

Fire Blight and Apple Scab Meet Their Match

Eckert Orchards, Belleville, Illinois

Breeding Better Apple Varieties for the Midwest

Coordinator: Jim Eckert

Location: Belleville, Illinois

SARE Grant: \$13,748

Grant Year: 1999

Project Number: FNC99-270

Jim Eckert received a SARE grant to find new apple varieties that are resistant to diseases such as fire blight and apple scab. The goal is to identify varieties suitable for the lower Midwest without the use of pesticides.

Just call them Johnny Appleseeds for the new millennium. Jim Eckert and other growers from four states in the Midwest are spreading apple-tree seedlings, but with a new twist. The seedlings are hoped to be resistant to fire blight and apple scab, two of the most notorious diseases to Midwest apple producers.

Eckert, president of Eckert Orchards in Belleville, Illinois, is one of a group of growers from Illinois, Indiana, Ohio, and Kentucky, who decided they were going to embark on an apple-breeding project to find varieties suitable for the lower Midwest—varieties that would be resistant to disease without the use of pesticides.

To begin the project, the producers made controlled crosses, which resulted in 10,000 seedling apple trees. According to Eckert, the current growth and viability of the project is exceptional, but winnowing through all that they are learning will take time.

"This is a 10-year project, 10 years and more," says Eckert. "The first seedlings from



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controlled crosses went in the ground in the year 2000, and we evaluated apples in 2005 and 2006, so some of these seedlings have started to produce.

"A lot of the parent material we're using has some disease resistance in it," he adds. "We're hoping that the material coming out of the crosses would exhibit this resistance, especially to the two really devastating diseases, fire blight and apple scab. If that's true, if we can get that resistance and put it into something commercially acceptable, that will be a great thing."

In addition to disease resistance, Eckert's group hopes to develop apple varieties that will produce large fruit size, cropping reliability, good flavor and appearance, acceptable storability, and minimal pre-harvest drop.

Private apple breeding was not part of Eckert's previous experience, "so this adventure has provided something to be learned at most every turn," he says. "For instance, when we started this project, we sited some of the seedlings at various growers' farms. In hindsight, we learned

that wasn't a good thing, because growers can come and go. When one grower went out of business, the farm was sold to developers and that planting (2,000 seedlings) was lost."

Today, Eckert's group has partnered with an arboretum in Ohio that provides land resources where seedlings can be established in a place that's "going to be there for the long haul," he notes.

Other producers in this group include Mitchell Lind and Dianne Miller, both in Ohio, Ed Fackler and David Doud in Indiana, and Ray Armstrong in Kentucky.

By developing and producing new varieties, these Midwest producers hope to help other farmer increase profitability, reduce pesticide costs and maintain a healthy orchard business.

By Leanne Lucas