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Knowledge of respondents about organic farming in Sirsa district

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Abstract

Organic farming is a method of livestock and agriculture production without use of chemically based inputs like fertilizers, pesticides and genetically modified organisms etc. The study was conducted to assess the knowledge of respondents about organic farming. The study was conducted in two villages of block Nathusari Chopta in Sirsa district of Haryana. Sixty respondents (30 males and 30 females) were selected from each village. The data were collected with the help of developed inventory. The results showed that majority of respondents had overall low knowledge about organic farming.

Keywords: Organic farming, knowledge, principles, practices, management

Introduction

Organic farming is a way of livestock and agriculture production that involves no use of synthetic fertilizers, pesticides, genetically modified organisms, antibiotics and growth hormones which are not covered under organic standards (Deshmukh, 2010) [2]. In 1939, Lord North Bourne was used the term “organic farming” (Paull, 2014) [5]. International Federation of Organic Agriculture Movements (IFOAM, 2005) [3] explained that organic farming is a production system that improves the soil health, environment and people. It relies on the eco-friendly mechanism, biodiversity and cycle adapted to local conditions rather than the use of inputs with adverse effect. Organic agriculture involves traditional, new inventions and science to benefits and shared environment and promote trustworthy relationships and a superior quality of life for all involved.

Objectives

1. To study the knowledge of respondents about organic farming

Methodology

The study was conducted in Sirsa district of Haryana state selected purposively. One block, Nathusari Chopta was selected randomly. From block, two villages were selected randomly. Sixty respondents (30 males and 30 females) were selected from each village through random selection and total 120 respondents were taken for the study. A well-structured inventory was developed and the data were collected personally by the researcher. The collected data was quantified and interpreted by using statistical tools such as frequency and percentage.

Results

General knowledge of respondents about organic farming

Data presented in table 1 showed the knowledge of respondents about organic farming. Majority of the respondents (55.0%) had knowledge that use of chemical fertilizers followed by chemical pesticides (47.5%) and hormones feed additives (38.3%) respectively should be avoided in organic farming.

Regarding other aspect that organic farming relies upon of organic farming, respondents had knowledge about crop rotation (55.8%), followed by biological system of nutrient mobilization (45.0%), use of animal manure (46.6%), off-farm organic waste use (40.8%), plant protection (33.3%), mineral grade rock additives (28.3%), and crop residues (10.8%) respectively. Knowledge about balance pest and beneficial organism population for basic system of farming was reported by 45.0 percent respondents followed by maintain and replenish fertility of the soil (35.8%) and mimics natural ecosystem (20.0%) respectively.

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Approximately fifty six percent respondents had knowledge about social and economically sound production of food, fibre and timber etc followed by adherence to globally accepted principles within local socio-economic, geoclimatical and

cultural context. (50.8%), increases diseases resistant quality products (44.2%), increases agriculture yield (42.5%), and organic agriculture system promotes environment (22.5%) respectively.

Table 1: General knowledge of respondents about organic farming

S. No	Knowledge statements	Total F (%) (n = 120)
1	Avoid chemo-synthetic inputs	
	Fertilizers	66 (55.0)
	Pesticides	57 (47.5)
	Hormones feed additives	46 (38.3)
2	It relies upon	
	Crop rotation	67 (55.8)
	Crop residues	13 (10.8)
	Animal manure	56 (46.6)
	Off-farm organic waste	49 (40.8)
	Mineral grade rock additives	34 (28.3)
	Biological system of nutrient mobilization	42 (35.0)
	Plant protection	40 (33.3)
3	Based on farming system	
	Mimics natural ecosystem	24 (20.0)
	Balance pest and beneficial organism population	54 (45.0)
	Maintain and replenish fertility of the soil	43 (35.8)
4	Promotes environment	27 (22.5)
5	Socio-economic sound production of food, fibre and timber etc.	68 (56.6)
6	Increases agriculture yield	51 (42.5)
7	Increases diseases resistant quality product	53 (44.2)
8	Adheres to globally accepted principles, which are implemented within local socio-economic, geoclimatical and cultural context	61 (50.8)

Principles of organic farming

Data regarding principles of organic farming presented in table 2 clearly revealed that 38.3 percent respondents had knowledge about principle of health followed by fairness (35.0%), ecology (28.3%) and care (24.2%) respectively.

Nielsen (2005) reported that the main reasons for purchasing organic foods were 'healthier for me' (51.0%), 'healthier for my children' (17.0%), 'better for environment' (15.0%), 'kinder to animals' (7.0%) and others (10.0%).

Table 2: Knowledge of respondent about principles of organic farming

S. No	Principles	Total F (%) (n = 120)
1	Health	46 (38.3)
2	Ecology	34 (28.3)
3	Fairness	42 (35.0)
4	Care	29 (24.2)

Techniques of organic farming

Techniques of organic farming in table 3 revealed that 40.8 percentage respondents had knowledge regarding soil management followed by livestock (52.5%), crop diversity

(36.6%), controlling other organisms (37.5%), no use of genetic modification (29.2%) and weed management (24.2%) respectively.

Table 3: Knowledge of respondents about techniques of organic farming

S. No	Techniques	Total F (%) (n = 120)
1	Crop diversity	44 (36.6)
2	Soil management	49 (40.8)
3	Weed management	29 (24.2)
4	Controlling other harmful organisms	45 (37.5)
5	Livestock	63 (52.5)
6	No use of genetic modification	35 (29.2)

Practices adopted in organic farming

Practices such as soil management, insect-pest management, weed management and crop diseases management were covered under this topic.

Soil Management

Table 4 pinpointed that 49.2 percent respondents had knowledge about application of organic material for soil

management followed by tillage and cultivation practices with no impact on soil structure (39.2%) and manage crop fertility nutrients using crop rotation and cover crops (30.0%). Knowledge for maintaining and improving soil organic matter to avoid pathogenic organisms (38.3%), prohibited metals (25.8%), heavy metals (22.5%), soil, water and crop contamination (21.7%) respectively were recorded.

Insect-pest management

The data presented in table-4 indicated that majority of the respondents (46.6%) had knowledge about use of light trap and feiraman trap followed by beneficial organism releases (40.8%), habitat management (34.1%), sanitation (30.8%), crop rotation (26.6%), use of trap crops (25.0%), use of organic and non-toxic synthetic pesticides such as soap (24.1%) and crop diversification (13.3%) respectively Ramesh *et al.* (2005) reported that Insect-pests and diseases

management were done by methods generally improving soil health to resist soil pathogens and promote plant growth, crop rotation, encouraging natural biological agents for control of diseases, insects and weeds; using physical barriers for protection from insects, birds and animals, modifying habitat to encourage pollinators and natural enemies of pests, and using semi-chemicals such as pheromone attractants and trap pests.

Table 4: Knowledge of respondents about practices adopted in organic farming

S. No	Practices	Total F (%) (n = 120)
1	Soil Management	
i	Tillage and cultivation practices with no impact on soil structure	47 (39.2)
ii	Manage crop fertility nutrients using crop rotation and cover crops	36 (30.0)
iii	Application of organic material	59 (49.2)
Iv	Maintain and improves soil organic matter to avoid	
	Crop contamination	26 (21.7)
	Soil and water contamination	26 (21.7)
	Pathogenic organisms	46 (38.3)
	Heavy metals	27 (22.5)
	Prohibited metals	31 (25.8)
2	Insect-pest management	
i	Crop rotation	32 (26.6)
ii	Crop diversification	16 (13.3)
iii	Habitat management	41 (34.1)
iv	Beneficial organism releases	49 (40.8)
v	Use of light trap and feiraman trap	56 (46.6)
vi	Use of trap crops	30 (25.0)
vii	Sanitation	37 (30.8)
viii	Use of organic and non-toxic synthetic pesticides such as soap	29 (24.1)
3	Weed management	
i	Crop rotation	39 (32.5)
ii	Intercropping	12 (10.0)
iii	Mulching	39 (32.5)
iv	Tillage	45 (37.5)
v	Cultivation practices	56 (46.6)
vi	Water management	23 (19.1)
vii	Manual weeding	44 (36.6)
4	Crop diseases management	
i	By improving organic matter and biological activities	28 (23.3)
ii	Crop rotation	34 (28.3)
iii	Sanitation	24 (20.0)
iv	Pruning	41 (34.1)
v	Selection of diseases resistant varieties	33 (27.5)
vi	Use of synthetic fungicides such as copper sulphate (permitted by USDA National organic Programme Standards)	54 (45.0)

Weed Management

It was apparent from the table- 4 that 46.6 percent respondents had knowledge about cultivation practices for weed management in organic farming followed by tillage (37.5%), manual weeding (36.6%), mulching and crop rotation (32.5%), water management (19.1%) and intercropping (10.0%) respectively.

Barberi (2002) [1] stated that the successful way of weed control was manual or direct weeding. To reduce the weed emergence, preventive and cultural management were applied which included choice of crop sequence, tillage, smother/cover crops and improve crop competitive ability.

Crop diseases management

Data presented in table 4 revealed that 45.0 percent respondents had knowledge about the use of synthetic fungicides such as copper sulphate (permitted by USDA National Organic Programme Standards) followed by pruning (34.1%), crop rotation (28.3%), selection of diseases resistant

varieties (27.5%), improving organic matter and biological activities (23.3%). respectively. Rest of the respondents had knowledge on crop diseases management by sanitation (20.0%).

Watson *et al.* (2002) [7] reported that crop rotation maintain and improved the soil fertility in organic system and resisted pests and diseases and allowed cultural methods of weed control. To fulfill nutrients need of crops legumes to add nitrogen and some acceptable supplementary nutrients were used. Manures and crop residues recycle the nutrients. Soil organic matter management improved the soil structure, biological activity, health and production of crops.

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