MARKET POTENTIAL OF ORGANIC VEGETABLES

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Abstract: The study on "Market potential of organic vegetables" was undertaken to analyze the attitude of farmers towards the cultivation of organic vegetables who are now engaged in organic as well as conventional vegetable cultivation. The awareness level of consumers about organic vegetables, consumer willingness to shift towards and to pay extra for organic products were also studied. The study was conducted in Nadathara, Pananchery and Puthoor panchayaths of Thrissur district, Kerala. Three groups of respondents such as farmers who were adopting organic farming, conventional farming practices in vegetable cultivation and consumers of vegetables were selected randomly with a sample size of thirty in each group. More than eighty per cent of the conventional farmers had favourable attitude towards organic farming practices and ninety per cent of the conventional farmers believed that use of organic farming practices was essential for better quality of vegetables. Over the years nearly cent per cent of the conventional farmers reduced the use of chemical inputs and increased the application of bio inputs. It was concluded that there was a great demand for organic vegetables in the market. The consumers were willing to pay even higher prices for organically produced vegetables. Hence farmers can be motivated to produce organic vegetables for higher profit, better health of the consumers and environment. Simultaneously they should also be educated on the procedures of organic cultivation, certification, standards and labeling. Extension machineries may also be geared up, to supply quality organic inputs required for organic vegetable cultivation.

Keywords: Market potential, Organic vegetables, Farmers and Consumers.

Introduction: Realizing the adverse effects of conventional farming, organic farming is gaining momentum in India. The general public started looking for organic produce. Conventional farmers are aiming for higher productivity and profitability. There exists a wide gap between demand and production of organic produce. At present, majority of the commercial farmers are accustomed and are highly adapted to high productivity and profitability obtained from the conventional cultivation of crops. The apprehension about low productivity and profitability in organic farming, these farmers were hesitant to go back to organic farming. The best strategy to overcome this problem is to identify the market opportunities for organic produce and convince the farmers regarding the recent change in consumer behavioral pattern towards the organic products. Therefore a systematic study was conducted with the objectives of analyzing the attitude of farmers towards the cultivation of organic vegetables who are now engaged in organic as well as conventional vegetable cultivation, understanding the awareness level of consumers about organic vegetables and also to understand consumer willingness to purchase and pay extra for organic products.

Methodology: Nadathara, Pananchery and Puthoor panchayaths of Thrissur district, central Kerala were selected purposively for conducting the study as these panchayaths were having maximum area under vegetable cultivation in Thrissur district. Three groups of respondents such as farmers who were adopting organic farming, conventional farming practices in vegetable cultivation and consumers of vegetables were selected randomly with a sample size of thirty in each group. To measure the degree of the farmer's like or dislike towards organic farming practices, an attitude scale was constructed by following the method of Likert summated ratings suggested by Edwards (1969). All possible statements which discriminated the positive and negative attitudes of the farmers towards organic vegetable cultivation were collected and included in the scale. The attitude scale developed by Jaganathan (2004) was adopted and modified according to the requirements of the study. Primary data was collected using a pre-tested questionnaire.

Findings

Organic Farmers: The table No.1 shows the attitude of organic farmers towards organic vegetable cultivation. Cent per cent of the respondent farmers strongly agreed to the statement 'Organic farming improves fertility status of the soil'. Nearly three fourth of the farmers agreed to the statement 'It is worthful to adopt organic farming practices even by borrowing money' (73.33per cent) and 13.33 per cent of the farmers strongly agreed to it. Most of the farmers (93.33per cent) strongly disagreed with the statement 'Use of organic farming practices is only a waste of money and time'. Majority of the farmers (93.33per cent) disagreed to the statement 'Adoption of organic farming practices is practically not feasible'. More than three- fourth of the farmers (86.67per cent) agreed to the statement 'It is possible

to get good yield by adopting organic farming practices'. For the statement 'It is not profitable to adopt organic farming practices in vegetable cultivation' 86.67 per cent of the farmers disagreed. Most of the farmers (86.67 per cent) agreed for the statement 'Adoption of organic farming practices is highly risky'. For both the statements, 'use of organic farming practices is essential for better quality of vegetables' and 'It is possible to solve our environmental problems through organic farming' 96.67per cent of farmers strongly agreed.

Table No.1 Attitude of organic farmers towards organic vegetable cultivation (n=30)

Sl. no	Statements	SA (%)	A (%)	UD (%)	DA (%)	SDA (%)
1	Organic farming improves fertility status of the soil	100	0	0	0	0
2	It is worthful to adopt organic farming practices even by borrowing money.	13.33	73.3.3	13.33	0	0
3	Use of organic farming practices is only a waste of money and time.	0	0	0	6.67	93.33
4	The way our forefathers cultivated seems to be good	96.67	3.33	0	0	0
5	Adoption of organic farming practices is practically not feasible	0	0	3.33	93.33	3.33
6	It is possible to get good yield by adopting organic farming practices.	13.33	86.67	0	0	0
7	It is not profitable to adopt organic farming practices in vegetable cultivation	3.33	0	0	86.67	10
8	Organic farming practices should be practiced by all farmers	13.33	80	6.67	0	0
9	Cultivation of organic vegetables has brought a new light in the field of agriculture	6.67	86.67	3.33	0	3.33
10	Adoption of organic farming practices is highly risky.	3.33	86.67	0	0	10
11	It is better to give more importance to other occupation than following organic farming practices	0	86.67	0	3.33	10
12	Use of organic farming practices is essential for better quality of vegetables	96.67	3.33	0	0	0
13	It is possible to solve our environmental problems through organic farming	96.67	3.33	0	0	0

SA- Strongly Agree, A-Agree, UD-Undecided, DA-Disagree and SDA-Strongly Disagree.

Farmers' attitude towards organic vegetable cultivation was studied by giving scores to the responses, mean score was 53.46, Standard Deviation was 2.62 and the findings were given in the table no.2. From the table it is clear that majority of the organic farmers (86.67 per cent) had a favourable attitude towards organic farming practices followed by more favourable (10 per cent) and less favourable (3.33 per cent) attitude. This finding was in concurrence with the findings of Jaganathan (2004) and Assis et al (2011) who reported that majority of the vegetable growing farmers had a favourable attitude towards organic farming practices.

Table No.2 Distribution of organic farmers according to their attitude towards organic vegetable cultivation(n=30)

Farmer's Attitude	Percentage
More Favourable (>Mean+SD)	10.00
Favourable (Between Mean+SD and Mean-SD)	86.67
Less Favourable (<Mean-SD)	3.33

Mean= 53.47; SD=2.62

The awareness and knowledge about organic farming practices might have led them to develop an interest towards organic farming practices. The results born out of the intensive research in Kerala Agricultural University and disseminated in scientist's meet, research council and extension council meetings also proved the worthiness of organic farming practices.

Table No.3 Mode of sale of farm produce by organic farmers (n=30)			
Mode	Always (%)	Mostly (%)	Rarely (%)
Direct Selling to consumers	6.67	3.33	10
Through commission agents	16.67	3.33	0
In wholesale market	3.33	10	0
In retail shop	3.33	3.33	10
Through Farmers Market	60	0	0
Others	0	0	3.33

According to the Table no.3 about 6oper cent of the farmers sold their produce always through farmers market and only 6.67 per cent sold directly to consumers. Less number of farmers (16.67 per cent) preferred to sell their produce always through commission agents.

Conventional Farmers: From the Table no.4, we realize that 73.33 per cent of the farmers were interested in practicing organic farming and 26.67 per cent of the farmers were not interested in practicing organic farming. Because of the long waiting period and reluctance to change from the way of their cultivation.

Table No.4 Interest in practicing organic farming (n=30)		
Particulars	Yes	No
No.of farmers	22	8
Percentage	73.33	26.67

They strongly believed that they would not get high yield only by using organic fertilizers.

Table No.5 Application of chemical inputs over years (n=30)		
Particulars	Increased	Reduced
No. of farmers	1	29
Percentage	3.33	96.67

While considering the data in the Table no.5, 96.67per cent of the conventional farmers reduced the application of chemical inputs and increased organic inputs over years. Because they realized the adverse effects caused by the application of excessive use of chemical inputs.

From the Table no. 6 reveals that majority of the conventional farmers (86.67 per cent) strongly believed that organic farming improved the fertility of the soil and which was essential for better quality of vegetables. In the meantime, 26.67 per cent of farmers felt that adoption of organic farming practices was a waste of money and time, even though 43.33per cent of the farmers strongly disagreed with the statement.

Majority of the farmers (63.33 per cent) agreed with the statement that adoption of organic farming practices was highly risky and they added that vegetable cultivation itself was risky job whether it was organic or not. Most of the conventional farmers(83.33 per cent) strongly agreed that for better quality of vegetables, organic farming practices were essential. More than three- fourth of farmers(76.67 per cent) agreed that environmental problems could be solved through organic farming practices.

Table No.6 Attitude of Conventional farmers towards organic vegetable cultivation (n=30)						
Sl. No	Statements	SA (%)	A (%)	UD (%)	DA (%)	SDA (%)
1	Organic farming improves fertility status of the soil	86.67	10	3.33	0	0
2	Use of organic farming practices is only a waste of money and time.	10	26.67	13.33	6.67	43.33
3	The way our forefathers cultivated seems to be good	70	13.33	16.67	0	0
4	Adoption of organic farming practices is practically not feasible	6.67	16.67	43.33	20	13.33
5	One need not bother about undesirable consequences when chemicals are used in vegetable cultivation	0	0	6.67	40	53.33
6	It is not profitable to adopt organic farming practices in vegetable cultivation	10	16.67	23.33	43.33	6.67
7	Adoption of organic farming practices is highly risky and hence it is not advisable to follow the same	26.67	63.33	6.67	3.33	0

8	It is better to give more importance to other occupation than following organic farming practices	10	0	90	0	0
9	Use of organic farming practices is essential for better quality of vegetables	83.33	13.33	3.33	0	0
10	It is not correct to support organic farming practices	6.67	3.33	10	53.33	26.67
11	It is possible to solve our environmental problems through organic farming	20	76.67	3.33	0	0
12	Organic farming practices have no advantages over conventional practices	0	16.67	73.33	10	0

SA- Strongly Agree, A-Agree, UD-Undecided, DA-Disagree and SDA-Strongly Disagree.

Farmers' attitude towards organic vegetable cultivation was studied by assigning scores to the responses and the findings are given in the Table no.7. It is clear that majority of the conventional farmers (80 per cent) had a favourable attitude towards organic vegetable cultivation, 6.67 per cent of the farmers had more favourable attitude and 13.33per cent had less favourable attitude towards organic vegetable cultivation.

Table No.7 Distribution of conventional farmers according to their attitude towards organic vegetable cultivation (n=30)

Farmer's Attitude	Percentage
More Favourable (>Mean+SD)	6.67
Favourable (Between Mean+SD and Mean-SD)	80
Less Favourable (<Mean-SD)	13.33

Mean= 43.93; SD=4.54 From the Table no.8, 70 per cent of the farmers sell their produce through commission agents and only 13.33 per cent of the farmers sell through farmers' market. This is in contradiction to the mode of sale of farm produce by organic farmers. The reason might be that organic farmers were organized by Vegetable and Fruit Promotion Council of Keralam (VFPCK) and hence they used to sell their produce in farmers' market.

Table No.8 Mode of sale of farm produce by conventional farmers (n=30)

Mode	Always (%)	Mostly (%)	Rarely (%)
Direct selling to consumers	6.67	0	0
Through commission agents	70.00	3.33	3.33
In wholesale market	3.33	3.33	3.33
In retail shop	0	0	0
Through Farmers Market	13.33	3.33	0

Consumers:

Table No.9 Criteria for purchasing vegetables adopted by consumers (n=30)

Criteria	Price	Quality	Quantity	Freshness	Cleanliness
Mean score	67	145	33	106	99
Rank	4	1	5	2	3
Percentage (*)	44.67	96.67	22.00	70.67	66.00

(*) Multiple responses

Table no.9 shows that most of the consumers (96.67 per cent) gave first preference to the quality of the vegetables, 2nd rank to freshness of vegetables, 3rd rank to cleanliness of vegetables and they rank price and quantity 4th and 5th respectively out of the five criteria.

Table No.10 Nature of vegetable consumption by consumers(n=30)

Type of vegetables consumed	Percentage
Vegetables produced in the conventional method	86.67
Organic Vegetables	0.00
Both	13.33

From the Table no.10, it is interpreted that, there was no organic vegetable consumers, but 13.33 per cent people consumed both organic and inorganic vegetables. Most of the vegetable consumers continued to buy vegetables produced through conventional methods. Since conventionally produced vegetables were commonly available in the market and no distinction was made in the markets between organic vegetables and the vegetables produced through conventional and organic practices.

Table no.11 shows the awareness level of consumers on the harmful effects of vegetables produced through conventional methods and advantages of consuming organic vegetables. Most of the respondents were aware of the harmful effects of vegetables produced through conventional methods (96.67 per cent) and aware of the advantages of organic vegetables (93.33per cent).

Table No.11 Awareness level of consumers towards the nature of vegetables (n=30)

Consumers	Harmful effects of inorganic vegetables produced through conventional practices		Advantages of organic vegetables	
Response	Yes	No	Yes	No
No.of consumers	29	1	28	2
Percentage	96.67	3.33	93.33	6.67

Since organic vegetables were not commonly available in the market, they could not get the desired quality of vegetables.

Table No.12 Interest in buying organic vegetables if it is sufficiently available.

Interest	Yes	No
No. of consumers	30	0
Percentage	100	0

Table no.12 gives that there is great demand for organic vegetables and everyone wanted to buy organic vegetables if it was sufficiently available.

Table No.13 Willingness to purchase; even it is slightly costly(n=30)

Willingness	Yes	No
No.of consumers	30	0
Percentage	100	0

Above data indicates, all the consumers were willing to purchase organic vegetables; even it was slightly costlier than the vegetables produced through conventional methods. Owusu *et al* (2010) reported that as much as 71% of the consumers are willing to pay over 50% price premiums for organic vegetables.

From the table no.14, we can infer that even though majority of the consumers were aware of the advantages of consuming organic vegetables, they were not available in the market with labels mentioning organically produced vegetables. Therefore efforts may be intensified by the Department of Agriculture in promoting organic vegetable cultivation by farmers through the implementation of schemes under National Project on Organic Farming. Simultaneously consumers may also be made aware of certification, standards and labeling of organic produce.

Table No.14 Awareness level of consumers towards organic vegetables(n=30)

Sl no	Items	Aware (%)	Partially Aware (%)	Not Aware (%)
1.	In the market, organic and inorganic vegetables are available	16.67	60.00	23.33
2.	Organically produced vegetables are best quality produce	96.67	3.33	0
3.	Organic vegetables are nutritious when compared to other vegetables	96.67	3.33	0
4.	By consuming organic vegetables consumers can keep good health	96.67	3.33	0

5.	Organic vegetables are costlier, since the cost of cultivation of organic vegetables are higher	93.33	6.67	0
6.	There are standards to be followed by organic vegetable producers	0	13.33	86.67
7.	Organic vegetable can be certified by submitting applications to the certifying agency	0	13.33	86.67
8.	Organic vegetables should be labeled clearly by giving the required information to the consumers	0	10.00	90.00
9.	Labeling of organic vegetables should possess accurate information or organic status of products	0	10.00	90.00
10.	Organic vegetable production is compatible with the preservation and conservation of the environment	86.67	10.00	3.33

Conclusion: More than 80 per cent of the conventional farmers had favourable attitude towards

organic farming practices and 90 per cent of the conventional farmers believed that use of organic farming practices was essential for better quality of vegetables. Over the years nearly cent per cent of the conventional farmers reduced the chemical application and increased the application of bio fertilizers. Majority of the consumers were consuming conventionally produced vegetables and very few of them consume both kind of vegetables. Above 95 per cent of the consumers were aware of the harmful effects of conventional vegetables and advantages of organic vegetables. All the respondent consumers were willing to purchase organically produced vegetables even it is slightly costlier. Consumers were totally unaware about the certification of organic vegetables and standards to be followed by organic vegetable producers.

Based on the findings, it was concluded that there was a great demand for organic vegetables in the market. The consumers were willing to pay even higher prices for organically produced vegetables. Hence farmers can be motivated to produce organic vegetables for higher profit. Simultaneously they should also be educated on the procedures of organic cultivation, certification, standards and labelling. Extension machineries may also be geared up, to supply quality organic inputs required for organic vegetable cultivation.

Government machinery should take efforts to differentiate organic fruits and vegetables from the conventional products through labeling and certification in order to assist consumers who are willing to pay realistic premium price for organic vegetables in the market. Since market potential for organic products exist in Kerala, producers and retailers should be assisted and provided with the technical expertise on how to maintain freshness and quality of the organic vegetables so as attract maximum premium price from consumers which will support and motivate the farmers who are producing organic vegetables.

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