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# **NEW HORIZONS IN AGRICULTURAL INFORMATION MANAGEMENT**

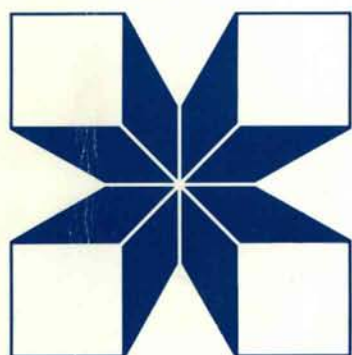
PROCEEDINGS

OF AN INTERNATIONAL SYMPOSIUM

MARCH 13-16, 1991

BEIJING, CHINA

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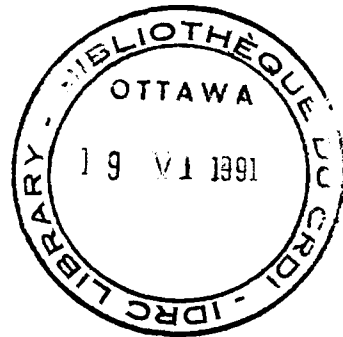
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# **New Horizons in Agricultural Information Management**

**Proceedings of an International Symposium,**

**March 13-16, 1991, Beijing, China**



**Compiled and Edited by**

**Gary K. McCone**



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# **Broadening the Media of Communication of Agricultural Information and Its Role in Agricultural Development**

LIU Shixing      LI Cuie      GONG Junjie

*Branch Center of Central China  
China's AGRIS Institute of Sciencetech Information  
Hubei Academy of Agricultural Sciences  
Wuhan, China*

The Branch Center of Central China's Regions, China's AGRIS is attached to The Institute of Information for Agricultural Sciences and Technology, Hubei Academy of Agricultural Sciences in Wuhan, China. The Institute has stored about 100,000 documents in its library. Each year we acquire about 8,000 additional documents including books, periodicals and various abstracts and bibliographies both by subscription and exchange. Recently, we have installed a Sony video tape recorder, a Xerox machine, several typewriters, and have set up an offset lithography printing plant with a laser printer, and editing and type-setting computer system. We also have a PS/2-50 microcomputer provided by International Development and Research Centre of Canada in 1988. We are now using this advanced equipment to provide information service to our users.

In order to develop and utilize the information resources effectively, we try our best to broaden the media used in the communication of agricultural information and to provide active information services instead of passive service as in the past.

## **I. BRINGING PERIODICALS, NEWSPAPERS AND RADIO/TV INTO FULL PLAY AND TRANSMITTING INFORMATION RAPIDLY AND ECONOMICALLY**

The Institute issues two kinds of publications: one is periodical and the other is non-periodical. The former includes *Journal of Hubei Agricultural Science* (Monthly), *Farmer's Advice*, *Information of Agricultural Science and Technology*, *Latest Bibliographies* and *Bulletin of Agricultural News Forecasting*. Besides reporting new findings and results on scientific studies, there are several columns such as "A Collection of Choice Specimens from Sciences and Technology," "Abstracts of Science and Technology," "News of Science and Technology," "Reviews of Literature," "Business and Management," "Policy and Law," and "Technique Transference." A lot of information is reported in these columns. The non-periodicals are as follows: *Brief Reports of Scientific Research*, *A Collection of New Achievements in Agriculture Research*, *Reference for Agriculture*, *Annual of Scientific Research*, and *Brief Reports of On-going Research Projects*. More than 10,000 information items are transmitted to our users annually through the media mentioned above. Some informative news has been transmitted to

users by the provincial broadcasting station or TV. As soon as new research achievements or technology have been reported, they are rapidly applied to agricultural production. For instance, a research article titled "Double-Transplanting Seedling of Late-Seasonal Hybrid Rice by Dry-Seedling Casting and Lodging" was published in *Journal of Hubei Agricultural Science* a year later, this new rice growing technology has been extended in Hubei Province and the growing area was 76,933 hectares by using the new technology and in the third year the growing area had been doubled. At the same time this new technology has been extended to Jiangsu, Anhui, Henan, and Guizhou provinces and worthwhile social and economic benefits have been gained. For example, 9,800 hectares of rice has been grown in Yangxing County using the new technique in the past year and the rice yield has increased by 6.85 million kg in the whole county.

We also use the column "Information Window" in two major newspapers in Hubei Province, one is *Farmer's Friends* and the other is *Information for the Countryside*, and one separate publication *Advice for Farmers* - to transmit information. Each year about 5,000 bibliographies on agriculture are published in the two newspapers. After the bibliographies have been published, many users come or write to us to acquire the full text articles. According to statistics made by the Editorial Department of *Information for the Countryside*, 436 bibliographies have been carried in one of the newspapers mentioned above from July to December in 1988. These bibliographies were used by 886 people. Some users even travel more than 1,000 km to our Institute to get the full text articles. Now let us take Xiaogang Farm as an example. A grass plant whose straw can be used for making mats, is grown on the farm. The straw yield of the plant is very low due to infection by disease. After the farmers of the Xiaogang Farm got titles of two papers--"Occurrence and Control of Blight in Grass Plants Which Straw Can Be Used for Making Mats" and "Technology of Growing A Plant Which Straw Can Be Used For Making Mats," they quickly got the articles in full text from us and then used the technology which the two papers explained in growing the grass crop and controlling its disease. As a result, the yield of the grass plant doubled and the farmers' income has been increased by exporting the straw.

Besides printed products, we also try to cooperate with the Hubei Radio Station and the Hubei TV Station, so that more and more agricultural information and news is available to farmers and other users over radio and TV. Each year, more than twenty sets of video tapes or films concerning new technology or achievements in agricultural study have been shown on TV. By doing this, farmers in remote mountainous areas have more chances to get information and learn how to use new techniques in agriculture production. For example, within only one month after a new compound fertilizer N-FIX N.S. was reported through broadcasting, 150 farmers wrote to us and asked for its price and wanted to know where to get it and how to apply it. This new fertilizer has now been applied to large areas of vegetable crops.

The facts have proved that periodicals, newspapers and broadcasting or TV are still the main and most effective information transmission media in China today under conditions of non-advanced communications technology. The results of an investigation of

200 users have shown that 80%, 90%, and 98% of information is gained respectively from periodicals, newspapers or radio/TV by agricultural scientists, extension persons and farmers. Other statistics show that information about new achievements and new products is spread widely by the mass communication media.

## **II. PROVIDING INFORMATION SERVICE THROUGH SDI: SELECTED SITES AND SELECTED USERS AND TRANSMITTING INFORMATION DIRECTLY**

Providing the service of SDI, selected sites and selected users is an effective way to replace the previous passive service. This type of service has the following characteristics:

- Information that we provide to users is needed by users.
- Information needed by users is available very fast.
- We give users not only information, but also some materials or products such as new fertilizers, new pesticides or seeds.
- We can obtain feedback from our users quickly and improve our service at once.

In providing the three types of services, the main methods we use are as follows: first, we select the right topic, the right service sites and the right information users then discuss and make plans for accomplishing it together with the users including agricultural scientists, technical extension specialists and farmers. We often attend the meetings held by scientists and do field experiments with them. By doing so we know what users really need and we can improve our information service to them.

The SDI service is mainly to serve agricultural scientists who are seeking information to meet their academic requirements. First, we provide the scientists with a scientific basis for proving their selected question for study; Second, during the time the scientists are doing the study, we meet their academic requirement in a timely manner. In the past two years 1,200 bibliographies, abstracts, and full text papers have been made available to ten study groups. Research methods for five key questions under study such as "Technology for Growing Barley for Animal Feed" and "Growing Technology for High Yield of Hybrid Rice" have been improved due to our SDI service being available to them. The process of studying four questions such as "Study on Plant Photoperiod-Sensitive Genetic Male Sterility" and "Study on Microelement Deficient Disease in Soil" has been shortened after the scientists gained new insights from the information which we gave them.

Senhu Farm of Hanchuan county in Hubei has been chosen as one of our selected service sites. Besides having about 360 pieces of information in written form or materials available to them each month, we also send information specialists to investigate the local production and carry out some projects jointly. New varieties have been extended on this farm. For example, a new high yield corn variety "Danyu 13" has

been grown on the farm on 26.6 hectares and the corn yield has been increased by 25,000kg. Through investigation we found that edible oil is in short supply due to the low yield of sesame plants grown in Yun County. Then we did some information searches in the literature in order to find some new cultivar of oil seed for the farmers in this county. Finally we have found that perilla seed which not only has high yield, but also contains a high content of oil, is an optimal oilseed. The seed can be used instead of the sesame seed. Then 400 ha of Perilla was grown on a farm. Through this experiment we have found that Perilla is one of the oilseed crops which would have a potential future in the county.

Selected users service is a service in which some specific information users are selected and then we give them information service at regular intervals. Besides this, we also send technicians to help farmers perform field experiments by using a new technology or new varieties. After the experiment is quite successful, new technologies or new varieties have been extended to large areas.

### **III. RUNNING SPECIFIC TRAINING COURSES AND CORRESPONDENCE COURSES IS MORE ECONOMICAL AND A FASTER METHOD FOR THE TRANSMISSION OF INFORMATION**

We analyze and evaluate some useful and selected literature. We also collect and disseminate materials which carry information urgently needed on the information market, or have a potential future in agricultural production, or can help farmers to get money quickly, such as some papers concerning new technology, or new cultivars and products. Finally these materials have been compiled into technical manuals or guides. Then we run training courses or correspondence courses using the manuals or guides as teaching materials.

In the most recent two years, we have run seven training courses, such as "Raising Techniques of Pearl Chicken," "How to Use Pig Feed-Additives," "Integrated Prevention and Treatment of Chicken Diseases," and so on. About 1,000 persons attended the training courses. Persons use the technology learned from the training courses in agricultural production. By doing so, they not only gain a financial benefit, but also play an important role in local agricultural production. For example, after the farmers have learned techniques about feeding pigs with the additives from the training courses, they bought five tons of feed additives for pigs from Wuhan Feed Additive Plant at once, and fed the pigs with the additive in the pigs' daily diet. As a result, 10,000 pigs which were fed with the additive have increased their body weights very quickly and have been sold out forty days earlier than those not fed with the feed additive. The pig farmers' income has been increased by 1 million Yuan.

#### **IV. SETTING UP AN ORGANIZATION FOR DEVELOPING INFORMATION SERVICES AND HIRING PERSONS FOR EXTENSION ARE IMPORTANT MEASURES IN TRANSMITTING INFORMATION EFFECTIVELY**

In order to bring the collected information into full play, an Department of Developing Information Service was set up in our Institute in 1988. Based on the principle of self-willing and mutual benefit, we employ 25 technicians in charge of extending technology and new varieties. These 25 persons hold two or more posts concurrently. Some of them work in local government organizations or do research work, most of them do technical work on farms. We acquire the information materials and then analyze and evaluate them. Through evaluation, some information materials concerning new and practical technologies or products or new varieties which have a potential future in extending or can help farmers to get money quickly, have been chosen. If it is necessary, some new technologies or real products or seeds of new cultivars have been introduced. Then we ask our persons in charge of technical extension to do the field experiments and demonstration work, finally extending them to large areas. According to how much is gained by the farmers, we charge them and pay money to the people in charge of the extension work hired by us. Both the farmers and persons doing the extending work can get benefits from it. In recent years, we succeeded in technical extending work. For instance, we got news from Information of Guangdong Science and Technology that a new chemical produced by CIBA-GEIGY Corp. in Switzerland is very effective in debudding of the tobacco plant. Then we got the new chemicals and asked a person who is responsible to do technical extension work to do the field experiment with it in Xiangfeng County. By doing the experiment, we have found that the chemical is very effective in debudding the tobacco plant. In 1989, 200kg of the chemicals have been acquired and applied over 1,333 ha. of tobacco plants. As a result, 8,000 laborers who are traditionally used to debud tobacco plants have been saved and the income of tobacco growers has been increased by 1.34 million Yuan. Our Institute and persons who did extending work got 10,000 Yuan from tobacco growers using the chemicals. In 1988, we knew from *Pig International* published by Watt Publishing Co. that the medicine "Gleptosil" produced in the U.K. is very effective in treating piglets anemia, increasing the survival rate of piglets, promoting pig's growth and increasing their body weights. We got the medicine and asked our technician to do the experiment on our Academy Farm. The body weight of each piglet which received an injection of 1 ml of the medicine increased by 3kg three days after it was born compared with an injection of Iron (Fe) or Cobalt (Co) produced in China. Then the Department of Developing Information got 300,000ml of Gleptosil and extended it to several counties in Hubei Province. We are expecting to increase pork production by 900,000kg, and economic income by 5.1 million Yuan in these counties.

Information we have collected is generally in written form. If it is necessary we introduce new technology or products from other provinces or abroad. If some new products are not available on the market, we will try our best to develop them. That is our procedure for materialized information. For instance, the Department knew from "The Catalogues of Patents in Agriculture, Animal Husbandry, Fishery, Sidelines and

their Products Processing" that a feed additive for silkworm produced in Japan is very effective in increasing the silk cocoon yield (30%). Through searching the literature, we have found that this feed additive is not available on the market now. At present we are trying our best to develop and produce it by cooperating with the Institute of Sericulture, Hubei AAS. We hope that we will succeed in developing it. Our Information Institute has made certain contributions to the development of agriculture by providing information service to the users. But our information service work is still in the preliminary stages and there is a lot of work for us to do. We hope to gain some good experiences through this conference and push our information service work forward.