

Comparing the standards of organic farming in Bangladesh with European Standards

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Abstract: Farmers of Bangladesh use huge chemical inputs for getting the more production. Therefore, government and 14 NGOs have been encouraging and training farmers to introduce organic farming. Many farmers have adopted this approach on their homestead land with some exception on farm land because of lack of consumers' trust. The main goal of the study is to assess the standards and compare with European standards. Information have been collected from 30 different types of key informants and comparison has been done according to standards regarding land conversion, crop production and maintenance of farm animal. Qualitative analysis has been done and it is found that farmers are maintaining good quality standard but below than European standard.

Keywords: Organic farming, standards, key informant, qualitative research.

1. Introduction:

Agriculture is the main livelihood strategy in Bangladesh and it contributes 21% of the GDP and provides 52% of employment (BES 2007). In the past, Bangladesh suffered a deficit in food production. Recently, it has attained the status of food grain surplus country but due to increase in the cost of production, rice farming is currently a non-profitable enterprise for farmers.

The agriculture of Bangladesh has faced countless challenges – soil erosion, salinity, soil acidity, imbalance of nutrients in the soil and the overall environment – all these are associated with the consequences of Green Revolution. Many researchers recommended that organic agriculture is effective in poorer countries and it can give socio-economic and ecologically sustainable development. It can overcome the harmful impacts of the green revolution. Before green revolution, Bangladeshi farmers did not use chemicals. For climatic disasters and the change from subsistence to commercialization, farmers are now heavily dependent on input oriented agriculture. Some farmers never use synthetic fertilizer or pesticide. They are struggling for their survival and don't know what is organic?

Many trained farmers realise the importance of ecological agriculture and have adopted this approach on their homestead land. However, they are not practicing it on major farming land because of the lack of getting proper price and consumers' trust. It is also very important at this moment to search export items from Bangladesh. So, farmers need to follow international standards which can give trust for the local consumer as well as earning foreign currency from export organic food items.

There are two different kinds of organic farms: certified organic farms and non-certified organic farms - often referred to as eco-friendly farming. At first, PROSHIKA, UBINIG and some other NGOs started their activities in Bangladesh against chemicals. At present, 14 NGOs promoting ecological agriculture. Most of them run programmes that encourage poor women to grow vegetables on homestead land.

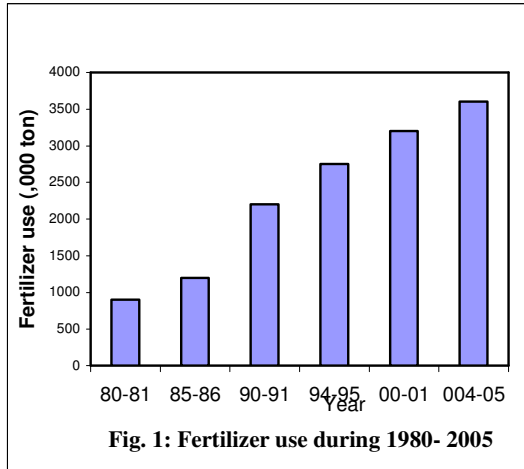


Fig. 1: Fertilizer use during 1980- 2005

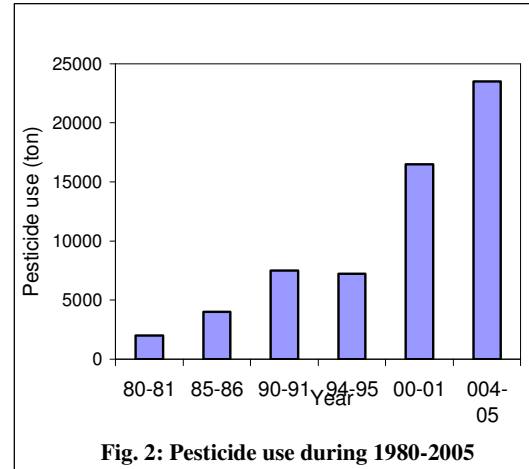


Fig. 2: Pesticide use during 1980-2005

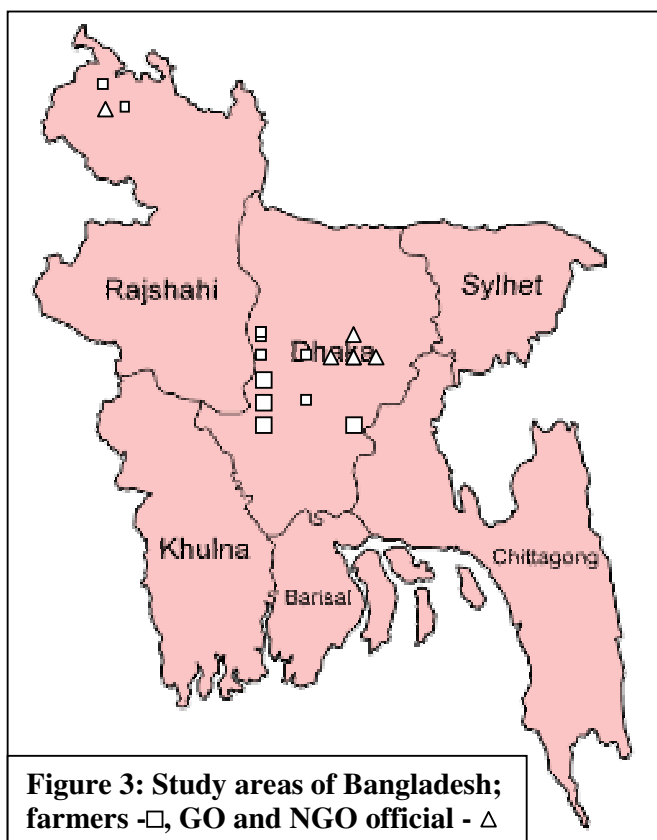
Government of Bangladesh started IPM (Integrated Pest Management) activities first in 1981 in rice crop. It was began to expand within some years and became a popular topic among people from all walks of life. This programme provided IPM training to field level workers to build the training capacity of the Department of Agricultural Extension (DAE) and introduced Farmers' Field School (FFS) approach for training of farmers. A number of persons from the non-government organizations (NGOs) were also given training in IPM. As a result of the success of this programme and on the basis of the need for IPM in Bangladesh, a number of IPM projects in rice and vegetables were in operation during 1995-2001 and executed by different government departments and NGOs. About 440,000 farmers were given season long and practical training in IPM during that period. With the joint effort of government and NGOs, Bangladesh became the 2nd country in Asia under organic management (177,700 hectare – 2% of total area) (IFOAM, 2006).

The term “organic” is defined by law, as opposed to the labels “natural” and “eco-friendly,” which may imply that some organic methods were used in the production of products, but do not guarantee complete adherence to organic practices as defined by law. As OF has recognized as sustainable farming method, this can perhaps give the best answer to provide sustainability in production. Farmers of Bangladesh are conscious about environment but they are illiterate, resource poor and highly dependent on purchased inputs. For getting higher prices, farmers need to follow standard to sell their products domestically as well as internationally. With the outcome of this research, it would be possible to find out how to convert land into organic and what are the practices to be done to introduce international standard. The goal of the study is to evaluate what types of standards Bangladeshi farmers are following as compared with European standard.

2. Material studied, area descriptions, methods, techniques:

Semi-structured qualitative Interviews have been followed to collect data from key informants. As organic farming is practicing by the contract farmers of DAE and some leading NGOs, so the target informants of the study are GO and NGO officials and their contract growers. For this reason, some of the govt. and NGO officials and farmers have been interviewed. This study is focusing only the farmers. Study was conducted in the areas of Bangladesh where farmers are intensively practicing ecofriendly/ organic farming. However, major portion of the interviewed farmers are from Tangail District. Most of the farmers of Kuragacha thana (comprised with some villages) of Tangail district are the contract organic growers of Proshika. Another thana in the same district is Delduar, where Nayakrishi farmers

have made it chemical free agricultural area. Kazi and Kazi tea farm and CDA farmers are practicing eco-friendly farming in northern part of the country (Dinajpur district). In total, 12 farmers and 2 private farms have been interviewed. Interviews were ranged from 45 minutes to 2 hours in length and audio-taped by using a digital voice recorder and fully transcribed for use in the analysis. Information gathered from key informant interviews/ case study/ focus group discussions which have been done at the time of field study have been analyzed with Grounded Theory (Glaser & Strauss, 1967) and compared with different international standards.



Grounded theory was developed by Barney Glaser and Anselm Strauss. It is a systematic method of qualitative research in the social sciences emphasizing generation of theory from data in the process of conducting research. It operates almost in a reverse fashion from traditional research. Rather than beginning by developing hypothesis, the first step is data collection, through a variety of methods. From the collected data, the key points are marked with a series of codes, which are extracted from the text. The codes are grouped into similar concepts in order to make them more workable. From these concepts, categories are formed, which are the basis for the creation of a theory, or a concrete conclusion.

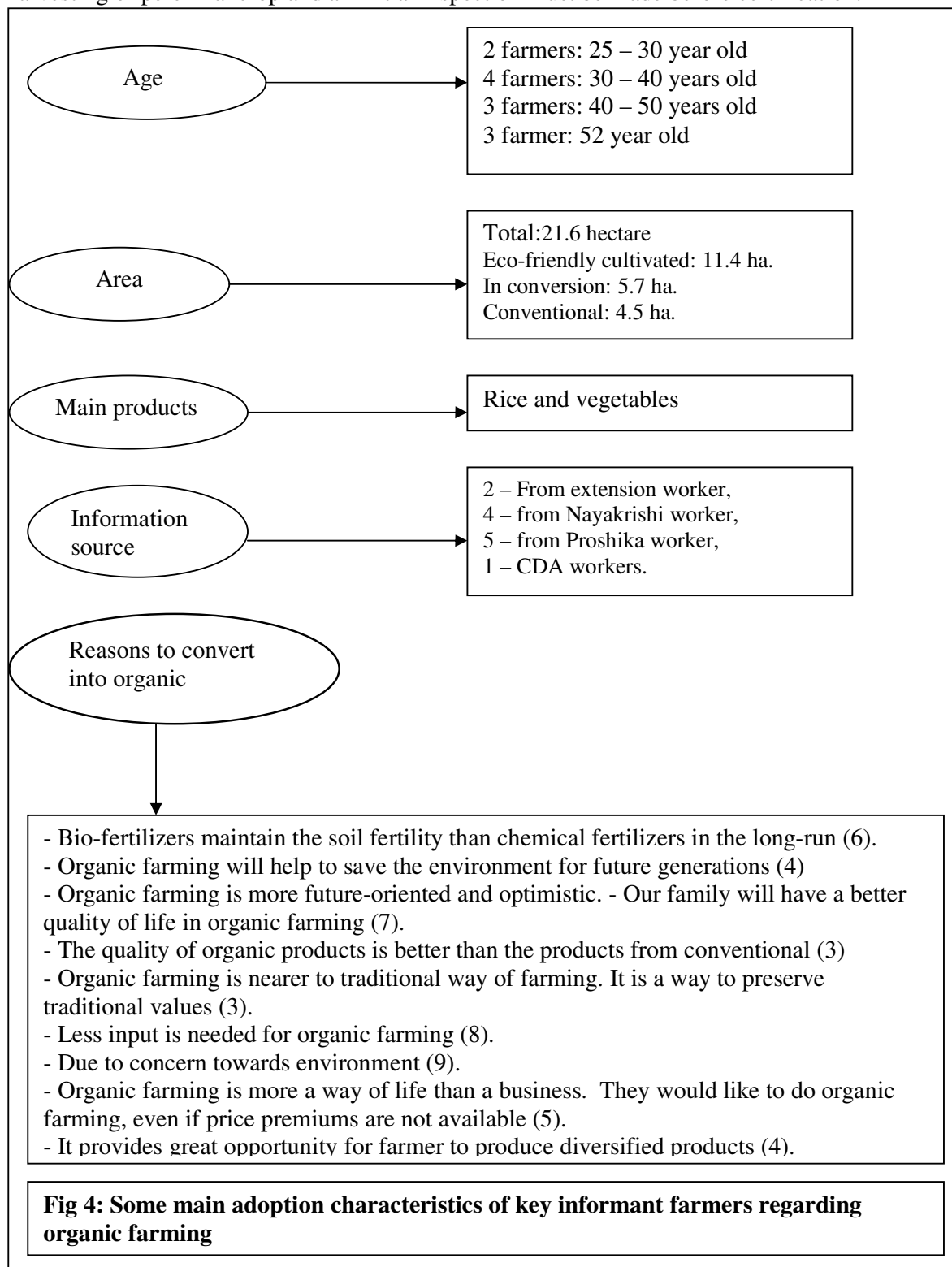
3. Results and Discussion:

Division of Standards of Organic Farming: Ministry of Commerce of India has prescribed “National Standards for Organic Production” under following six categories: (1) Conversion of land; (2) Crop production; (3) Animal husbandry; (4) Food processing and handling; (5) Labelling and (6) Storage and transport. In this study, only first three divisions have been studied.

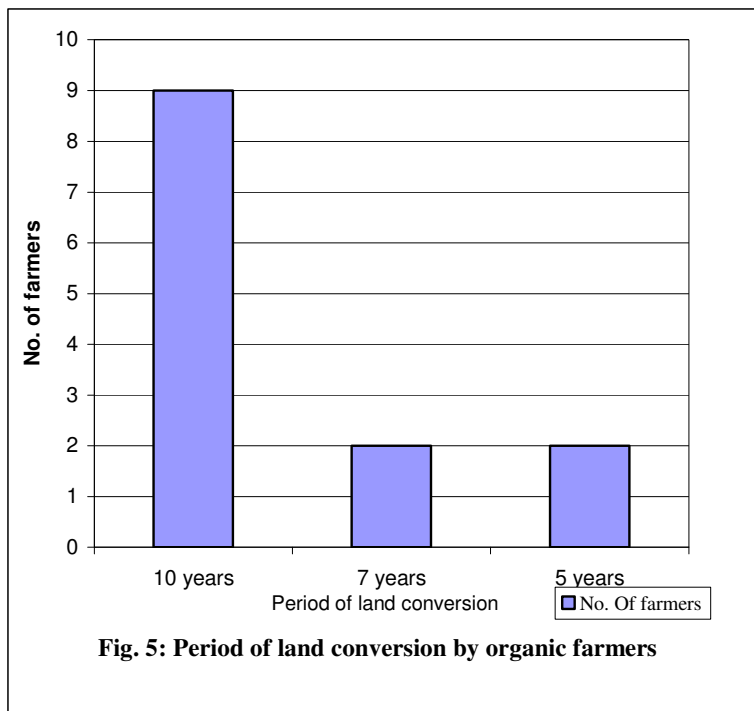
3.1 Conversion of land:

From management perspective, conversion period is a transitional process from a high-input management to a low external input management system. The conversion period should be long enough to improve soil fertility significantly and to re-establish the balance of the ecosystem. The whole farm including the livestock should be converted to the standards over a period of time. If the whole farm is not converted then the two must be separate and need Regular inspections during the conversion period (IFOAM, 2002).

Simultaneous productions of conventional or in conversion and/or organic which can not be distinguished clearly are not allowed. To ensure clear separation the certification programme shall inspect the whole production system. In case of European standard, the principles shall normally have been applied for at least 2 year before sowing of annual crops, or 3 years before harvesting of perennial crop and an initial inspection must be made before certification.



In Bangladesh, Proshika contact farmers and Nayakrishi farmers start to stop all kinds of synthetic chemicals when they start to convert organic farming. In Tangail district, those farmers converted their land into organic from 10 to 11 years ago. Farmers who have extension contact with DAE, they don't convert land but they are using less quantity of chemicals from 4 to 7 years.



BARI contact farmers in Ishwardi and Pabna district converted their fruits and vegetable land into organic from 7 years and at present, conversion is going on. In Dinajpur, Kazi and Kazi tea farm started their farming in Barren land and they took 5 years for conversion. At that time, they planted leguminous crops for soil fertility management and they make boundary with 5 feet canal as land cannot be contaminated by chemicals from other land.

3.2 Crop production issues: It is a combination of choice of crops and varieties, diversity in crop production, fertilization policy, pest, disease, growth and weed management, contamination control and soil and water conservation.

Choice of crops and varieties: According to IFOAM, Species and varieties cultivated should be selected on the basis of local soil, climatic conditions and tolerance to pests and diseases. EU regulations are similar to IFOAM standards. Organic seed and plant materials of appropriate varieties and quality shall be used. When these are not available, conventional materials may be used provided that they have not been treated with pesticides. Where untreated conventional seeds and plant materials are not available, chemically treated seed and plant material may be used

In Bangladesh, Nayakrishi strongly encourages farmers to keep seeds in their own household seed storage place and they have also community seed store. The technology to preserve the seeds is varied and highly sophisticated mainly in drying and maintaining moisture content. Proshika members produce different types of crop seeds. Some seeds are preserved by them and some are sold to the Seed Production Programme. If they don't get seed from these two sources, then they buy conventional treated or untreated seed on the basis of availability.

Kazi and Kazi tea strictly maintain good quality planting materials for tea production. BARI contact farmers are also started to avoid dependency on seed and they are preserving good quality seed for each crops. Farmers maintain good quality fruit from plants for seeds and dry the seeds. They don't use any chemicals to treat seeds.

Diversity in crop production: Organic growers must use a wide selection of practices to build soil fertility, suppress weeds, and control insects and diseases. These practices include cover cropping, green manuring, mulching, mechanical cultivation, companion planting, composting, traps, barriers, crop rotation, and timing planting to outwit pests. Whatever specific practices or inputs are employed, farmers must work to manage soil fertility, to prevent soil erosion, water pollution, and contamination of organic crops, and to control pests while not degrading soil.

After analyzing all the answers of the respondents, it is found that, Proshika, Nayakrishi, BARI farmers, Kazi and Kazi tea are practicing mulching, crop rotation with leguminous crops, mixed cropping, cover cropping, green manuring, composting, mechanical eradication of weeds, Traps and barriers for pest control. Government has given emphasis on pest management and farmers who have extension contact with DAE; they are practicing IPM practices very well.

Fertilization policy: According to European regulation, nutrient losses should be minimized. Nutrients should be used at appropriate times and places to optimize their effect. Restrictions may be based on amounts, location, timing, treatments, methods, or choice of inputs applied. Only materials prescribed by IFOAM can be applied. Mineral fertilizers shall only be used where long-term fertility needs together with green manures, rotations and nitrogen fixation by plants.

In Bangladesh, Proshika and BARI farmers apply cow dung, vermi compost, quick compost, fragmented juice as organic fertilizer. Sesbania, household waste, tree leaf are used as green fertilizers. Nayakrishi farmers also follow this. In addition, women of the households put all organic household and kitchen residuals in a pit to be rotted and cover it for making compost. CDA farmers use kitchen residuals, cow dung, and tree leaf. Cow dung from the organic dairy farm is used to produce compost in Kazi and Kazi tea farm. Other farmers' don't follow strictly the fertilization policy.

Manure: EU has limitations on the origin of manure. Not composted conventional manure may be used if it originates from 'extensive animal husbandry'. Composted conventional manure may be used unless it comes from 'factory farming'. In Bangladesh, Proshika and BARI farmers are not considering the origin of manure but Nayakrishi farmers are composting their manure in each and every household which are also originated from organic sources. If we want to compare them with international standard, Proshika and BARI farmers can be compared with US standard and Nayakrishi farmers with EU and Japan. 'Kazi and Kazi tea' and 'Dhamrai Dairy' - are also using compost from their farm animals which are raising in organic way.

Pest, disease, growth and weed management: Pests, diseases and weeds should be controlled by the following measures: choice of appropriate species and varieties; crop rotation; mechanical cultivation; protection of natural enemies of pests through provision of favourable habitat, such as hedges and nesting sites, ecological buffer zones which maintain the original vegetation to house pest predators; diversified ecosystems. These will vary between geographical locations. Additionally, only those substances mentioned in the positive list of EEC Regulation 2092/91 may be used as pesticides and plant protection products.

Bangladesh has achieved attainable success in IPM. Organic farmers are controlling pests, diseases and weeds by planting appropriate species and varieties; crop rotation; mechanical cultivation; protection of natural enemies of pests through provision of favourable habitat, such as hedges and nesting sites. Kazi and Kazi tea has establish ecological buffer zones through the plantation of medicinal plants. Additionally, Dhamrai dairy is raring poultry without any antibiotic. Extension workers of DAE suggest farmers to apply chemicals followed by four conditions as last resort – right insecticide, right time, right doses and right method.

Contamination control: According to EU regulation, HACCP plan should be followed. The operator should maintain barriers and buffer zones to avoid contamination. For synthetic structure coverings, mulches, insect netting and silage wrapping, polyethylene based products are permitted. These shall be removed from the soil after use and shall not be burned on the farm land. All equipment from conventional farming systems shall be thoroughly cleaned by contaminating materials before being used on organically managed areas. In Bangladesh, only Kazi tea farm is maintaining this standard which can also be compared as IFOAM standard.

3.3 Animal husbandry: Livestock production is the fundamental of organic agricultural production as it provides the necessary organic matter and nutrients for cultivated land and contributes towards soil improvement and the development of sustainable agriculture.

According to EU regulation, the certification programme shall ensure that the management of animal environment takes into account the behavioural needs of the animal and provides for:

- a. Sufficient free movement
- b. Sufficient fresh air and day light
- c. Protection against excessive sunlight, temperature, rain, wind etc.
- d. Enough lying and resting area
- e. Ample access to fresh water and feed and
- f. Proper environment for their biological and ethological needs

Poultry and rabbits should not be kept in cages. Land less animal husbandry system shall not be allowed. In Bangladesh, Nayakrishi farmers and Kazi tea farm are following IFOAM regulations.

After the above discussion, we may summarize that up to this level, Kazi tea and Nayakrishi farmers are try to maintain similar standards of EU than other farmers. Proshika and BARI farmers and Dhamrai dairy farm could reach to this point near future. If we consider Rogers' stages of adoption of Farmers like: **Awareness – Interest – Evaluation – Trial – Adoption** (ROGERS, 1983), then it might be said: Kazi tea farm and Nayakrishi farmers are in adoption stage. Proshika and BARI farmers and Dhamrai dairy farm are in trail stage. Farmers who have extension contact with govt. are in awareness stage.

4. Conclusion:

Success of organic farming is based on principles and pillars. In Bangladesh, NGOs are helping more than govt. to adopt organic farming in Bangladesh. Proshika and Nayakrishi farmers converted their land into organic from 12 to 15 years while BARI contact farmers from 7 years, Kazi tea – 5 years. DAE farmers are using less quantity of chemicals from 4 to 7 years. Proshika, Nayakrishi, BARI farmers, Kazi and Kazi tea don't apply any chemical fertilizer. They use cow dung, vermi compost, quick compost, fragmented juice as organic fertilizer. Sesbania, household waste, trees leaf are used as green fertilizers. Choice of appropriate varieties, mulching, crop rotation, mixed cropping, cover cropping, green

manuring, composting, mechanical eradication of weeds, traps and barriers for pest control – a package of techniques are practicing for soil fertility, disease, pest, weed and growth management.

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