



Factors Determining the Adoption of Polyhouse Farming in Thrissur District

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ABSTRACT

Controlled environment in agriculture has gained importance not only in vegetable and ornamental crop production but also in the production of plant seedlings, not only from seeds but from tissue culture procedures also. Though this technology has been accepted by farmers in Thrissur district, still the adoption rate is not impressive. Identifying the factors that encourage the farmers for adopting and declining poly-house farming has significance, because it leads to the grass root level constraints faced by them. In this circumstances, the present study identified the factors determined the adoption of poly-house farming and the constraints faced by poly-house farmers from a sample of 60 farmers through convenience sampling technique. The important factor that determined the adoption of poly-house farming was farmers' awareness about the poly-house farming practices, expected economic benefit and their willingness to take risk. The main problem of poor adoption was the fear of initial decline in yield. There is a need for awareness campaigns for attracting youth to poly-house farming. Finally the study reflected that the farmers were moderately favourable to the poly-house farming.

Keywords: Poly house farming, factors, adoption, farmers, constraints

Poly-house farming is a substitute technique in agriculture in rural India which shrinks the dependency on rainfall and makes the best possible use of land and water resources. Poly-houses are constructed for growing of vegetables, floriculture, and planting materials, fruit crop budding for export market. It is aimed at provide physical environments suitable for the survival and growth of plants. This technology is useful in improving the productivity of crops qualitatively and quantitatively by 3 to 5 times as compared to normal cultivation practices in uncontrolled environment. The poly-houses helps to make possible round the year production of desired crops and permits off-season production by way of probable usage of light, temperature, humidity, carbon dioxide level and nature of root medium. The modern poly-house depicts on

technology evolution from agricultural and engineering sciences. Complicated environmental control systems generate finest plant growing conditions in a modern poly-house. Poly-houses are covered with a transparent material in which crops are grown under deviant environment conditions. The primary environmental parameter traditionally controlled is temperature, usually providing heat to overcome extreme cold conditions.

However, environmental control can also contain cooling to mitigate extreme temperatures, light control either shading or adding supplemental light, carbon dioxide levels, relative humidity, water, plant nutrients and pest control. So, Poly-house technology is the technique of providing favourable environment condition to the

plants. All aspects of the natural environment adapted for maximum plant growth and economic return.

Statement of the Problem

Kerala State Horticulture Mission, under National Horticulture Mission program, a central government sponsored scheme (from 2005 to 2006) had given sanction for 1,115 poly-houses in the state. Vegetables from poly-house farmers were procured jointly and sold through the state government's Horticulture Mission. At the same time, the demand for quality agricultural products, mainly organic vegetables were increasing. Structural design poly-house provides protection against damage from wind, rain, heat, and cold. The technology for this system of food production has advanced a great deal in the last 20 years. Controlled environment agriculture has gained in horticultural importance not only in vegetable and ornamental crop production but also in the production of plant seedlings, either from seed or through tissue culture procedures. Though this technology has been accepted by farmers in Thrissur district, still the adoption rate is not impressive. Identifying the factors that encourage the farmers for adopting and declining poly house farming has significance, because it leads to the grass root level constraints faced by them.

Objective of the Study

- ❖ To identify the factors determining the adoption of Poly-house farming in Thrissur District.
- ❖ To examine the constraints faced by poly-house farmers.

Methodology of the Study

The primary data was collected from 60 poly-house farmers in Thrissur district through convenient sampling technique. Structured interview schedules were used to collect primary data from farmers.

RESULTS AND DISCUSSION

The poly house farmer in Thrissur district has constructed the poly houses in their own land. It has been noted that full time agriculturist who are devoted to agriculture were limited to fifty percent of the respondents and

majority of farmers belong to the age group between 45 years to 60 years. It shows that educated youth in Kerala has refused the poly-house farming. The study area embraced organic, inorganic and mixed (organic and inorganic) farming practices. Organic farming relies on fertilizers of organic origin such as compost, manure, green manure, bone meal etc. Inorganic farming is an agriculture production method which involves the use of man-made products such as fertilizers, pesticides, herbicides etc for improving the productivity and plant protection. In case of fertiliser and seeds/ seedlings the majority of farmers availed external sources while farmers own contribution protruded in the labour activities needed for the poly house farming. Majority of the respondents were engaged to conventional farming activities for more than 5 to 9 years. Only 13 farmers were noticed with less than 5 years experience in farming practices. Mixed farming practice comprises of partially adopted practices of both organic farming and inorganic farming. 43.33 per cent of the farmers were engaged in mixed farming practice as they have used both organic and conventional practices and 26.67 per cent adopted conventional farming in poly-house. The remaining 30 per cent farmers were organic farmers.

Factors Determining the Adoption of Poly-House Farming

The important factor that determines the farmers towards adoption of poly-house farming was farmers' awareness about the poly-house farming practices. The farmers also have enough experience in poly house farming. They also avail technical, financial and other support from institutions. Farmers were highly conscious about the returns they can obtain from this innovative cultivation. They were not willing to take risk because poly-house farming is a recent innovative farming practice. Training was not sufficient to make the farmers attracted towards poly-house farming.

Reasons for the non-adoption perceived by the farmers

As a result from the Table 2, 33.33 per cent of the members responded that initial decline in the yield was the main reason for the poor adoption of farming. The initial decline was due to the spreading of diseases. 22 per cent

Table 1: Factors determining the adoption of poly-house farming. (n=60)

Sl. No.	Factors	Strongly Agree (5)	Agree (4)	No Opinion (3)	Disagree (2)	Strongly Disagree(1)	Total Score	Indices	Rank
1	Experience in farming	18	8	5	4	1	116	77.33	II
2	Awareness about poly-house farming	9	8	2	2	—	132	86.67	I
3	Economic benefit	10	8	6	4	3	106	70.67	IV
4	Institutional support	2	8	8	2	2	112	74.66	III
5	Willing to take risk	7	4	8	10	6	76	50.67	VI
6	Technical advice / help from agencies	5	5	4	9	5	90	60	V
7		5	3	3	8	11	73	48.67	VII

Source: Primary data, 2016

Table 2: Reasons for the non-adoption perceived by the farmers (n=60)

Sl. No.	Reasons	No of farmers	Percentage
1	Lack of adequate awareness about the technology	13	22
2	Initial decline in yield	20	33.33
3	Lack of availability of input	12	20
4	Inadequate training	5	8.67
5	Lack of financial support	12	20
	TOTAL	60	100

Source: Field Survey, 2016.

Table 3: Major constraints faced by farmers in the production period

Sl. No.	Factors	Strongly Agree (5)	Agree (4)	No Opinion (3)	Disagree (2)	Strongly Disagree(1)	Total Score	Indices	Rank
1	Pest attack and disease	28	12	14	4	2	240	80	I
2	Climatic changes	19	18	13	6	4	222	74	II
3	Less availability of inputs	12	10	25	8	5	240	65.33	III
4	Lack of financial inputs	10	13	17	12	8	185	61.67	IV
5	Lack of labour	6	10	17	20	7	168	56	V

Source: Field Survey, 2016.

Table 4: Post-harvest problems

Sl. No.	Factors	Strongly Agree (5)	Agree (4)	No Opinion (3)	Disagree (2)	Strongly Disagree (1)	Total Score	Indices	Rank
1	Price fluctuation for the produce	38	12	6	4	0	264	88	I
2	Lack of innovative marketing	25	15	13	7	0	238	79.33	II
3	Lack of good market for produce	20	15	18	4	3	225	75	III
4	Transportation facility	14	15	21	8	2	211	70.33	IV
5	Inadequate processing and storage	12	10	17	19	2	191	63.67	V

Source: Field Survey, 2016.

of the members responded that lack of awareness was the main reason. Among the 60 farmers 20 per cent lacks the availability of inputs and lack of financial support for adoption. 8.67 per cent of the farmers responded that inadequate supporting infrastructure was the reason for their poor adoption of poly-house farming.

Constraints Faced by Farmers

The constraints faced by the poly-house farmers in pre-production, production and post harvest stages were analysed using different variables. In pre-production stage there were no major problems compared with production and post-harvest stages. So, the problems associated with production period and post harvest were analysed.

Pest attack and diseases are the major constraints faced by the farmers during the production stage. Climatic changes, less availability of inputs and lack of financial inputs are the other problems faced by the farmers. Non availability of adequate labour force was a minor problem in the study area.

Price fluctuation was the major constraints disclosed by the farmers, which was followed by lack of innovative marketing, transportation facility and inadequate processing and storage facilities. Majority of farmers accepted the poly-house farming with the hope of a better yield in the short run. As a general opinion the farmers opined that the activities of Krishi Bhavan, Krishi Vigyan Kendras and other institutional functionaries should be intensified further.

CONCLUSION

The study analysed the farmers' attitude towards poly-house farming in Thrissur District. The farmers were highly aware about the different aspects of poly-house farming. The study threw light into the factors determining the adoption of poly-house farming and the major problems faced by the poly-house farmers in the study area. The major factors that determined the adoption includes, awareness, farmers experience in farming, support from different agencies and also the economic benefit expected by farmers.

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