Enhancing Groundnut Productivity in Anantapur District, Andhra Pradesh: Identifying Constraints and Developing Adaptation Strategies

ABSTRACT

India is a world leader in groundnut farming. A purposive and random sampling technique was used for the study and conducted in KVK operated mandals of Anantapur and Satya Sai district. Ten mandals of KVK operational area were selected purposively where Cluster Front-Line Demonstrations were conducted and from each mandal 2 villages were selected purposively by KVK. Eight farmers from each village were selected randomly, thus making a total of 160 respondents for this study. An *ex-post facto* research design was used and the data were collected by interview method and enquired about the constraints faced by them for low groundnut productivity and queried suggestions to overcome the constraints faced by them. From the study, it was revealed that major constraints of the farmers faced were uncertainty in rainfall during crop growth period (96.25) followed by lack of irrigation facility (92.5 %), shortage of labour during critical stages (88.75%), low production due to pest and disease infestation (87.5%) and non-availability of appropriate market price (86.25) as reported by the farmers. Among the suggestions offered by farmers it was the supply of inputs at subsidized rate (76.25 %) ranked first followed by remunerative price should be made available to the groundnut farmers during drought years (75.0 %) ranked second and irrigation facilities should be made available (72.5%) ranked third.

Keywords: Constraints, Suggestions, Productivity, Technology

INTRODUCTION

Groundnut (Arachis hypogaea L.) is a major food and oilseed crop grown and consumed globally. Because of its high protein content, it is commonly regarded as a wonderful source of sustenance for both humans and animals. According to the FAO data, globally, groundnut covers 327 lakh hectares area with the production of 539 lakh tonnes with the productivity of 1648 kg per hectare [1]. The groundnut area, productivity and production over the last five years in the major Indian groundnut-growing states show that eighty-seven percent of the groundnut area and eighty-five percent of the production are split among six states: Gujarat, Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra, and Rajasthan. Gujarat and Andhra Pradesh account for around 33% and 16%, respectively, of total groundnut area. Over the course of the previous five years, Gujarat has averaged roughly 40% of production and 9.3% by Andhra Pradesh [2]. In Andhra Pradesh, It is mostly grown in Rayalaseema districts of Anantapur, Kadapa, Kurnool, and Chittoor, followed by coastal areas (Nellore, Guntur, Prakasam districts). In Andhra Pradesh, Anantapur district has the largest groundnut output and area, with 3.44 lakh tons and 4.09 lakh ha, respectively, followed by Chittoor and Kurnool.

Groundnut productivity is highest in the Nellore district, with 4072 kg/hectare. Because the line proportion of area under agriculture (61.87%) in Anantapur district has a low productivity (841 kg/ha) compared to the state productivity of 1285 kg/ha [3].The low productivity of was due to several constraints that farmers encounter. The constraints include low, inconsistent rainfall, sometimes with midseason drought, poor irrigation facilities, diminishing soil fertility due to poor crop management, low nutrient application, insufficient support services such as extension and credit facilities, pests and diseases etc. Therefore, it was thought necessary to identify the main causes of the low productivity in farmers' fields. Keeping these facts in mind, the present study was undertaken done to learn about the constraints faced by groundnut growers in Anantapur district and to seek suggestions from the groundnut farmers to overcome the constraints faced by them.

MATERIALS AND METHODS

The study was carried out in Anantapur district which comes under scarce rainfall zone of Andhra Pradesh. Ten mandals of KVK operated area were selected purposively where Cluster front-line demonstrations were conducted and from each mandal 2 villages were selected purposively by KVK. Eight farmers from each village were selected randomly, thus making a total of 160 respondents for this study. An *ex-post facto* research design was used and the data were collected by interview method (Online/Offline) and enquired about the constraints faced by them for low groundnut productivity and suggestions required to overcome those constraints. Data was collected from selected farmers utilizing a pre-tested standardized questionnaire administered via personal interviews. The surveys were pre-tested on a group of farmers from the study area. Data collection ran from December 20 to December 31, 2023. This was done with 20 farmers at a time in each mandal, with programme assistants at KVK supporting the process and assisting illiterate farmers. The collected data were classified, tabulated and analyzed by using statistical measures such as frequency, percentage and mean score. Rank was also provided under various constraints and suggestions on the basis of the percentage and the data was tabulated, analyzed and conclusions were drawn keeping objectives of the study in mind.

RESULTS AND DISCUSSIONS

Constrains faced by the groundnut growers

Groundnut productivity in the study area was limited by various constraints and the adoption of Improved Groundnut production Technology was evaluated on fifteen criteria. Table 1 demonstrates uncertainty in weather conditions, viz. Rainfall (96.25) was recognised as a major constraint with great intensity by groundnut farmers, as evidenced by their first rank, followed by lack of irrigation facility (92.5 %) ranked II, Shortage of labour during critical stages (88.75%) ranked III, low production due to pest and disease infestation (87.5%) ranked IV, non-availability of appropriate market price (86.25) ranked V, high wages of labour (83.75) ranked VI, non-availability of finance at a time/Lack of credit

facility (82.5) ranked VII, high cost of improved HYV (77.5) ranked VIII, high price of herbicide/fungicide/Pesticide (70) ranked IX, lack of knowledge about critical stages (63.75) ranked X, high price of chemical fertilizer (58.75) ranked XI, lack of improved implements (57.5) ranked XII, high cost of machinery (53.75) ranked XIII, lack of timely and appropriate extension services (52.5) ranked XIV and less availability of seed (51.25) ranked XV. Because of the aforementioned constraints majority of farmers in the district are unable to get adequate productivity from the groundnut crop in the district. Pandya *et al* [4] and Minde *et al* [5] both found that groundnut yields are low, with the primary reason being irregular, inadequate and unevenly distribution of rainfall during the crop growth period.Similar findings of constraints for low productivity and adaption of recommended crop technology were also reported by Priya *et al* [6], Khuvung *et al* [7] and Rao *et al* [8].

Suggestions from the respondents to overcome constraints faced by them

The suggestion is an opinion regarding constraints that can be used as a method to reduce or eliminate them. The respondents' comments are crucial to develop a reliable extension strategy in order to increase groundnut productivity. The constraints they encounter can occasionally be imagined, while other times they result from a lack of coordination across many levels. As a result, in this study, all farmers were asked to provide valuable suggestions to overcome the constraints. The data presented in Table 2 indicated that out of all ten suggestions offered by farmers, the most important suggestion offered was that inputs should be made available at subsidized rate (76.25 %) ranked first followed by remunerative price should be made available to the groundnut growers for their products during drought years (75.0 %)got second rank, irrigation facilities should be made available (72.5%) ranked third, development of effective moisture conservation technologies (65%) ranked fourth and information on plant protection measures (63.75 %) ranked fifth, Implements for deep ploughing and moisture conservation should be made accessible at ground level (61.25 %) ranked sixth, Information on use of biofertilizers and biopesticides should be provided (56.25 %) ranked seventh, Sufficient and timely credit facility should be made available (53.75 %) ranked eight, Literatures on conservation practices of agriculture should be made available to the farmers (50.0 %) ranked ninth, Training on management of problematic soils for groundnut farmers (40.0 %) ranked tenth. Similar suggestions for improving productivity and adopting of crop technologies were also reported by Jaydip *et al* [9], Raviya *et al* [10], Usaha *et al* [11] and Jalu *et al* [12]

CONCLUSION

From the above study it can be concluded that out of all constraints reported by the respondents, uncertainty in rainfall during crop growth period, lack of irrigation facility, Shortage of labour during critical stages were top three major constraints for low productivity in groundnut. , whereas in case of suggestions, supply of inputs at subsidized rate, remunerative price for groundnut farmers during drought years and irrigation facilities should be made available were top three most important suggestions among farmers.

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Table 1: Distribution of groundnut farmers based on their constraints

S. No	Constraints	No.	Percent	Rank
1	High cost of improved HYV	124	77.5	VIII
2	Less Availability of seed	82	51.25	XV
3	Uncertainty weather conditions (rainfall)	154	96.25	I
4	Lack of improved implements	92	57.5	XII
5	High price of herbicide/fungicide/Pesticide	112	70	IX
6	High price of chemical fertilizer	94	58.75	XI
7	Lack of knowledge about critical stages	102	63.75	X
8	Lack of irrigation water	148	92.5	II
9	High wages of labour	134	83.75	VI
10	Shortage of labour during critical stages	142	88.75	III
11	Lack of timely and appropriate extension services	84	52.5	XIV
12	Low production due to pest and disease infestation	140	87.5	IV
13	Non-availability of finance at a time/Lack of credit Facility	132	82.5	VII
14	Non-availability of appropriate market price on farm Produce	138	86.25	V
15	High cost of machinery	86	53.75	XIII

Table 2: Farmers suggestions for overcoming constraints

S. No	Suggestion	No.	Percent	Rank
1	Inputs should be provided at subsidised rates	122	76.25	I
2	Remunerative prices for groundnut should be provided during drought years	120	75	II
3	Irrigation facilities should be made available	116	72.5	III
4	Effective soil moisture conservation technology should be developed	104	65	IV
5	Information about plant protection measures should be given to groundnut farmers	102	63.75	V
6	Implements for deep ploughing and moisture conservation should be made accessible at ground level	98	61.25	VI
7	Information on use of biofertilizers and biopesticides should be provided	90	56.25	VII
8	Sufficient and timely credit facility should be made available	86	53.75	VIII
9	Literatures on conservation practices of agriculture should be made available to the farmers	80	50	IX
10	Training on management of problematic soils for groundnut farmers	64	40	X