M *a* *a* is undeniably one of the showiest summer-blooming perennials, and the flash of its vibrant-colored flowers is positively captivating. But it is also notorious for its bad habits—invasiveness and a predisposition to powdery mildew. While those may be reasons enough to keep your distance, it can be difficult to resist its floral charms.

M *a* *a* *a*, beebalm or Oswego tea, and *M* *a* *a* *a*, wild bergamot, are the most commonly cultivated of the 16 species native to North America. Beebalm grows naturally in rich woodlands, in thickets and along streams throughout the eastern United States. It is not as tolerant of dry conditions as *M* *a* *a* *a*, which grows on the drier soils of hillsides, meadows and prairies from southeastern Quebec to the southern United States.

Both species grow well in full sun or partial to light shade and are adaptable to a variety of soils. *M* *a* *a* *a* requires rich, moist soils for best growth and may react to dry soils by developing foliar diseases. It is a good choice for the perennial border because of its tolerance of the higher moisture level common in garden beds. Many of the commonly grown cultivars are often more tolerant of drier soils because they are actually hybrids of *M.* *a* and *M.* *a*.

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The evaluation plots received similar exposure to wind and approximately eight to 10 hours of full sun daily during the growing season. The well-drained soil consisted of one part composted leaves to four parts clay-loam soil, with a pH of 7.4. Turf grass pathways surrounded the beds on all sides, and the plots, each comprised of 16 plants, were separated within the beds by mulched strips.

Maintenance practices were kept to a minimum to simulate home garden culture. Irrigation was supplemented as needed, and no fertilizer was applied. The plants were periodically cut back in late summer to remove declining and/or diseased stems. Fungicides were not used to control powdery mildew so that accurate disease-resistance information could be collected. Infected leaves were removed from the ground in order to decrease the level of fungal spores overwintering in the test garden. A mulch of shredded leaves and wood chips was placed around the plants for aesthetic purposes, water conservation and weed control.

Plants were obtained from various commercial and private sources throughout the United States and Canada, including the Agriculture Canada Research Station in Morden, Manitoba. The project was initiated jointly with the Morden station, and plants were shared between institutions. Some of the unnamed selections from the Morden breeding program were also included in the Chicago Botanic Garden trial. The evaluation list (Table 1) contains species and cultivars that were readily available in the U.S. and Canadian markets in 1993 and does not include the newer selections of mildew-resistant cultivars that have come from Europe in the past few years. Nomenclature does not follow any one reference and has been simplified in most cases to the cultivar level because of the many discrepancies noted in the literature. To fo 5po45simplify our discussion, beebalm is the common name used throughout this report to refer to all *M a a* in the test program.

Observations

The *M a a* trials were one of the most impressive displays ever grown in the concentric circles of the Lavin Plant Evaluation Garden. Immersed in the maze of exuberant colors, it was easy to forget the garden's purpose, but the5side-by-side plots made it simple to compare ornamental characteristics and mildew resistance among the *M a a*.

Table 1: Plant Characteristics and Performance Summary Ratings

O a R a n	M a a	F G	I n W h n	B m P d	F G a	H h R a n	P M d R a n [1]	W n I n [2]
★★			a	a l a	%	a		
★★★			a	l	%	a		
★★			a	l	%	a		
★★★★			a	l	%	a	a	
★★★			a	l	%	a		
★★			a	a l a	%	a		
★★★★			a	l	%	a		
★★								

Information was collected on disease and pest resistance; flower color, size, bloom period and coverage; plant size and form; winter hardiness; and cultural adaptability. Plant traits and evaluation specifics are outlined in Table 1. Of the 41 original taxa, only three did not complete the project because of winter injury. A summary rating was assigned to each taxon based on mildew resistance, bloom coverage, plant health, habit quality and winter injury. A five-star rating indicates a superior performance, whereas a one-star rating signifies a poor performance.

Many of the taxa were obtained from multiple sources in an effort to verify the authenticity of commercially available plants. In most cases these taxa matched each other and were verified true to name. There were only a few instances where incorrect plants were removed from the trial. The project also included a plant received as *M. a.* 'Gardenview Red', which was identical in appearance to 'Gardenview Scarlet' and was determined to be an invalid name per a phone conversation with Henry Ross, Gardenview Horticultural Park, Strongsville, Ohio.

Powdery mildew was the most significant disease problem observed. It was rarely noted before early July and was most severe in late summer and fall. White fungal patches developed on the upper surfaces of the leaves and, in the worst cases, the patches coalesced, making the entire leaf surface look grayish-white. Eight cultivars were highly resistant to mildew infection, including 'Colrain Red', 'Marshalls Delight', 'Purple Mildew Resistant', 'Raspberry Wine', 'Rose Queen', 'Rosy-Purple', 'Violet Queen' and *M. a.* f. *a. b. c.*. 'Marshalls Delight' had the lowest level of infection with no more than 5% ever observed, while the others typically had less than 25% foliar infection. Only 'Purple Mildew Resistant' was completely free of mildew throughout the evaluation period. In some cases, mildew infection on "resistant" cultivars was observed only on the leaves directly adjacent to highly susceptible cultivars. The most susceptible taxa were 'Beauty of Cobham', 'Croftway Pink', 'Mahogany', 'Mrs. Perry', 'Prairie Fire', 'Snow Queen' and *M. a.* Mildew was first noted on these plants sometimes as early as mid-June, with complete infection (100%) occurring in late July to early August.

Infection usually resulted in partial to full defoliation. The degree of infection did not always determine the amount of defoliation, although the two were often at the same level. Some cultivars held infected leaves for most of the season while others defoliated quickly. 'Rosy-Purple' and 'Stone's Throw Pink' consistently had the lowest amount of leaf loss from mildew infection, typically less than 20%. This was attributed to the fact that infection on these plants occurred later in the season, peaking in severity in late August and September. Regeneration of leaves varied with each cultivar and in each year. Most plants began new growth as soon as mildew levels elevated, but sometimes new shoots did not emerge until late September or October, or

The tallest plant heights were recorded