

**Identifying Constraints Perceived by Farmers
Practicing Groundnut Cultivation in Odisha,
India**

UNDER PEER REVIEW

ABSTRACT

Aims: To identify the constraints faced by the respondents in groundnut cultivation in Balasore district of Odisha, India.

Study design: *Ex post facto* research design was selected for the study.

Place and Duration of Study: The study was carried out from the first week to the fourth week of May 2023.

Methodology: The random sampling approach was used to pick one hundred twenty (120) respondents from three blocks in Odisha's Balasore district. A structured interview schedule was prepared to collect the data. Personal interview was conducted to collect the primary data. Data analyses was done to find out the mean score values of each statements using Microsoft Excel Software and then ranking of statements was done.

Results: The results revealed that insufficient training for Knowledge and skill enrichment availability of choiceable variety, not giving timely guidance and expertise and lack of transparency in marketing system were some of the the major constraints faced by the respondents.

Conclusion: For improving the production & productivity of groundnut, a need-based action plan for the betterment of farmers in particularly groundnut growers in the state has to be formulated and the constraints such as timely allocation of resources, proper credit facilities and awareness about management practices among others has to dealt with.

1. INTRODUCTION

Groundnut is a popular leguminous crop that plays an important part in the global agricultural landscape. India and China together account for nearly two-thirds of world output. Other major producers include Nigeria, Senegal, Sudan, and Argentina. Kernels are commonly used in underdeveloped nations for oil extraction, food production, and confectionary items [1]. However, groundnut production and marketing confront various problems, particularly in places such as Ethiopia, Burkina Faso, and India [2,3,4]. India accounted for around 13% (5.8 million ha.) of the world's oilseeds area, 5.2 percent (25.2 million tons) of the world's oilseed production, and 18% of the world's edible oil consumption [5]. During the rabi season in the eastern state of India, Odisha, groundnut cover 123 thousand hectares, respectively. The crops' production was low due to insufficient irrigation water and poor irrigation management [6]. The groundnut cultivation also presents challenges such as climate change, appropriate seed selection, and land preparation techniques, which have a significant impact on groundnut production and need the adoption of new technology [7,8]. Thus, there is a need to improve the production and productivity of the oilseeds through the adoption of suitable technologies and assist the farmers in attaining sustainable livelihood. With this background, the study aimed to identify different constraints perceived by farmers in groundnut cultivation in Balasore district of eastern state of Odisha, India.

2. MATERIAL AND METHODS

2.1 Research Design

An *ex post facto* research design was used for the research.

2.2 Sampling Design

In order to carry out the study, the district of Balasore was identified as a significant area where groundnut cultivation has flourished over extensive acres for the last five decades. Given that

the participants are groundnut cultivators, it was decided to incorporate three prominent groundnut-producing blocks, namely Basta, Baliapal, and Jaleswar. The structured interview schedule was administered directly to the selected groundnut cultivators to gather the requisite data for the study. A roster of groundnut cultivators from the designated blocks was obtained from block extension personnel. From each block, four Gram Panchayats were randomly chosen. As a result, a total of 120 groundnut growers were randomly selected for the research.

2.3 Selection of Constraints

The constraints addressed in the study pertain to the research issue and the challenges encountered by respondents in the effective cultivation of groundnut. These constraints were categorized into planning, technological support, service & supply, monitoring & supervision, credit & finance, harvesting & post-harvesting and marketing with responses rated on a scale of agreement and questions were formulated accordingly (Table 1). The respondents' feedback was classified into categories of strongly agree, agree, and disagree, assigned scores of 3, 2, and 1, respectively.

2.4 Method of Data Collection

The researcher conducted personal interviews with the respondents using a structured interview schedule. These interviews primarily took place at the respondents' residences in a largely informal setting. The interviews were carried out from the first week to the fourth week of May 2023. The objectives of the study were conveyed to the respondents before gathering their responses. The interview schedule was articulated to the participants in their native language to ensure comprehension and facilitate accurate responses.

2.5 Data Analysis

The data collected was subsequently organized for empirical evaluation and analysis. The sum of the responses given by the respondents were subsequently used for calculating the mean score as well as ranking of the constraints using Microsoft Excel software.

Table 1. List of constraints selected for the study

Sl No.	Constraints	Statements
1	Planning	Not organizing the growers No trust for cluster approach No site selection with common agreement No participatory decision making No motivation for teamwork Not assigning the responsibility Insufficient attempt for timely of activities
2	Technological Support	Insufficient training for knowledge & skill enrichment No exposure visit to gain experience & confidence Not distributing reference materials Insufficient guidance & expertise Lack of competency of the field staffs Extension officials not cooperative Inadequate demonstration & field days No clarification of doubts No regular monitoring & supervision Any other (specify)
3	Service & supply	Not ensuring availability of choice able variety Not liaising for the supply of quality seeds Not liaising with dealers for timely supply of required inputs Not ensuring authenticity of available plant protection chemicals Insufficient knowledge & skills in use of 10 feasible implements Custom hiring service not available in the locality Insufficient attempt in pre-arrangement of inputs & materials Any other (specify)
4	Monitoring & supervision	No regular diagnostic visits conducted Timely guidance & expertise not given No close monitoring & supervision Not involving related departments for resource mobilisation Not liaising for timely input availability No interest for timely operation of all practices No immediate action on field problems Not involving in conflict resolution Any other (specify)
5	Credit & Finance	Not liaising with credit institutions to sanction loan Required amount not sanctioned Harassment in processing of documents Not fixing installments as per paying capability No consideration in guarantee No subsidy facility No insurance coverage
6	Harvesting & post-harvesting	No guidance for timely harvest Skill deficiencies in use of implements Poor knowledge on quality maintenance Poor soil moisture recreation

		Noadequatespaceforproperdrying Nocommunitydryingyardfacilities Poorknowledgeonproperstoring Noinsurancecoverageforstorage loss Anyother (specify)
7	Marketing	Noideaaboutmarketinginformation Notguidingto collect market information Noreasonableminimumsupportprice Notliasoningforimmediatedisposalof theproduce Nocooperativesysteminprocurement Exploitationbythetradersand businessman Notransparencyingrading &measurement Noimmediatepayment Anyother (specify)

3. RESULTS AND DISCUSSION

Following data analysis, the following results were obtained.

3.1 Constraints faced by the Groundnut growers in the planning stage:

Proper planning ensures timely implementation of all activities. Proper planning also made easier in implementation of all production activities. The extension officials working in the study area have to plan appropriately with the groundnut growers. The mean score value indicated that insufficient attempt for timely operation of activities, not organising the growers, no participatory decision making and no motivation for teamwork were the major constraints stated by the respondents in planning (Table 2). The majority of respondents had also disagreed for no site selection with common agreement, not assigning the responsibility and to some extent no trust for cluster approach implying that the extension functionaries are taking care of these activities.

Organising the groundnut growers facilitates proper planning, need based management, timely operation and better supervision. Teamwork helps in arranging inputs, resource mobilisation and co-operating with each other in use of recommended practices. Participatory decision making ensures timely management of production activities. All these aspects are essential for proper planning to achieve the end results. The extension officials have to take necessary steps to overcome all these constraints ensuring better planning in management of all production activities in groundnut cultivation.

Table 2. Constraints faced by the Groundnut growers in the planning stage**(n=120)**

Sl.no	Constraint	Strongly Agree	Disagree	Mean Rank	
i)	Not organizing the growers	67	52	1	2.55 II
ii)	No thrust for cluster approach	8	49	63	1.54 V
iii)	No site selection with common Agreement	0	31	89	1.26 VII
iv)	No participatory decision making	63	46	11	2.43 III
v)	No motivation for team work	53	52	15	2.32 IV
vi)	Not assigning the responsibility	0	42	78	1.35 VI
vii)	Insufficient attempt for timely operation of activities	71	49	0	2.59 I

(Maximum obtainable score-3)

3.2 Constraints faced by the Groundnut growers regarding technological support:

Knowledge and skill enrichment enable the farmer to use recommended practices. Exposure visits to ideal places develop confidence of the farmers and motivate them for adoption. The farmers also need regular guidance and expertise for timely management of all activities. Immediate solving of the field problems facilitates overcoming their inconveniences. Therefore, the respondents should be provided with all these possible technological support by the extension officials.

As observed from table 3, the respondent agreed about distributing reference material and expertise which indicates that these facilities are extended to them. Similarly, the respondents had good opinions about the competency and cooperative attitude of the extension officials. In other hand, majority of the respondents had stated the constraints of insufficient training for knowledge and skill enrichment, no exposure visit to gain experience and confidence along with inadequate demonstration and field days. These activities accelerate the technological competency for respondents in effective management of various practices in groundnut cultivation. Hence, all these activities should be undertaken regularly enabling the respondents to acquire knowledge and skill competency and use recommended practices in groundnut cultivation.

Table 3. Constraints faced by the Groundnut growers regarding technological support (n=120)

Sl.no	Constraint	Strongly agree	Agree	Disagree	Mean	Rank
i)	Insufficient training for knowledge and skill enrichment	78	40	2	2.63	I
ii)	No exposure visit to gain experience and confidence	62	53	5	2.48	II
iii)	Not distributing reference materials	0	58	62	1.48	VII
iv)	Insufficient guidance and expertise	1	56	63	1.46	IX
v)	Lack of competency of the field staffs	0	56	65	1.47	VIII
vi)	Extension officials not cooperative	1	62	57	1.53	V
vii)	Inadequate demonstration & field days	62	39	19	2.36	III
viii)	No clarification of doubts	0	59	61	1.49	VI
ix)	No regular monitoring & supervision	0	66	54	1.55	IV

(Maximum obtainable score-3)

3.3 Constraints faced by the Groundnut growers regarding service & supply:

Timely application of required inputs regulates crop stand along with production and productivity. The farmers therefore required timely availability of required inputs in their locality. The extension officials need to liaison with the input supplier for timely supply of required inputs and materials. The departmental input supply must be made available to the growers in time. The constraints stated by the respondents on service and supply have been indicated in table 4.

The respondents had cited the constraints of not ensuring availability of choice-able varieties, insufficient attempt in pre-arrangement of inputs and materials along with custom hiring services in use of implements.

Quality seeds of choice-able variety ensure good germination and crop growth. The inputs should be available sufficiently ahead of the crop sowing so that the respondents can reserve the seeds and other inputs for timely sowing. Each farmer cannot purchase various implements and machinery for use in land preparation, weeding, hoeing, harvesting and pod detachment. Mechanism needs to be developed in each village to provide custom hiring facility service enabling the farmer to use implements and machineries with affordable charges. The extension officials working in the study area have to analyze all these constraints and take necessary steps to extend necessary facilities to groundnut growers for successful crop raising.

Table 4. Constraints faced by the Groundnut growers regarding service & supply**(n=120)**

Sl.no	Constraint	Strongly agree	Agree	Disagree	Mean	Rank
i)	Not ensuring availability of choice able variety	4	62	54	2.47	II
ii)	Not liasoning for supply of quality seeds.	63	50	7	1.64	VII
iii)	Not liasoning with dealers for timely supply of required inputs	7	75	38	1.74	V
iv)	Not ensuring authenticity of available plant protection chemicals	4	78	38	1.71	VI
v)	Insufficient knowledge & skill in use of feasible implements	18	71	31	1.89	IV
vi)	Custom hiring service not available in the locality	69	40	12	2.49	I

(Maximum obtainable score-3)

3.4 Constraints faced by the Groundnut growers regarding monitoring & supervision:

Close monitoring, supervision, timely guidance expertise, resource mobilisation, conflict resolution and immediate solving of field problems etc. are the key indicators for successful raising of groundnut crops. Therefore, proper monitoring and supervision are essential in harvesting good crop, as well as good yield in groundnut. The constraints stated by respondents in monitoring and supervision by the field functionaries have been analysed and presented in Table -5.

As observed from the table, the majority of the respondents had strongly agreed for the statements - timely guidance and expertise as well as no immediate action of field problems. At the same time, the majority of the respondents had also agreed for no regular diagnostic visit, no close monitoring and supervision, resource mobilisation, not liaisoning for timely availability of inputs and interest for timely operation all practices. The mean score value indicated that not being given timely guidance and expertise and no immediate action on field problems were the major constraints in monitoring and supervision. The findings therefore suggested that the extension officials promoting groundnut cultivation in the study area must analyse these two constraints identified and take necessary steps to provide all feasible supports to the groundnut growers.

Table- 5: Constraints faced by the Groundnut growers regarding monitoring and supervision (n=120)

Sl. No	Constraint	Strongly agree	Agree	Disagree	Mean Score	Rank
i)	Noregular diagnostic visits	3	75	42	1.67	III
ii)	Timely guidance and expertise not given	69	42	9	2.50	I
iii)	No close monitoring & supervision	38	70	12	1.58	V
iv)	Not involving related departments for resource mobilisation	2	67	51	1.59	IV
v)	Not liaising for timely input availability	2	64	54	1.56	VII
vi)	No interest for timely operation of all practices	0	68	53	1.57	VI
vii)	No immediate action on field problems	62	34	24	2.32	II
viii)	Not involving in conflict resolution	0	47	73	1.39	VIII

(Maximum obtainable score-3)

3.5 Constraints faced by the Groundnut growers regarding credit and finance facilities:

The farmers required considerable investment in purchasing seed, fertilizer and plant protection chemicals. They might need credit facilities. The respondents therefore asked as mentioned the constraints faced by them on credit and finance. The data collected has been analysed and obtained results reflected in Table- 6.

As observed from the table, majority of the respondents had agreed for not liaising with credit institution, not sanctioning required amount, harassment in processing documents, no fixing instalments as per pay ing capability as well as no insurance coverage. The mean score value indicated that the respondents have faced constraints of the harassment in processing of documents, required amount not sanctioned, no consideration in guarantee and no subsidy facility. Other aspects of credit and finance mentioned in the table might not be considered as major constraints considering a low mean score value. However, the extension officials must analyse all the opinions of the respondents and provide feasible support for easy availability of credit facility.

Table-6: Constraints faced by the Groundnut growers regarding credit and finance facilities (n=120)

Sl.No	Constraint	Strongly agree	Agree	Disagree	Mean score	Rank
i)	Not liaising with credit institution to sanction loan	0	77	43	1.64	VII
ii)	required amount not sanctioned	55	65	0	2.45	II
iii)	Harassment in processing of Documents	56	63	1	2.46	I
iv)	Not fixing instalments as per paying capability	20	77	23	1.97	V
v)	No consideration in guarantee	39	67	14	2.20	III
vi)	No subsidy facility	31	66	23	2.06	IV
vii)	No insurance coverage	21	68	31	1.91	VI

(Maximum obtainable score-3)

3.6 Constraints faced by the Groundnut growers regarding harvesting and postharvesting activities

Timely harvest of groundnut particularly at 80% pod maturity decreases loss of pods. Since harvesting is labour consuming, use of implements will be beneficial. Proper drying, bagging and storing reduces crop damage in storage. The respondent therefore asked to mention the constraints faced in harvesting and post harvesting management. The data collected in this regard have been presented in Table-7 after analysis.

As observed from table 7, most of the respondents had strongly agreed for adequate space for proper drying. Majority of the respondents also agreed to skill deficiency in use of implements, proper drying, quality maintenance of the produce during harvesting, no community drying facilities, poor knowledge on proper storing as well as no insurance for storage loss. However, the mean score value indicated that the respondents had faced many constraints on no adequate space for proper drying. It is therefore suggested that community drying yard facilities may be created along with guidance for timely harvest and adequate knowledge on quality maintenance.

Table-7: Constraints faced by the Groundnut growers regarding harvesting and post harvesting activities:

(n=120)

Sl.No	Constraint	Strongly agree	Agree	Disagree	Mean score	Rank
i)	No guidance for timely harvest	38	46	36	2.01	II
ii)	Skill deficiencies in use of implements	26	62	32	1.95	VI
iii)	Poor knowledge on quality maintenance	29	63	28	2.00	III
iv)	Poor soil moisture during harvesting	19	58	43	1.8	VIII
v)	No adequate space for proper drying	59	44	17	2.35	I
vi)	No community drying facility	29	60	31	1.98	V
vii)	Poor knowledge on proper storing	28	60	32	1.96	IV
viii)	No insurance coverage for storage loss	26	56	38	1.9	VII

(Maximum obtainable score-3)

3.7 Constraints faced by the Groundnut growers regarding marketing activities:

Easy disposal of produce particularly after harvest may eliminate the constraints of storage loss. The respondent should be appraised about the market price regularly. Cooperatives system of procurement is also beneficial for the growers. The data collected in this regard have been presented in Table-8 after analysis. As observed from the table, majority of the respondents were strongly agreed for not guiding the growers to collect market information, no minimum support price of the produce, immediate disposal of produce, exploitation by the traders and businessmen. The majority of the respondents were also agreed and stated the constraints of no idea about marketing information, no cooperative system of procurement, no transparency in grading and measurement as well as no immediate payment. It is indicated that the respondents had constraints in almost all aspects of marketing as mentioned in the table. However, the respondents had more of constraints on no immediate payment, exploitation of traders and businessman, no liaisoning for immediate disposal of the produce, no reasonable minimum support price, not guiding to collect market information taking into account of means core value. It is therefore suggested that officials of the state department of Agriculture

havetoanalysealltheseconstraintsandtakefeasiblestepstominimizetheseconstraints, enabling therespondents to dispose oftheproducewithbetterprices.

Table-8:Constraintsfacedby the Groundnut growers regardingmarketing activities (n=120)

Sl.no	Constraint	Strongly agree	Agree	Disagree	Mean score	Rank
i)	No idea about marketinginformation	0	67	53	1.55	VIII
ii)	Notguidingto collectmarket Information	62	42	16	2.38	V
iii)	No reasonable minimum supportprice	65	49	6	2.49	II
iv)	Notliaisoningfor immediate disposalofthe produce	78	38	4	2.62	I
v)	No co-operative system in Procurement	29	71	20	2.07	VII
vi)	Exploitationbythetraders& Businessmen	71	33	16	2.47	III
vii)	Nottransparencyingrading& Measurement	39	62	19	2.16	VI
viii)	Noimmediatepayment	56	64	0	2.46	IV

(Maximumobtainablescore-3)

Similar studies identified the following problems of groundnut productivity - lack of better varieties, lack of agricultural credit, a lack of production tools, high seed and fertiliser prices, drought, and disease [9]. Other groundnut production constraints included poor soil fertility, a lack of access to improved seed, pre-harvest diseases, the use of low yielding varieties, insufficient access to extension services, limited access to credit, and a scarcity of improved varieties. Farmers chose qualities such as high shelled yield, early maturation, drought tolerance, market value, good seed quality, flexibility to local growing conditions, and disease resistance [10].

4. CONCLUSION

Balasore district of Odisha has great potential in groundnut cultivation. The farmers have also affinity to grow groundnut for better income generation. However, the productivity of the groundnut has been deteriorating year after year. It indicates that the farmers are facing in convincing on various aspects of crop raising including harvesting and marketing. Hence the extension functionaries involved in promotion of groundnut cultivation including administrators and executives must take all possible steps

to solve all these deficiencies, for the betterment of the groundnut growers. The study may be conducted in larger area involving a greater number of farmers from other blocks of the district for developing strategic action plan for better production and productivity. The study may be extended to other groundnut districts of the state to develop need-based action plan for the betterment of farmers in particularly groundnut growers in the state. Some specific research particularly on varietal replacement, cultural practices, diseases and pests' management and marketing may be undertaken to develop strategic action Plan for promotion of groundnut cultivation in Odisha. Research may be carried on group organization, leadership development and flow of information timely for effective monitoring and supervision.

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