

CURRENT STATUS AND FUTURE PROSPECTS FOR USING ORGANIC MATERIALS IN AGRICULTURAL LAND

-CASE OF LAOS, THAILAND AND JAPAN -

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1. BACKGROUND AND OBJECTIVES

Recently, organic materials have been re-considered use in agricultural land from increasing needs of safety food and environmental conservation. In this study, organic materials are defined as the organic materials applied to agriculture, including organic fertilizer, compost, manure, dung, rice bran. Organic materials are very important to keep soil in good condition because they supply crop nutrients and improve soil physical properties.

Farmers can be classified into four types in terms of the materials they use as follows: 1) not using any fertilizer and material, 2) only using chemical fertilizer, 3) only using organic materials, and 4) using both chemical fertilizer and organic materials. By using organic materials, farmer 1) can increase yield of crops, farmer 2) can reduce expense of fertilizer, farmer 3) can add value of eco-friendliness or safety to crops and farmer 4) can add value of high quality to crops. To use these organic materials effectively, we need to grasp current status of using organic materials in agricultural land. For this purpose, this study gives three cases of Laos, Thailand and Japan, which are under different economic conditions and farmer pattern (1 ~ 4). This study also considers future prospect for using it more effectively.

2. RESULTS AND DISCUSSION

Most farmers of Laos are classified into 1) and 2). Agricultural Land Development and Conservation Center of Laos developed and tried to promote "Compost Organic Fertilizer" made of materials available for farmers. It can supply crop nutrients and improve soil physical properties. Now, whether COF truly contribute to increase crop yield in various areas should be verified. Suitable input rate of COF not to adversely affect environment should be also identified. Considering that collecting necessary materials and making COF takes a lot of times and labor, whether farmer can reduce expense of fertilizer should be also examined.

An Organic farmer in Thailand used organic materials which supply crops a lot of nutrients instead of chemical fertilizer. He can sell his products with added value of eco-friendliness and safety. However, if he uses only organic materials, excessive input may cause environmental impact like groundwater pollution because of nitrate nitrogen. Furthermore, organic food is not always safe because it varies by ingredient of organic materials, quantity of input and soil conditions. Therefore, it is necessary that scientific observation for making regulation of upper input quantity of organic material. Recently, he has organized several farmer's group through Royal project in Thailand. Enhancing farmer organization, more can reduce the cost of time and labor, improve productivity of crops by using agricultural machines cooperatively and disseminate knowledge and technique of organic material.

Farmers in Minamiawaji-city, Hyogo are commonly classified as 4). In this city, because the stock-raising industry has been popular for a long time, most crop farmers can use cow manure as one of the organic material. They think cow manure improve quality of crops. However, they may input excessive cow manure at their own field, which may negatively impact on environment. Therefore, it is necessary to make regulation of upper input quantity of organic material and develop technique to easily manage organic material nutrient status.