THE DEVELOPMENT OF ORGANIC AGRICULTURE TECHNOLOGY AND ITS APPLICATION IN KOREA

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ABSTRACT

Korean organic farming started in the mid-’70s by some pioneering farmers. Since the Environment-Friendly Agriculture Fosterage Act started in 1997, the government became actively involved in organic R&D, dissemination and certification. With these results, organic agriculture in Korea was well developed over the last two decades. It demonstrates that the number of certified farm for organic agriculture and products has drastically increased in recent years. The Korean organic food market grew at an astonishing rate of over 100% through 2000, and during the last five years, has maintained an average growth rate of 50%. The organic market is predicted to climb to $6 billion by 2020. Organic food now represents a 10% share of the total agricultural products market, which suggests that organic products have entered into the mainstream consumer market.

Organic agriculture division belongs to the Department of Agricultural Environment in NAAS (National Academy of Agricultural Science) and was the key role in the development and dissemination of organic agriculture technology. The internet also has an important role in the dissemination of organic agriculture technology in Korea. Farmers and consumers have the same opportunities to get information about organic agriculture technology, news, maintenance system via cyberspace.

Keywords: Dissemination, Korea, Organic Agriculture, Product, Technology

INTRODUCTION

Organic agriculture started from mid-’70s in Korea by some pioneering farmers, who are Christians. Until the beginning of the ‘90s, government policy and maximum agricultural productivity are different from the ideas of organic farmers. When international trends in environmentally friendly agriculture policy started in early ‘90s, the situation had been changed slowly. Since the start of the Environment-Friendly Agriculture Fosterage Act in 1997, government actively became involved in organic R&D, dissemination and certification. Government prepared detailed action plans for environmentally-friendly agriculture rearing in every 5 years since 2001. In the 3rd action plan, organic agriculture became an important part of government support.

DEVELOPMENT OF ORGANIC AGRICULTURE TECHNOLOGY

Organic agriculture division

In Korea the organic agriculture division belongs to the Department of Agricultural Environment in NAAS (National Academy of Agricultural Science). Organic agriculture division is the head office for all organic related projects in RDA. The division is working together with the RDA main office in research planning and evaluation (Fig 1). Two kinds of research funds are available. Members in organic agriculture use institutional funds exclusively. But, if they are involved in joint research work with other institutes or universities, they can use cooperative funds, which are handled by the RDA main office.
Current organic research fund is about US$3 million, comprising of institutional and cooperative research. Two other divisions in RDA are working in organic agriculture. Agricultural material evaluation division in NAAS has a mission on evaluation of certified organic materials (commercial), such as organic fertilizers or materials for pests and diseases control. The other division, which is the agricultural material industry division, handles regal regulations of organic materials. They inspect companies where organic materials are produced, and collected samples to verify legality. If they are out of regulation, they receive penalty, and sometimes, lockout.

Provincial level research station

There are nine provincial research stations in Korea, which has research and extension function (Fig 2). They belong to the local government, and work for the regional needs in agriculture. Most of the provincial research stations have environmentally friendly agricultural division, and work on organic and related subjects. Also, they have special crop research stations, where they are working on crop based organic research. In local research stations, they use mainly local government funds for organic research. But, many researchers apply for RDA cooperative projects, and use RDA funds.

Universities

Organic research in universities highly depends on RDA cooperative projects. Some professors apply for research funds from MIFAFF (Ministry of Food, Agriculture, Forestry and Fishery). MIFAFF has its own research funds. Mainly, organic processing is funded by MIFAFF. Recently, MIFAFF funded three national universities to build organic R&D center. But, they do not fund for research projects. University organic R&D center have to get research funds from RDA or local government. They have education function for farmers, and can be funded by the local government.

Farmers

Some farmers have genius ideas and apply them to their own fields. Many times, they share the idea with the members of the organic community or through cyberspace. Even though the techniques have not been by scientifically proven, some people find it worthwhile to apply in organic fields. Once in a while, some techniques are different from organic rules and government regulations

DISSEMINATION OF ORGANIC TECHNIQUES

Organic agriculture division

Organic research produces scientific papers, recommendations for farmers, policy recommendations to MIFAFF, and technical manuals and materials for public information. Recommendation for farmers are delivered to RDA rural support bureau, and disseminated to local extension office by documents or manuals. Technical manuals are published in RDA or organic agriculture division, and it can be downloaded from the website of the organic agriculture division (Fig 3. http://naas.go.kr/organic)

Provincial research stations

Some provincial research stations have good organic research system, and their function is very similar to the organic agriculture division of RDA. Since local extension has close relationship with provincial research stations, Dissemination of organic information is relatively easy to transfer to the farmers.

Extension (county and city)

Since extension officers meet farmers frequently, the roles of extension officers in dissemination is very important. However, not many officers have good knowledge about organic farming systems yet. But, in some counties or cities, where county head men or mayors emphasized organic agriculture, they have good system for dissemination of organic techniques. They often operate organic schools for local farmers. Some cities are interested in organic farming system as city farming techniques.

Farmers' organic communities

Many crops or regional based organic communities have been organized in Korea. Communication among organic farmers is very active. They share their own marketing and technical information. Sometimes, they organize cooperative unions, and operate delivery or processing companies.

Roles of Internet

The internet has important roles in organic agriculture in Korea. Anybody who is interested
Fig. 1. Organization of RDA (top) and NAAS (below)
Fig. 2. Provincial research stations in Korea and their research cooperation within the regional area.

Fig 3. The website of Organic Agriculture Information Center in RDA (http://naas.go.kr/organic)
in organic farming can get information on organic techniques or from somebody’s experiences easily. Most organic farmers are connected to the internet system. Some villages have community internet houses, which are managed by the local government. Community internet managers help farmers to learn how to use and surf internet, and create farmer’s homepage to sell organic products through the internet. RDA, provincial research stations and county extension offices have their own websites to disseminate agricultural techniques and technologies. Some local government research center or extension has excellent organic information

ORGANIC PRODUCT MARKET

Market overview

The organic market is entering a new phase in Korea. The market share increased to US$3.3 billion, based on market price, in 2011. Organic processed food production has also seen major growth and changes in the past decade. Major food manufacturing companies are beginning to enter the packaged organic products market, because the organic processed foods market is increasing by 25% each year. Out of the domestic processed foods, however, it is important to note that 72% of the ingredients were imported, and of those, 89% were imported from the United States and the EU. Most fresh organic vegetables and fruits are produced and consumed domestically. Korea’s organic production is also growing at a fast pace.

PRODUCTION

Most of the fresh organic fruits and vegetables are produced and consumed domestically. Korea’s organic production history is short compared to other countries, but is growing at a fast pace. Major companies are beginning to enter the packaged organic products market, because the organic processed foods market is increasing by 25% each year (Fig. 5 and Fig. 6). The expected effect of major companies entering the market is that it will lower the cost of production and distribution and thus lower the retail cost. Their entry increased consumers’ accessibility by setting policies and reasonable prices.
Fig 5. Trends of sustainable agricultural production amount (ton) by certificate type.

Fig 6. Trends of sustainable agricultural production amount (ton) by product type.
CONCLUSION

Consumption and market sectors

The increasing consumption of organic food products has been a global trend for a number of years already, and Korea is no exception to this. Consumers in Korea are increasingly more willing to purchase organic products as they become more aware of the importance of healthy and safe eating. The organic market grew at an astonishing rate of over 100% till the beginning of the 2000’s, and, during the last five years, is still maintaining a growth rate of 50% on average. The growth rate is expected to decline slightly around year 2015, when the low-pesticide category will be excluded from the organic list; nonetheless, the organic market value is predicted to climb up to US$6 billion by the year 2020.

REFERENCES