FARMERS PERCEPTION TOWARDS APPLYING NATURAL MANURE IN NAGAPATTINAM DISTRICT – A CASE STUDY

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ABSTRACT
The main purpose of this study is to know the farmers perception towards applying natural manure in their farms. Manure is recognized as an excellent source of the plant and it also provide nutrients such as calcium, magnesium and sulphur to the soil, building soil fertility and quality. Natural manure is a product which originates from the environment naturally or is derived from products which originate from the environment whereas a mineral fertilizer (or chemical fertilizer) is made by chemical processes in a factory. The term natural fertilizer is normally reserved for products which are renewable. The scientific meaning of organic is a substance which contains carbon in the molecule. Traditionally, the preparation and use of natural fertilizers need times and expensive compare with chemical fertilizers. Due to this most of the farmers are using chemical fertilizer. But the inappropriate use of chemical fertilizers severely damages the soil for several decades. Thus, conventional farmers are now realizing that the microbial activity, usually enhanced by natural fertilizers and reduced by chemical fertilizers, is of paramount importance in crop protection. There are many natural manure are used in agricultural sector example animal manures, stubble and crop trash, compost trees, guano, bio char, green manures, food process waste, worm ‘juice’ or worm castings. Hence, this study aims to know the farmers' perception towards the using of natural manure in the study area. A descriptive research method was used. Out of 11 blocks in Nagapattinam district, Semparkoil and Kuthalam blocks were selected purposively. To achieve the objectives of the study there are 100 farmers were used as sample of the study. Therefore each 50 farmers sample blocks were selected by using convenient sampling methods. For the study nature only primary data were used. The interview schedule i.e., both open ended and closed ended questions were used to collect primary data. The study results shows that majority of the farmers agreed that, using natural manure provides many advantages than chemical manure. At the same time most of the sample farmers are not ready to use natural manure immediately to their farms. Due to that in the study area very few types of natural manures are available and used i.e., animal manure, molasses, compost trees, green manure and food process waste. Hence, the study concludes that most of the farmers have a positive opinion about to apply the natural manures but most of the sample farmers are not ready use because, lack of availability of natural manure, nutrients are released slower, need large quantity of manure, difficult to prepare and store, low output for beginning period, natural calamities, government policy for producing organic products, no quick relief (pesticides) and etc.

Keywords: Natural manure, Farmers perception, Farmers Opinion and Organic Fertilizer.

INTRODUCTION
Agriculture is the backbone of Indian economy. It is the largest and most vital sector of Indian Economy. More than 67 percent of the Indian population directly depends upon the agricultural sector and almost all the rural population (about 74 percent) serves on this sector in one way or the other. Sustainable agriculture is necessary to attain the goal of sustainable development (Suresh Patidar & Himanshu Patida, 2015). Therefore sustainable agriculture laid great emphasis on maintaining an agriculture growth rate, which can meet the demand for food of all living things without draining the basic resources such using natural manure instead of chemical fertilizers. Manure is recognized as an excellent source of the plant nutrients nitrogen (N), phosphorus (P) and potassium (K). In addition, manure returns organic matter and other nutrients such as calcium, magnesium and sulfur to the soil, building soil fertility and quality. Natural manure is a product which originates from the environment naturally or is derived from products which originate from the environment whereas a mineral fertilizer (or chemical fertilizer) is made by chemical processes in a factory. The term natural fertilizer is normally reserved for products which are renewable. The scientific meaning of organic is a substance which contains carbon in the molecule. There are many natural manure are used in agricultural sector example animal manures, stubble and crop trash, abattoir and butchers waste, fish hydrolysate, molasses, liquid seaweed, humate and fulvates, compost and compost trees, guano, biochar, green manures, food process waste, worm ‘juice’ or worm castings. Therefore, this preliminary study is based on the perception of farmers towards applying natural manure in the study area in relation to adaptability, environmental, production, cost and marketing aspects.
STATEMENT OF THE PROBLEMS

Traditionally preparing and using natural fertilizers have been more expensive than chemical fertilizers. Due to this most of the farmers are using chemical fertiliser in India. But the inappropriate use of chemical fertilizers severely damages the soil for several decades. Furthermore, conventional farmers are now realizing that the microbial activity, usually enhanced by natural fertilizers and reduced by chemical fertilizers, is of paramount importance in crop protection. Common nitrogenous chemical fertilizers, particularly urea undergo a series of reactions in the soil which lead to the emission of the greenhouse gases, carbon dioxide and nitrous oxide. Nitrous oxide absorbs radiation and is generally thought to be about 300 times more potent than carbon dioxide as a greenhouse gas. Much of the granular urea applied never gets into the plant and is decomposed to carbon dioxide and ammonia. Some of the ammonia is released into the atmosphere and some is oxidized to nitrous oxide which in turn is lost to the atmosphere. Each tonne of urea that is wasted leads to the production of greenhouse gases with the same effect as several tonnes of carbon dioxide. This represents a significant economic loss and a significant contribution to greenhouse gas emissions. Adverse effects of modern agricultural practices not only on the farm but also on the health of all living things and thus on the environment have been well documented all over the world. Application of technology, particularly in terms of the use of chemical fertilizers and pesticides all around us has persuaded people to think aloud. Their negative effects on the environment are manifested through soil erosion, water shortages, salination, soil contamination, genetic erosion, etc. The nutritional value was an important factor that influences consumers’ preferences in purchasing chemical free agricultural products, followed by desire, freshness, health effect and taste (Hadriman, 2004). Hence it is clear that knowledge is an important factor in using natural manure in the study area. Thus, it is important to know the perception of the farmers towards applying natural manure in the study area was analysed.

OBJECTIVE OF THE STUDY

The purpose of this study was to investigate the farmers’ perception about using natural manure in Nagapattinam District.

METHODOLOGY

Nagapattinam is predominantly agricultural based district and more than 80 percent of the people directly and indirectly involving the agricultural activities, especially 67% of the workers were directly involved the agricultural activities (Nagapattinam district profile report, 2017). Where as, very limited number of farmers are using natural manure for cultivation and also most of the farmers using only chemical manure for their cultivation in Nagapattinam district. The survey method was used to collect the data from sample farmers. Out of 11 blocks in Nagapattinam district only two blocks namely, Sempanarcoil block and Kuthalam block were selected purposively. The basis of the selection was availability of large number of farmers, accessibility, varieties of agricultural plant, etc in the sample blocks. Due to the time and unknown population in the study area each 50 samples i.e., total of 100 farmers was decided as the sample of the study. The sample farmers were selected using simple random sampling techniques. Data were collected through direct interviewing method using pre-tested structured interview schedule during April to May, 2018. The interview schedule consisted of two parts viz., Demographic profile of the farmers and their perception towards using natural manure.

RESULTS & DISCUSSION

I. Demographic variables

Generally the age, gender and education are the most important demographic factors to contribute the knowledge, attitude and practices of farmers, particularly using natural manure is mainly depends on the age and education of the farmers. The following findings were identified from the analysis.

1. Majority of the sample farmers under the age group of 30-50 and the farmers responded that, they used partially natural manure and have a plan to use fully natural manure to their agricultural land, which constitute 78.25 percentages. This indicates that the middle age farmers are more interested to use natural manure rather than upper age and low age group farmers.

2. The gender wise classifications of the respondent revealed that majority of the male respondent opined that they have used basic natural manure and have a plan to use only natural manure to their agricultural lands which constitute 68.06 percentages.

3. The education wise classification of the respondent shows that majority of the degree and above level farmers have partially used natural manure and they ready to use fully natural manure to their lands which constitute 61.11 percentage. The reason for not using only natural manure are it needs
adequate knowledge such as how to improve and prepare the natural manure, how to make natural pesticides and herbicides, lack of awareness, lack of availability of raw materials and etc.

**FARMERS’ PERCEPTION TOWARDS USING NATURAL MANURE**

The perception of sample farmers was measured using five points likert’s scaling techniques i.e., highly essential, essential, neither/nor, not essential and highly not essential. The sample respondent were asked five points rating scale statements in four aspects i.e., environmental aspects, productivity aspects, cost aspect and marketing aspect. To analyse the perception statements, the sample farmers response about applying natural manures were further grouped into three i.e., essential, neither/nor and not essential and the results of sample farmers responses is as follows.

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<tr>
<th>Table 1</th>
<th>Farmers perception towards using Natural Manure</th>
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<td>S.N</td>
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<tr>
<td>1.</td>
<td>Environmental Aspects</td>
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<td>2.</td>
<td>Production Aspects</td>
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<td>3.</td>
<td>Cost of Aspects</td>
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<td>Marketing Aspects</td>
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Source: Compiled from primary data

**Environmental Aspects**

1. Most of the sample farmers were responded that they agreed that applying natural manure is highly essential in the farm land and to applying the organic manure will improve the potential of the land i.e., improve the soil quality, long life, etc.
2. All the respondents have the positive attitudes (i.e. highly essential) towards applying natural manure such as it increase the soil fertility and protect environment. And also most of the famers realised that applying natural manures need less cost for production and it protects the environment.

**Production and cost Aspects**

1. The sample farmers’ perception towards production and cost aspects shows that most of the respondent opined that the natural manure needs less cost rather than chemical fertiliser to cultivate paddy and other agricultural products.
2. Majority of the respondents have agreed that applying natural manures control the pests and weed in the farm land particularly paddy cultivation land.
3. Majority of the farmers opined that using natural manure provides less quantity of output for first three years than conventional farming.

**Marketing Aspects**

1. The farmers perception on marketing aspect clearly indicates that majority of the farmers opined that they were not satisfied to market their organic product due to, lack market availability, lack of government support and very poor awareness of people about organic product and its values. Thus the farmers feel that applying natural manure provides quality as well chemical free products to consumers not the producers.

**CONCLUSION & RECOMMENDATIONS**

Based on the findings the study concludes that most of the farmers had a favourable attitude towards applying natural manures about environmental aspects, production and cost aspects except marketing aspects. Numerous farmers have followed good practices such as proper soil management, effectively controlling pests, crapping pattern and etc. Even though, a number of farmers have faced difficulties to applying natural manure in the study area. Therefore based on the findings the following recommendations may be put forward.

1. During the discussion the most of the farmers responded that they did not get any valuable support from government for preparation of natural manures and marketing of their organic products. Hence, the government has to play important role to emerge growth of the organic farming and also the Mass media and NGOs need to play a vital role in this regard.
2. The farmers should be given skill-based training on the principles of natural farming and marketing concept.
3. There is need to motivate the farmers to use natural manure for higher profit by using proper crop management and marketing because majority of the farmers had positive attitude towards applying natural manures.
4. Extension machineries may also be geared up, to supply quality inputs required for preparation of natural manure.
5. Finally, there is immense need for improving the awareness about to applying natural manures in particular the government should conduct extensional programs for giving training and promotional activities to reduce the cost and environmental pollution.

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