

Penn State explores computer use on farms

UNIVERSITY PARK — Computers could become the electronic marvel of American agriculture, in the opinion of C. Terry Morrow, agricultural engineer at Penn State.

Morrow and associates are exploring ways computers can be used to control on-the-farm operations. For example, they have designed computer systems that control overhead sprinkling systems to protect fruit trees from springtime frosts. The water keeps fruit buds from freezing.

The Penn State engineer also teaches computer uses in College of Agriculture courses. In studying various computers, he finds that prices and sizes of personal-sized models are now within reach of many farmers.

"The farmer who wants to use a computer should first decide what can be expected of the instrument. Many farmers have bought computer systems and then discovered they were not suited to their operations," he said.

Cost is still a strong factor in buying a personal computer. Although prices have been going down steadily, it takes at least \$5,000 to buy a computer system appropriate to most farms.

Morrow indicated many large-scale farmers spend \$10,000 to \$15,000 by the time a full range of "software" — tapes and disks — is on hand.

In general, on-farm computers can be used for three operations — record-keeping, decision-making, and control of processes or devices such as the sprinkling systems mentioned earlier. Computers can write payroll checks and W-2 forms. They can also provide countless information needed for tax report forms.

"Many commercially packaged programs are available, giving step-by-step procedures for carrying out cost-accounting programs," Morrow stated.

New computer programs, actually guides to various procedures, are coming on the market all the time, it was noted. For example, computers can analyze investment decisions such as buying of machinery. The Penn State engineer said many farmers have been successful in computerizing inventory and maintenance records. Computerized records can be updated more readily than the traditional forms of record keeping, he said.

"Buyers should know the quality

of 'software' (tapes and disks) varies widely," Morrow cautioned. "In general, a commercial package program (guide to procedures) is more cost efficient than hiring a consulting firm to develop tapes or disks for a particular use," he added.

And he advised farmers to explore thoroughly the package programs before a buying decision is made. Most computer stores will demonstrate the capacity of a tape or disk program package, he said.

Check the availability of program packages and "hardware" such as printers before a purchase is made, he suggested. Also keep in mind that "software" disks and tapes for one manufacturer's machine usually can not be transferred easily to another maker's unit.

Morrow indicated that a number of publications will help provide information on access to "hardware" and "software." Such books and magazines are widely at newsstands and bookstores. Some publications relate specifically to farm applications. And he pointed out that people need not be experts in computer programming to use personal computers on a farm.

Step-by-step procedures for computers come in a wide variety of package programs, it was noted. Some land-grant colleges have designed specialized programs available at low cost. Computer stores also carry a series of programs for record keeping and other financial operations. Most of the latter were not developed specifically for farm use.

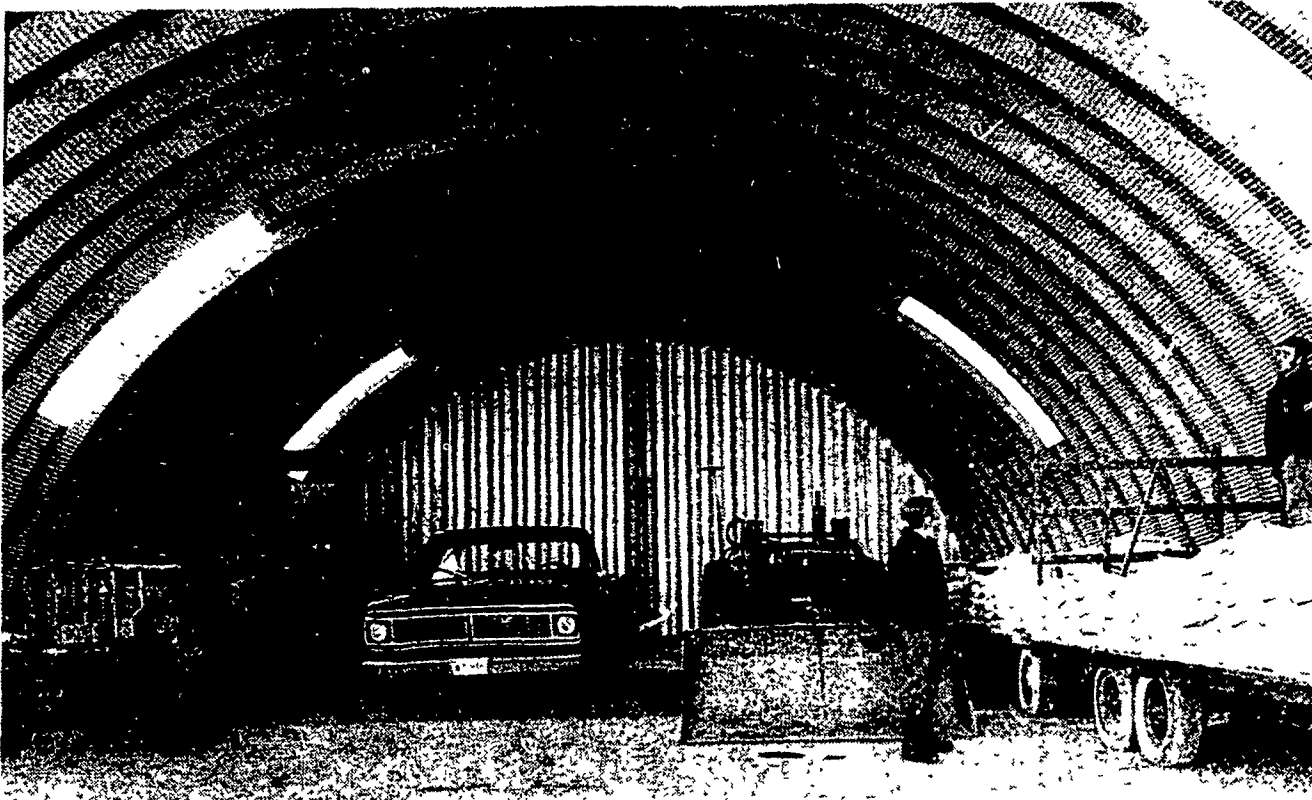
Morrow claimed that several computer networks make agricultural information available over a telephone line into a personal farm computer. A farmer can have up-to-date reports of needs such as commodity exchange quotations, stock market quotations, and weather forecasts. Several commercial services

also make general information available at low cost, transmitting into personal computers. These services are not specifically related to agriculture, Morrow said, but do provide information on financial transactions, weather forecasts, and similar data.

The Penn State engineer observed that farmers traditionally buy personal computers for use by the entire family. He claimed there are good educational packages of this type available for people of all ages. In addition, many people like to use games on personal computers. He noted that many people have their first experiences as computer programming in developing games.



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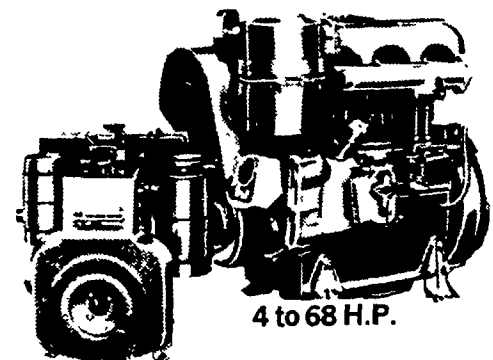
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