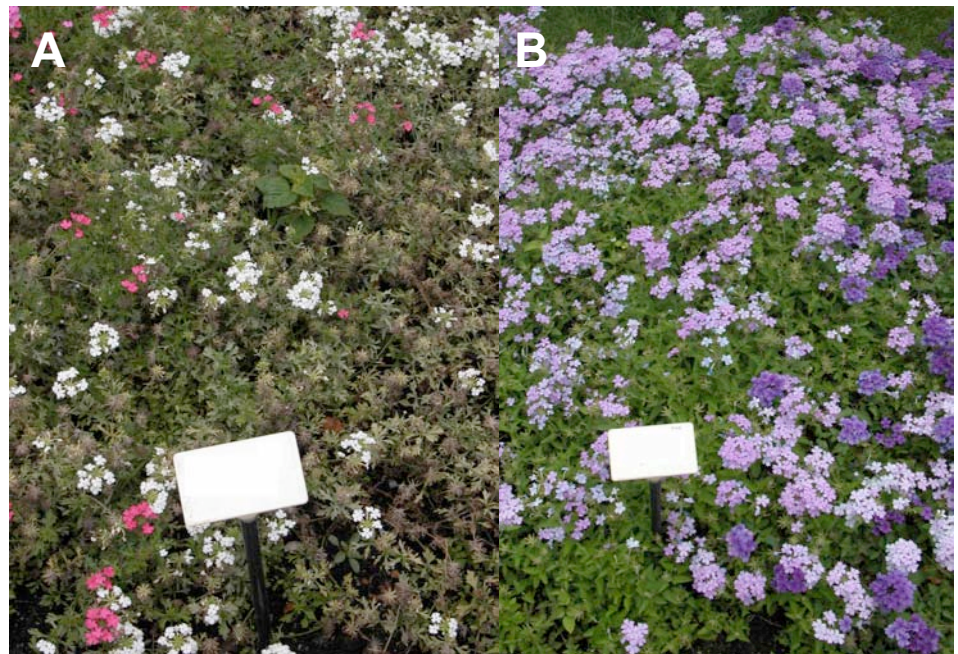


Fig. 3. A, ‘Babylon White’ (high susceptibility) and B, ‘Superbena Large Lilac Blue’ (low susceptibility) grown in an outdoor planting. Note browning and dying foliage of ‘Babylon White’ due to powdery mildew infection.