

Award-Winning Project Evaluates the Best Apple Varieties for U.S. Apple Industry

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by Linda McCandless

WOOSTER, OHIO: The viability of the \$1.6 billion U.S. apple industry depends on the ability of U.S. producers in 36 states to meet changing consumer demands domestically and internationally. A collaborative project called NE-183 is the apple industry's crystal ball into the future. Since its inception in 1995, researchers at experiment stations across the U.S. and Canada have been working to provide growers with an objective and rapid analysis of the apple varieties best suited to the various apple producing states.

NE-183, otherwise known as "Multidisciplinary Evaluation of New Apple Cultivars," received the NERA 2000 Award of Excellence from the Experiment Station Directors of the Northeast, at their annual meeting at the Ohio Agricultural Research and Development Center in Wooster, Ohio. NERA is the professional association of research directors from the land grant universities in the Northeast.

"Since its inception in 1995, the project has evaluated 50 new apple varieties that are most likely to impact the U.S. apple industry in the future," said Robert C. Seem, administrative advisor for the project, and associate director of the NYS Agricultural Experiment Station, in Geneva, NY. "The purpose of the project is to determine which cultivars are most precocious, have superior quality attributes such as taste, texture, firmness, and storage potential, and which cultivars are 'grower friendly' to harvest and manage." Researchers identify which cultivars are least susceptible to insects, fungal and bacterial injury-information that can help growers select more sustainable production systems. The project also compares the cost of production and profitability of new apple cultivars, said Seem.

Apple varieties originating from North America, Europe, New Zealand, Australia,

and Japan are tested. The collaborative project involves 21 states and three Canadian provinces.

The list of 23 cultivars in the 1995 plantings included Braeburn, Fuji, Ginger Gold, Honeycrisp, Fortune, Cameo, GoldRush and several advanced breeding selections from British Columbia, New Jersey and New York. In 1999, project participants planted 22 additional selections and cultivars like Ambrosia, Autumn Gold, Chinook, Delblush, Hampshire, Jubilee Fuji, Pink Lady, Pinova, Runkel, Scarlet O'Hara Silken, and Zesta. The intention is to collect uniform data sets from each planting for at least six years, but researchers may maintain plots for individual study thereafter. Thus, even after the collective work is completed, the plantings remain as a resource.

There are two NE-183 evaluation plots located in New York. One is at the NYS Agricultural Experiment Station in Geneva, where it is managed by Susan K. Brown, director of Cornell University's apple breeding program, horticulturalist Ian Merwin, and Cy Lee, postharvest physiologist. The other is at the Hudson Valley Laboratory, in Highland, NY, where it is managed by plant pathologist David A. Rosenberger, superintendent of the Lab, horticulturalist James R. Schupp, and entomologist Richard Straub.

"Unprecedented care has been taken to insure uniformity of the plantings and the data collection protocols," said Rosenberger. "Test cultivars are carefully selected from a single nursery, while planting, fertilization, pest control and other production procedures are defined by committee and modified only under careful scrutiny by the project participants."

"Establishing a new orchard costs more than \$10,000/acre, and most orchards require at least six years to reach full production," said Rosenberger. "Selecting cultivars for new plantings is one of the riskiest decisions that an apple grower must make. The NE-183 project provides growers with information that is essential for selecting cultivars best suited for their own planting locations and marketing strategies."

Research orchards in all 21 states provide a focal point for growers and industry representatives to actually see and evaluate these new cultivars first hand. State twilight and extension tours provide an excellent means to communicate the group's findings in a practical, efficient and timely manner.

The information developed by NE-183 is highly sought after by apple growers because it represents the most authoritative source of information that a grower

can use prior to planting a new orchard. NE-183 has been recognized in the *American Fruit Grower* as a highly useful program of Agricultural Experiment Stations.

Apple cultivar evaluations from at least 25 experiment stations throughout the U.S. and Canada were on-going before the NE-183 project was initiated, but evaluations were often conducted informally, and results rarely published in scientific journals. Trials were rarely coordinated across broad geographic regions, nor could data be directly compared because of differences in planting dates, rootstocks used, combinations of cultivars chosen for evaluations, and data collection methods.

"Considerable efficiency in total effort and improvement in the quality of information generated has been achieved with the coordinated cultivar evaluation program initiated under NE-183," said Rosenberger.

The latest information on new apple cultivars can be accessed on the web at <http://www.VIRTUALORCHARD.net/ne183>

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