Application and Perspectives of ICT in Agriculture

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The current situation of Agricultural informatics utilization in Korea

- Increase of information devide between urban and rural

○ PC dissemination
  - total 60.1%
  - rural 29.2%

Trend of PC dissemination
○ Internet utilization: total 59.4%, rural 11.9%
○ Index of information: total 100%, rural 84%
○ Internet connection method
  - ADSL: total 76.6%, rural 54.6%
  - Modem: total 9.1%, rural 18.0%
○ Means of information acquisition
  - TV, Radio: total 92.2%, rural 98.1%
  - PC Network, Internet: total 35.7%, rural 4.3%
Internet utilization section
- E-mail: total 59.5%, rural 42.8%
- Search for information: total 34.6%, rural 60.3%

E-business utilization: total 25.2%, rural 14.8%
Education of information: total 21.8%, rural 3.9%
Major utilization of ICT in agriculture

- The establishment of efficient combination of BT and ICT
- Precision agriculture through informatics of cultivation and mechatronics technology
- Management of agricultural environment
• Marketing informatics for increasing ago-products value-added

• Informatics of the agricultural technology and agricultural science digital library

• Cyber extension and educational system
Accomplishment and Planning of the applied ICT

The development of applied system to efficient combine of BT and ICT

- The database of Bioinformatics research related crop genome
- Genome of rice and Chinese cabbage, information of a base sequences et al.
- Auto upgrade system related to genome DB of GenBank: 14 million cases
- Genome DB and web service
- Establishment of Mirror Site for international cooperation of genome DB
Precision agriculture through informatics of cultivation and mechatronics technology

- Network operation for efficient management of agriculture product facilities
- Network of measuring information and environment for control of greenhouse
- Early practice of informatics on agricultural facilities and automatic technology
- Predictions of yield and crop situation by applying DB of greenhouse environmental information
• Remote control system of greenhouse environment, by using mobile

• Development of automatic storage system related high quality of agricultural products

• Database of livestock individual information and its analysis system
Management of agricultural environment

- Database of soil environment information and web-services (to recommend for using land)

Land-use map
Management of agricultural environment (continued)

- Construction on national network of agricultural weather: 61 agricultural technology center
Management of agricultural environment (continued)

- Development of automatic collection system of Agricultural Environment Information
- Soil Characters Survey System by using Remote Sensing
- The Development Cultivated Machinery attaching GPS
Management of agricultural environment (continued)

- The Collection of Pest Information by using Mobile
- Integrated pest network management system
- The development of simulation model for forecasting and protecting of pest
Information system for improvement
farm management

• Benchmarking system for farm Diagnosis Evaluation
• Database of farm diagnosis data of 50 crops: 68,000 household
• Agricultural software for farm management analysis
• The development of farmhouse's homepage to support e-commerce of agricultural production
• Wholesale price analysis system of the Agricultural and Livestock production
Agricultural technology information system and digital library

- Agriculture information database and internet service of the research results

<table>
<thead>
<tr>
<th>Commodity</th>
<th>No. of Information</th>
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<td>Food Crop</td>
<td>709</td>
<td>Ag. Machinery</td>
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<td>Special Crop</td>
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<td>Ag. Material</td>
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<td>805</td>
<td>Environment</td>
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<td>Fruit</td>
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<td>Rural Life</td>
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<td>Flower</td>
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<td>Farm Management</td>
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<td>Storage &amp; Utilization</td>
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<td>Animal Health</td>
<td>260</td>
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Agricultural technology information system and digital library (continued)

- Digitalized and nationwide network of agricultural science digital library
- The original text database of RDA publication and Agricultural Journal of in Korea
- Agricultural thesis (PH.D)
- E-Journal
Development of cyber extension system

• Remote consulting network system for farmers
• Education and consulting: technical matters on field, seminar at research and extension service center
• Farm management consulting by moving camera and radio system
Network

- Research institute : 9
- Provincial RDA : 3
- Extension service center : 29

Network

- Research Insti.
- Provin. RDA
- Exten. center
- ‘03 plan
Remote consulting network system

Expert consulting among researcher, extension guider farmers

Research Institute  Tech. & Ext. Institute

RDA

Exten. center  Farmhouse
Core Customer Support System

- The sharing of information and knowledge between agricultural expert and farmer
- DB in CCSS: farmer 10,000 person, researcher 2,000, extension guider 5,200
 Development of cyber extension system (continued)

• Establishment and operation cyber farmers college
• Operating planning to cyber education system
• Educational course and students: 6 course, 1,200 persons
• Development of the demonstration system and education
Area of ICT application become expanding rapidly and scientists of various applications participated. There should be much more cooperation among countries and members.

The sharing of information and knowledge, also the creation of new collaborations and partnerships for research through applied ICT in agricultural.
○ To supply agricultural information and link agricultural researchers to farmers through the use of new ICT.

○ The sharing experience in issues related to coordination and control of information systems and the strategic use of ICT in agricultural among attending members at this meeting.
Thank you very much