AGRICULTURAL SCIENCES

Developing cold-hardy perennial ornamentals for Kentucky. HIDEKA KOBAYASHI, Department of Agriculture and Natural Resources, Kentucky State University, Frankfort, KY 40601

Kentucky is a state which has a relatively small industry for the production of nursery, greenhouse, and floriculture crops. Ornamental horticulture is perhaps one of the most neglected areas in sustainable agriculture. Heavy use of chemicals, both pesticides and fungicides, is rampant, and production of ornamentals requires considerable energy and labor inputs. While the public may be aware of practices such as rain gardening and xeriscaping, some of these can be difficult to directly incorporate in existing gardens. The current project was undertaken to develop common garden plants that are cold-hardy and require lower energy input, thereby reducing overall carbon foot print. One group of horticulturally important ornamentals is the genus *Begonia*, which contains over 1,500 tropical or subtropical species along with a few cold-hardy species. Another popular genus, *Zinnia*, belongs to the subtribe Heliantheae, which also contains popular genera such as *Echinacea* and *Helainthus*. This genus itself contains about 20 species, distributed from the western U.S. to South America. *Z. violacea*, the common *Zinnia*, has been crossed with another species of *Zinnia*, *Z. angustifolia* to develop *Z. maryalandica*, a hybrid with a resistance to powdery mildew. The objectives of the current project were to impart cold hardiness into *Begonia* through interspecific hybridization with cold-hardy species (*B. grandis*), and to introduce perenniality into *Zinnia violacea*.