



美吐密执安州大学农学院约翰逊、哈希曼、德尔斯、切得三位教授来华讲学纪念合影
1981.10.20于哈尔滨

















奈良交通定期観光バス

奈良名所観光記念
法隆寺

古くは斑鳩寺ともよばれ、推古15年(607)聖徳太子が創建。境内は、五重塔・金堂のある西院と、夢殿のある東院を中心に、多くの塔頭からなり、金堂や五重塔は世界最古の木造建築である。国宝・重文が数百件もある飛鳥美術の宝庫としても知られている。

n the Farm

farmers get questions.

considering
to harvest

en hiring the
r has an old
ought his eye
to take the
equipment will
ance and up-
Mr. Farmer's
er efficiency

n at his tele-
then plugs in
times on the
is answered
to order the

e fiction. But
plex financial
ly by picking
of efforts by

Even so, the problem was completely solved in less than five minutes.

In this particular example, the computer announced that John Q. Farmer would save more than \$2,000 if the combine were purchased and used eight years. It also gave advice on which method of depreciation to use and also said that it wouldn't pay to buy the machinery if it were used to harvest less than 240 acres.

Dr. Harsh, one of the leaders in setting up the system and computer programs for it, gave a rundown of the problems the equipment is capable of solving.

Variety of Programs

Among them are the investment question described here, calibrations for air-blast sprayers and weed sprayers, herbicide recommendations for corn, recommendations on what to do to combat apple scab, advice on fertilizers to use in various types of soil for various crops, income tax averaging analysis and income tax management analysis.

Although the system is fairly new, word of it has spread and, due to the time of year, the income tax programs already have proven to be popular. Another program now being readied will aid in diagnosing



Dr. Steve Harsh checks figures he will give to a computer on push-button phone.

push-button telephone set with them and have been instructed in how to use the system.

District horticultural agents soon will have the same equipment and training. If successful, the system might be expanded to include all county agents and possibly some agri-business firms.

A farmer now wanting an answer to a problem the computer is geared to solve simply would contact his

county agent to find out when the
be making his next swing throu

At first glance, contacting a
tion to the computer appear
minutes of learning some basic
up the apparent mystery.

With a push button telephone
operated blindfolded. Impulses
buttons tell the machine what t

There's no problem if a partic
doesn't happen to have push-but
available (Michigan Bell's name
Touch-Tone). The computer can
lar dial phone with the push but
after the initial contact.

Computer "Talks"

The person calling the comp
machine-generated female voice
give. The non-human voice the
answers and repeats them if de

The computer also is program
has a chance to correct any erro
in feeding information.

Currently, the only cost inve
lems with the computer's help
station-to-station phone call. C
being paid for under a MSU Ke

Although the system is operat
it in the experimental stage. If
for the service, it still can be
sufficient demand, the system o
perhaps enlarged to handle oth

While few, if any, farmers co
of their own, the MSU-U. of M
close as the telephone.

Synthia, a 'Gal' Who Does What She's

A mass of metal and electronic parts that talks.

It seems impossible. But anyone using the University of Michigan-Michigan State University agricultural computer program system knows it's true.

The fact that the computer can



intensity over.
And machines
reproduce any
tion of sounds.

The U. of M.
in a female voi
the female voi
duce mechanics
machine could.



Computers Speed Up Farm Management Decisions

By Darrell Petska
Editorial Assistant
Department of Information
University of Nebraska

The age of computers may soon be available at the fingertips of every farm and ranch manager who has access to touch-tone telephoning or teletype systems, a University of Nebraska Extension Farm Management Economist suggests.

Dr. Larry Bitney of the NU College of Agriculture said that the systems can be utilized for such decisions as whether to buy or custom hire machinery, to use income averaging rather than standard tax computations, and to determine how much an individual farmer can afford to pay for a group of feeder cattle.

The Extension economist noted that two states—Michigan and Virginia—already use touch-tone and teletype remote computer terminals to assist farmers and ranchers in making their management decisions. They are used there mainly in Cooperative Extension work, but one Lincoln firm now uses the teletype computer terminal to figure least cost feed mixes, Bitney pointed out.

Demonstrated recently at the meeting of the North Central Extension Farm Management specialists in Lincoln, the two systems will "become a definite part of farming operations in the future," according to Michigan State University Ag. Economist Al Tinsley.

Bitney explained that with the touch-tone system, a touch-tone telephone is used to call a computer. After the computer is electronically activated by calling, information necessary for the computations is relayed by touching numbers corresponding to the data on the touch-tone telephone. The different sounding tones of each number clue the computer to the exact information being requested.

continues. The answers from the computer are then transmitted to the touch-tone operator by the same computerized voice.

The teletype remote computer terminal employs a standard teletype which is used by the operator to contact the computer and then to type the appropriate information on the machine. The teletype, through the computer, reveals the responses of the computer, Bitney said.

He commented that some of the problems for which the computers are used could be worked with pencil and paper, but that the computer is much faster, easier and more accurate. Only a few seconds of computer time are involved, and only five minutes may be needed for a decision to be reached through the two systems, compared to possibly hours or days in present cases.

Because the teletype costs about \$70 per month, Bitney added, only the larger farmers or businesses could afford the expense, but a county Extension office or large company could profitably utilize such a system, leasing the devices to the farmers to cover expenses of the installation and maintenance. An advantage of the teletype is its reduced toll of calling; however, the touch-tone would probably cost less than five dollars per month in addition to normal monthly telephone bills, he noted.

He cautioned that before managers could use and interpret such computer information, a workshop might be necessary so that they become more adept at the operation involved.

Bitney also pointed out that the use of a touch-tone system is limited to problems with a relatively small number of input items. It therefore might not be used for farm record entries individually given, because of the large data accumulations.



Stephen Harsh, Ag. Economist of Michigan State University, is shown using the touch-tone remote computer terminal to contact the computer, before relaying information needed for decision computations. Harsh, son of State Senator Lester Harsh of Bartley, demonstrated the use of the remote computer terminal during the recent meeting in Lincoln of the North Central Region Extension Farm Management specialists. He used the phone to contact a computer located in Michigan. As the system becomes more commonly used, computers may be available in person's hometown or at short distances away, lessening calling charges. The touch-tone phone illustrated could be acquired by any farmer or rancher for use in his own home. The terminal, although previously available, is now being extended into the area of farm management decision making. (University of Nebraska Photo)

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THE POLITICS OF ENERGY

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 - ❖ The new **Copenhagen Accord (& Cancun Adaption)**
 - Overall goal: Limit warming to 2 degrees Celsius
 - US Goal: Roll back from 2004 level, 17% by 2020
- stuation in the cost for fossil fuels**

































