



Awareness Programme on Off-Season Vegetable Production in Shade Net House among the Farmers of Raipur District, Chhattisgarh

*Pooja Sahu, Dr. Payal Jaiswal and Dr. Subuhi Nishad
Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G), India
*Corresponding Author's email: sahupooja005@gmail.com

Agriculture is the backbone of the Indian economy, providing livelihood opportunities to nearly half of the country's population. Vegetable cultivation occupies an important position in Indian agriculture because vegetables are rich sources of vitamins, minerals, dietary fibre, antioxidants, and essential nutrients required for balanced human nutrition. Continuous population growth, changing food habits, increasing health consciousness, and urbanization have considerably increased the demand for fresh vegetables throughout the year. However, conventional open-field cultivation is largely dependent upon seasonal climatic conditions, resulting in fluctuations in production, market supply, and prices. Protected cultivation has emerged as an effective technology to overcome climatic limitations and produce vegetables during the off-season. Shade net houses, polyhouses, walk-in tunnels, and low tunnels provide a favourable microclimate for crop growth by regulating sunlight intensity, temperature, humidity, and ventilation. Among these structures, shade net houses are comparatively economical and highly suitable for small and marginal farmers because they require relatively lower investment while providing substantial improvement in vegetable quality and productivity. The cultivation of crops such as tomato, capsicum, cucumber, chilli, brinjal, and leafy vegetables under shade net houses enables farmers to produce quality vegetables during periods of low market supply, thereby obtaining premium prices and higher profits. These concepts form the basis of the project report. Despite these advantages, the adoption of protected cultivation technologies in Chhattisgarh remains limited due to inadequate technical knowledge, lack of awareness regarding government assistance, insufficient extension support, and financial constraints. Many farmers are unfamiliar with the design, management, crop selection, irrigation scheduling, pest management, and economic benefits associated with shade net cultivation. Therefore, creating awareness through extension education is essential for increasing technology adoption.

Objectives

1. To study about shade net house and off-season vegetables production.
2. To conduct the awareness programmes about off-season vegetables production in shade net house through the different methods among the farmers.
3. To conduct the various extension approaches to the farmers regarding shade net house subsidy and their application form.
4. To find out the problems and obtain suggestions from selected farmers to overcome the problems.

Materials and Methods

Study Area and Sample

The programme was conducted in Raipur district of Chhattisgarh. The programme covered farmers from villages under Dharsiwa Block, where vegetable cultivation is widely practiced.

A total of sixty vegetable growers participated in the programme. Data were collected through personal interviews using a pre-tested schedule. Farmers were informed about the objectives of the programme, and efforts were made to establish rapport before data collection. Extension methods included lectures, demonstrations, field visits, farmer meetings, group discussions, pamphlet distribution, and direct interaction regarding shade net house technology, crop management, and government subsidy schemes. The collected information was summarized using simple descriptive statistics such as frequency and percentage.

Table 1. Extension methods used during the awareness programme

Activity	Purpose
Lecture	Scientific knowledge dissemination
Demonstration	Practical skill development
Field visit	Exposure to successful shade net houses
Group discussion	Problem identification
Pamphlet distribution	Technology dissemination
Farmer interaction	Feedback collection

Results and discussion

The present study was conducted to assess the effectiveness of an awareness programme on off-season vegetable production under shade net houses among farmers of Dharsiwa Block, Raipur district. The findings are presented under the socio-economic characteristics of respondents, awareness regarding shade net house technology, off-season vegetable production, and the effectiveness of different extension methods employed during the programme.

Socio-economic Profile of Respondent Farmers: The socio-economic characteristics of respondents play an important role in the adoption of improved agricultural technologies. The study revealed that out of 60 respondents, the majority (46.67%) belonged to the middle-age group (36–50 years), followed by young farmers (38.33%) and elderly farmers (15.00%). The predominance of middle-aged farmers indicates that economically active farmers are more inclined towards adopting improved vegetable production technologies. The educational status of respondents showed that 30.00% had primary education, 28.33% had completed higher secondary education, 16.67% had studied up to high school, while only 5.00% were illiterate. This indicates that most respondents possessed adequate literacy to understand extension messages, training programmes, and printed educational materials. Landholding analysis revealed that 38.33% of respondents were marginal farmers, followed by small (28.33%), medium (25.00%), and large farmers (8.34%). The predominance of marginal and small farmers highlights the need for affordable protected cultivation technologies such as shade net houses. Gender distribution indicated nearly equal participation of male (51.67%) and female (48.33%) farmers, demonstrating the increasing involvement of rural women in vegetable production activities.

Table 2. Socio-economic profile of respondents (n = 60)

Particular	Category	Number	Percentage
Age	Young	23	38.33
	Middle	28	46.67
	Old	9	15.00
Education	Illiterate	3	5.00
	Read & write	6	10.00
	Primary	18	30.00
	High School	10	16.67
	Higher Secondary	17	28.33
	Graduate	6	10.00

Landholding	Marginal	23	38.33
	Small	17	28.33
	Medium	15	25.00
	Large	5	8.34
Gender	Male	31	51.67
	Female	29	48.33

Awareness on Shade Net House Technology and Off-season Vegetable Production: The awareness programme successfully introduced farmers to the concept of protected cultivation and the importance of shade net houses for producing vegetables during the off-season. Information was disseminated on the structure and types of shade net houses, shade percentage, site selection, orientation, construction materials, suitable vegetable crops, irrigation management, nutrient management, and plant protection practices. Farmers were also informed about government subsidy schemes and application procedures available for establishing shade net houses. Practical demonstrations, field visits, group discussions, and farmer meetings proved highly effective in improving farmers' understanding of protected cultivation. Participants recognized that shade net houses provide a favourable microclimate, reduce damage caused by adverse weather conditions, improve vegetable quality, and enable year-round production. Farmers also appreciated the economic advantages of off-season vegetable cultivation, including higher market prices, increased income, better resource-use efficiency, and reduced production risks.

Table 3. Major information disseminated during the awareness programme

Topic	Information Provided
Protected cultivation	Concept and importance of shade net houses
Suitable crops	Tomato, capsicum, cucumber, chilli, brinjal and leafy vegetables
Crop management	Nursery raising, irrigation, nutrient and pest management
Benefits	Improved quality, higher yield, year-round production and higher income
Government support	- Subsidy schemes and application procedures - MIDH subsidy - State Horticulture Department schemes - Bank credit - NABARD assistance - Farmer Producer Organizations (FPOs)
Extension methods	Demonstrations, field visits, farmer meetings, pamphlets and group discussions

Discussion

The awareness programme effectively improved farmers' knowledge of shade net house technology and off-season vegetable production. Demonstrations and field visits proved to be the most effective extension methods by providing practical learning and encouraging active participation. Farmers developed a positive attitude toward adopting protected cultivation after understanding its technical and economic benefits. The study concludes that NSS-based awareness programmes are valuable extension tools for promoting protected cultivation, enhancing farmers' knowledge, increasing income opportunities, and supporting sustainable vegetable production among small and marginal farmers.

Conclusion

The awareness programme on off-season vegetable production under shade net houses successfully enhanced farmers' knowledge of protected cultivation technologies and their economic benefits. The study revealed that most respondents were middle-aged, small and marginal farmers with adequate educational backgrounds to adopt improved cultivation

practices. Extension approaches such as demonstrations, field visits, group discussions, and personal interactions proved effective in increasing awareness and encouraging technology adoption. The programme also improved farmers' understanding of government subsidy schemes and scientific crop management practices. Overall, the study highlights that continuous extension support and capacity-building programmes can promote sustainable vegetable production, improve farmers' income, and strengthen agricultural development in Chhattisgarh.