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Adoption of natural farming practices: Impact assessment of KVK training programmes

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Abstract

The promotion of environment-friendly agriculture is essential in the backdrop of the environmental burden caused by chemical input-intensive farming practices prevalent since the First Green Revolution. Synthetic agrochemicals, derived from non-renewable fossil fuels, are not only diminishing in availability but may also exert pressure on foreign exchange in the future. Natural farming, which integrates traditional ecological knowledge with on-farm resource recycling, offers a sustainable alternative. This study was carried out in five adopted villages of Krishi Vigyan Kendra (KVK), Kolar district, Karnataka, under the University of Agricultural Sciences, Bengaluru. A structured interview schedule was used to collect data from 150 trained farmers to assess changes in perception and identify constraints in the adoption of natural farming practices. Findings revealed that only 4.67% of farmers had a high perception of natural farming before training, which increased to 28.00% after training. The major constraints reported were the complex procedures involved in preparing natural farming inputs such as Jeevamrutha and Beejamrutha (73.33%) and the high cost of certain organic raw materials (69.67%). The results highlight the effectiveness of KVK training in improving farmer awareness of natural farming, while emphasizing the need for simplifying input preparation methods and ensuring cost-effective resource availability to enhance adoption in the region.

Keywords: Natural farming, Kolar district, environment-friendly agriculture, farmer perception, adoption constraints

Introduction

The environmental consequences of chemical input-intensive agriculture, which gained prominence after India's First Green Revolution, have raised concerns regarding soil degradation, biodiversity loss, and environmental pollution. Over-reliance on synthetic fertilizers and pesticides—produced largely from non-renewable fossil fuels—has contributed to resource depletion and may impose a significant foreign exchange burden in the future. Natural farming offers a sustainable alternative by integrating traditional agricultural wisdom with ecological principles. It promotes on-farm resource recycling, soil fertility restoration, biodiversity conservation, and reduced dependence on external chemical inputs. Similar in philosophy to organic farming as defined by the Food and Agriculture Organization (FAO), natural farming prioritizes locally adapted practices, use of bio-inputs such as Jeevamrutha and Beejamrutha, mulching, mixed cropping, and biological pest management, thereby reducing environmental risks and enhancing resilience to climate variability. The Krishi Vigyan Kendra (KVK), Kolar, under the University of Horticultural Sciences, Bagalkot, plays a key role in promoting such eco-friendly practices by providing need-based, skill-oriented training to farmers and farm women. These trainings aim to enhance knowledge,

improve perceptions, and encourage adoption of sustainable agricultural technologies suited to the Eastern Dry Zone of Karnataka. Evaluating the impact of such training programmes is essential to determine their effectiveness, identify constraints, and improve future interventions. The present study was therefore undertaken in Kolar district with the objectives to: (i) assess changes in farmer perception towards natural farming before and after KVK training, (ii) evaluate the extent of adoption of natural farming practices, and (iii) identify constraints faced in their adoption.

Materials and Methods

The present investigation was undertaken to study the impact of training programmes on the adoption of natural farming practices by farmers trained through Krishi Vigyan Kendra (KVK), Kolar, Karnataka. The study was conducted during 2024-25 in the Eastern Dry Zone of Karnataka. A list of trainees was obtained from KVK Kolar who had undergone structured training on various natural farming practices, including preparation and application of Jeevamrutha, Beejamrutha, Ghana Jeevamrutha, mulching, biological pest management, and use of biofertilizers. From the taluks covered by KVK Kolar, the highest number of trained farmers were identified in Bangarpet, Malur, and Kolar taluks. From each taluk, adopted villages with a

significant number of trained farmers were purposively selected. The final study villages included Kurubarahalli (Bangarpet taluk), Nidramangala (Malur taluk), and Chikkapallavi, Huttur, and Chakarasanaahalli (Kolar taluk). These villages were part of KVK's adopted cluster and had active demonstration plots for natural farming.

A comprehensive list of trained farmers was prepared, and 150 respondents were randomly selected from the adopted villages. Data were collected using a pre-tested structured interview schedule, covering farmer demographics, perception scores on natural farming practices, and constraints faced during adoption. The collected data were analyzed using simple statistical tools such as percentage analysis and correlation coefficients to determine the relationship between farmer characteristics and their perception levels.

Results and Discussion

Perception of Natural Farming Practices

The data (Table 1) revealed that in the case of application of

farmyard manure (FYM), a majority of the trained farmers (54.67%) had high perception, followed by 39.33% with medium and only 6.00% with low perception. For green manuring, 41.33% of the trained farmers had high perception, 30.67% had medium, and 28.00% had low perception. Regarding vermicomposting, 46.00% of the trained farmers had medium perception, 43.00% had high, and 25.33% had low perception. In the case of Azolla cultivation, 45.33% had medium perception, followed by 28.00% high and 26.67% low. For the use of blue-green algae, the majority (51.33%) had medium perception, 44.00% had high, and 19.33% had low perception. With regard to neem oil application, 52.00% of the farmers had medium perception, followed by 32.00% high and 16.00% low perception. The use of cow urine showed similar trends, with 49.33% medium, 32.00% high, and 18.67% low perception. In the case of biofertilizers such as Azotobacter and PSB, 50.67% had medium perception, 35.00% high, and 14.33% low perception.

Table 1: Perception of trained farmers towards different natural farming practices

Sl. No.	Natural farming practice	High (%)	Medium (%)	Low (%)
1	Application of FYM	54.67	39.33	6
2	Green manuring	41.33	30.67	28
3	Vermicomposting	43	46	11
4	Azolla cultivation	28	45.33	26.67
5	Use of blue-green algae	44	51.33	4.67
6	Use of neem oil	32	52	16
7	Use of cow urine	32	49.33	18.67
8	Use of Azotobacter and PSB biofertilizers	35	50.67	14.33

Perception Before and After Training

Before participating in the KVK training programme, the majority of respondents (56.00%) were in the low perception category, followed by 39.33% in the medium category and only 4.67% in the high perception category. After training, 40.67% of respondents shifted to the medium perception category, 28.00% to the high perception category, and only 31.33% remained in the low perception

category. This shift indicates that the training significantly improved farmers' understanding and positive attitude towards natural farming practices^[8].

These findings are in agreement with the reports of Saxena and Singh (2000)^[13], who observed similar positive changes in farmer perception following targeted training interventions.

Table 2: Change in perception of farmers before and after KVK training

Perception category	Before training (%)	After training (%)
High	4.67	28
Medium	39.33	40.67
Low	56	31.33

Constraints in Adoption of Natural Farming Practices

The major constraints reported by farmers in adopting natural farming practices (Table 3) were: Difficult methods of preparing natural farming inputs such as Jeevamrutha and Beejamrutha (73.33%) - ranked first. High cost of certain organic raw materials like jaggery, pulse flour, and oil cakes (69.67%) - ranked second. Poor access to credit facilities for investment in initial set-up (66.00%) - ranked third. Lack of

regular availability of quality raw materials (58.00%) - ranked fourth. Climatic variability affecting yields (56.67%) - ranked fifth. Lack of proper training and follow-up extension support (49.00%) - ranked sixth. Poor financial condition of farmers limiting large-scale adoption (46.67%) - ranked seventh. Non-availability of extension literature and reading materials in the local language (42.33%) - ranked eighth.

Table 3: Constraints perceived by farmers in adoption of natural farming practices

Sl. No.	Constraint	% Respondents	Rank
1	Difficult preparation methods for natural inputs	73.33	I
2	High cost of certain organic raw materials	69.67	II
3	Poor access to credit facilities	66	III
4	Lack of regular availability of quality raw materials	58	IV
5	Climatic variability affecting yields	56.67	V
6	Lack of proper training and follow-up extension support	49	VI
7	Poor financial condition of farmers	46.67	VII
8	Non-availability of extension literature in local language	42.33	VIII

Correlation Between Farmer Attributes and Perception Levels

The correlation analysis (Table 4) showed that education level ($r = 0.521$), size of landholding ($r = 0.314$), credit availability ($r = 0.298$), annual income ($r = 0.511$), source of agricultural information ($r = 0.278$), contact with extension personnel ($r = 0.412$), innovativeness ($r = 0.245$), and knowledge about natural farming ($r = 0.473$) had a positive and significant relationship ($p < 0.05$) with perception levels. Age, caste, family size, and social participation were not significantly correlated.

These findings are in line with Badodiya *et al.* (2009)^[3] and Borkar *et al.* (2000)^[6], who reported that socio-economic and extension contact variables significantly influence the adoption of eco-friendly farming practices.

Table 4: Correlation between socio-economic attributes and perception of trained farmers

Attribute	Correlation coefficient (r)	Significance
Age	0.028	NS
Education	0.521	
Caste	0.075	NS
Size of family	0.029	NS
Size of landholding	0.314	
Social participation	0.075	NS
Credit availability	0.298	
Annual income	0.511	
Source of agricultural information	0.278	
Contact with extension personnel	0.412	
Innovativeness	0.245	
Knowledge about natural farming	0.473	

Note: Significant at 5% probability level; NS - Non-significant

Conclusion

The study revealed that only 4.67% of respondents had a high perception of natural farming before the KVK training, which increased to 28.00% after the programme. The training had a positive impact in shifting a large proportion of farmers from low to medium and high perception categories. However, difficult preparation methods for natural inputs and the high cost of certain raw materials remain significant barriers. Addressing these constraints through simplified input preparation protocols, assured raw material supply, and financial support mechanisms could enhance the adoption of natural farming in Kolar district.

References

1. Abebaw D, Belay K. Factors influencing adoption of high yielding maize varieties in Southwestern Ethiopia: An application of logit. *J Int Agric.* 2001;40(2):149-67.
2. Ahire IM, Sandhya, Shenoy, Reddy CV. A study on

adoption level of growers of Krishna district of Andhra Pradesh. *J Res ANGRAU.* 2007;35(1):73-6.

3. Badodiya SK, Daipuria OP, Jaulkar AM, Dhakad U. Management of eco-friendly practices by winter vegetable growers. In: National Seminar on Organic Farming; RVSKVV, Gwalior; 2009.
4. Bala B, Sharma SD, Sharma RK. Knowledge and adoption level of improved technology among rural women owing to extension programmes. *Agric Econ Res Rev.* 2006;19:301-10.
5. Binkadakatti JS. Impact of Krishi Vigyana Kendra trainings on use of bio-fertilizers and bio-pesticides by tur farmers in Gulbarga district [M.Sc. (Agri.) Thesis]. Dharwad, Karnataka (India): University of Agricultural Sciences; 2008.
6. Borkar MM, Chothe GD, Lanjewar AD. Characteristics of farmers influencing their knowledge about use of bio-fertilizers. *Maharashtra J Ext Educ.* 2000;19:59-63.
7. Borua S, Brahma AK. A study on the knowledge level and extent of adoption of selected technology by rural youth trained in KVKs of AAU in Assam. *J Acad Ind Res.* 2012;1(7):374-8.
8. Deb A, Bhowmick S. Zero budget natural farming: A sustainable agricultural practice. *Int J Agric Nutr.* 2024;6(2):89-94.
9. Dubey AK, Srivastava JP. Impact of KVK training programme on knowledge and adoption of brinjal crop technologies in Allahabad District. *Indian J Ext Educ.* 2005;5(2&3):130-2.
10. Kharatmol SN. Impact of trainings conducted on vermicompost by Krishi Vigyan Kendra, Bijapur [M.Sc. (Agri.) Thesis]. Dharwad, Karnataka (India): University of Agricultural Sciences; 2006.
11. Neupane RP, Sharma KR, Thapa GB. Adoption of agroforestry in the hills of Nepal: A logistic regression analysis. *Agric Syst.* 2002;72:177-96.
12. Kumar P, Singh RK, Singh SK, Singh RN. Impact of KVK training programme on adoption of organic farming practices. *Int J Curr Microbiol Appl Sci.* 2018;Special Issue-7:3491-6.
13. Saxena KK, Singh RL. Adoption of organic farming practices by farmers of Malwa Region. *Maharashtra J Ext Educ.* 2000;21:53-4.
14. Cavane E. Farmer's attitude and adoption of improved maize varieties and chemical fertilizers in Mozambique. *Indian Res J Ext Educ.* 2011;11(1):1-6.