

Unique experimental orchards open for Ag Progress Days

UNIVERSITY PARK - Overhead sprinkling systems giving frost protection to apple orchards are being compared with permanent pipeline heating systems at Penn State University. Both systems will be featured during Ag Progress Days to be held August 23 to 25 at the Rock Springs Agricultural Research Center of Penn State, nine miles west of the campus on Route 45.

"As our research progresses, the overhead sprinkling system for frost control should demonstrate that the amount of water needed to form protective ice may be matched to the severity of frost with a consequent saving of water," declared Dr. J. David Martsof, frost protection researcher in charge of the experiments.

Dr. Martsof said oil can likewise be saved with the pipeline heating system to be demonstrated during Ag

Progress Days. The burning rate of the oil is controlled from a central location by regulating the oil pressure to match the orchard demand for heat. Visitors will learn that a heating system kept in the orchard all year appears to be holding up as well as systems moved in and out of the orchard. And the labor cost of moving the system is also saved.

Ag Progress Days will feature some of the most unique experimental orchards in the nation. Two orchard systems commercially feasible today are the low trellis hedgerow and the slender spindle, according to Dr. Loren D. Tukey, Pomologist. Both types will be shown August 23 to 25. Visitors will see the trellis growing on wires and forming a solid fruiting surface designed for over-row mechanical harvesting. The slender spindle retains its tree form but requires a tall stake for support.

While the systems are costly to establish, the investment can be recovered in 5 to 6 years, Dr. Tukey said. This is several years earlier than for conventional tree forms. Both grown on dwarf trees, the trellis hedgerow and slender spindle tree produce greater photosynthetic efficiency per acre of land as well as savings in energy and spray materials per bushel or ton of fruit. This is achieved through increased productivity per unit of land, Dr. Tukey will inform visitors to Ag Progress Days.

These "orchards of the future" at Penn State should yield from 950 to 1200 bushels per acre of quality fruit on a commercial basis, it was estimated. Orchard density for the trees, visitors will find, ranges from 622 to 1400 trees per acre, depending upon the tree design.

Other fruit tree experiments during Ag Progress Days will show a trickle irrigation system applying various calcium-based nutrients to trees. This project by Dr. Cyril B. Smith and Dr. C. Terry Morrow is designed to show the effect,

if any, of using calcium to prevent cork spot of apples. The trickle irrigation feeds a constant supply of calcium in

different forms. Nutritional results are studied through extensive leaf and fruit analyses.

Biodynamic talk slated

KIMBERTON - Dr. Herbert Koepf, director of the School of Biodynamic Agriculture at Emerson College, England, will speak on "Building Fertile Soils" at 7:30 p.m. August 25 at the Kimberton Farms School, Phoenixville R2. All interested farmers are invited; admission is free. Slides will be shown at the talk which comes at the end of Dr. Koepf's annual summer visits to biodynamic farms across the United States.

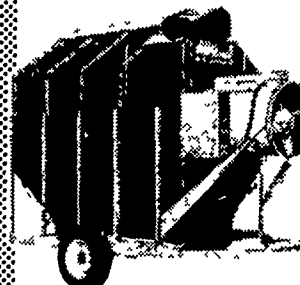
Biodynamic agriculture is a new approach to farming and gardening put forward by Rudolf Steiner. It embraces the thought that "adherence to one-sided technological thinking and profit-seeking has always led to ecological, economic and social disaster. The resulting damage is visible

everywhere. Contrariwise the mixed farm, adapted to the ecosystem, is the basic unit of a healthy rural area, guaranteeing the self-renewing and lasting fertility of the land. As demonstrated by the small group of successful biodynamic and organic farms that are founded on a way of thinking that is in tune with living forces, many weaknesses and negative side effects found in present production methods disappear. Threats to the environment that might stem from agriculture cease, the quality of the products is improved, biological cycles are more efficient, communities of flora and fauna become more stable, natural production potential is used more effectively and raw materials and energy are no longer wasted but used sensibly."



Sprinklers such as this one, protrude through all the tops of apple trees in one of Penn State's orchards. Their purpose, beyond irrigation during the growing season, is to protect the trees from frost damage during extremely cold nights. They'll replace the old flame pots if the technique can be perfected.

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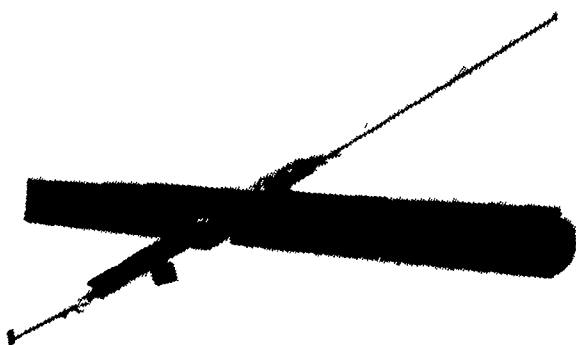
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