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Perception of farmers for groundnut seed in Porbandar district of Gujarat

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Abstract

Groundnut crop in Gujarat has its own significance in production front and it achieves first position across the states. Even in Gujarat, districts like Rajkot (13.16%), Junagadh (12.52%), Jamnagar (10.66%), and Devbhoomi Dwarika (10.40%) shared more than 50 percent of the area in groundnut cultivation. Here, in this study, Porbander district was taken to understand the issues of groundnut cultivation, seed use practices and problems intricate in the particular areas from production to marketing crop. The district has very minimal share in ground nut area of cultivation and production as well. To tap the issues, 240 producers were interviewed with a structured schedule through purposive sampling. It was observed that unavailability of quality certified seeds, labour shortage, trade deformation are some of the issues in groundnut cultivation in the particular area. It is suggested to avail quality seeds through various means followed by support of mechanization and infrastructural development in groundnut cultivation will definitely harness better production scenario in groundnut.

Keywords: Groundnut, certified seed, Labour, Unavailability

Introduction

During the first half of the 16th century, groundnut was introduced in India. Over the time, groundnut production escalated from 0.39 million tons to 9.95 million tons during the corresponding periods, with a record high of 6.80 million metric tons in 2021-22 (<https://apps.fas.usda.gov/psdonline/circulars/production.pdf>). Increased population size not only impact on available land resources but also influence future agricultural production of the country. To counteract the issues, it is high time to go for quality seed ^[1] in ground nut by which our country will be self-sufficient in oil seed requirement. India has a great say in world market in ground nut production and consumption as well. In both the categories, country stands first with 6.80 million metric tons of production in 2021-22 coming from 5.6 million hectares of land (<https://apps.fas.usda.gov/psdonline/circulars/production.pdf>). Among the states, Gujarat stands first in groundnut production, contributing 40.35 percent of the total production with 4143.60 thousand tonnes in the year 2020-21. Gujarat also has the highest cultivation area for groundnut, covering 2162.90 thousand hectares. While Rajkot districts of Gujarat shared maximum area in ground nut production (13.16%) in the same time, Jamnagar district has the major share in production (13.12%) in ground nut crop in the state. Porbander district of the state contributes very less in area (4.36%) and production of groundnut (2.93%) with a yield of 1277 Kg/ha in the state (<http://dag.Gujarat.gov.in>), but an area of exposure for different certified organizations of groundnut seed for establishing their venture for escalating groundnut crop in lesser producing areas. After discussion with the producers, it was also come into picture that seed replacement ratio is quite higher in Porbander district than other ground nut producing districts like Rajkot and Jamnagar. Even, land holding capacity of Porbander is comparatively higher than the major producing districts of Gujarat. That is the cause; this study was conceptualized in the particular districts for a detailed and in depth study. With this back drop, a detailed case report was tried to develop in the Porbander district of Gujarat to understand about socio economic profiles and constraints faced by producers during their production practices in the study area. Even, to fulfill the product penetration status and strategy, different certified varieties of groundnut were considered to understand their beneficial effects among the producers in comparison to locally available nondescript seeds.

¹ Quality seeds have the potentiality to increase 15-20% of increase in crop yield in ground nut.

Materials and Methods

It was tried to get the responses from 240 farmers of the Porbandar district, Gujarat for understanding their groundnut crop practices, constraint faced by them and their behavior towards certified seeds vis-a vis locally available non-descript seeds. To achieve the predetermined objectives of the study, a comprehensive approach was adopted by utilizing both primary and secondary data sources. The primary data were collected through a structured schedule in an interview method. In order to effectively address the study's intended objectives, several analytical techniques were employed, including tabular analysis, Likert scale evaluation, factor analysis, and Garrett's ranking methodology. By combining these methods, a thorough and rigorous analysis was performed while ensuring the integrity and accuracy of the study's findings.

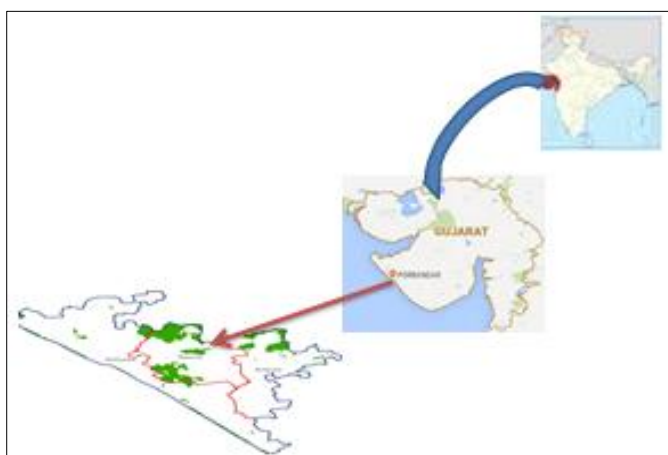


Fig 1: Study area in Groundnut

Results and Discussion

The socio-economic study considered several key factors to examine the research objectives. These factors included age, education level, farming experience, landholding size, marital status, annual income, sources of income, and sources of irrigation (Desai *et al.*, 2019 & Nnaji *et al.*, 2020) [2, 8]. Perusal glance of the table 1 highlighted that majority of the respondents were in the age bracket of 25-35 years (43.33%) followed by 35-45 years (25.83%). It could be inferred from the responses that around 70 percent were in the age group bracket of 25-45 years, could be due to lucrative crop, the ground is, that attracts major chunk of producers to this categories of production. Education wise respondents were almost equally dispersed though only 5 percent were found in the post graduate level, may be due to primary source of income was the ground nut in the study area. Even, it also indicates education and crop production has not so much connected for the ground nut crop in the study area was concerned. It was observed that almost 50 percent of respondents were in the less than 10 years of experiences. It gives a signal that many new entrants are coming or doing crop production in groundnut, might be due to cash crop nature of the enterprise is in the study area. More than 60 percent of the respondents were having land holding capacity 5 to 10 acres in land. It indicates, more land is putting in this crop or land holding capacity of the farmers was quite good in

the study area. It was seen that around 70 percent were married in the study area. As groundnut is a cash crop in itself, annual income from the crop is also reflecting in that direction. It was observed that about 43 percent were getting income within ₹5-10 lakh and around 17 percent were getting more than ₹10 lakhs from the crop. This income comes both from the groundnut (agriculture) and livestock both at a time. The method of irrigation for the particular crop was the tube well (57.50%) in the study area.

Table 1: Socio economic profiles of groundnut farmers in Porbandar District of Gujarat

| | Parameter | Frequency | Percentage (%) |
|-----------------------|--------------------------------|-----------|----------------|
| Age | <25 Years | 44 | 18.33 |
| | 25 - 35 years | 104 | 43.33 |
| | 35 - 45 years | 62 | 25.83 |
| | 45 - 55 years | 24 | 10.00 |
| | 55 - 65 years | 4 | 1.67 |
| | above 65 years | 2 | 0.83 |
| Educational Status | Below SSC | 60 | 25.00 |
| | SSC | 60 | 25.00 |
| | HSC | 48 | 20.00 |
| | Graduate | 60 | 25.00 |
| | Post Graduate | 12 | 5.00 |
| Experience in Farming | <5 years | 44 | 18.33 |
| | 5 - 10 years | 76 | 31.67 |
| | 10 - 15 Years | 52 | 21.67 |
| | >15 years | 68 | 28.33 |
| Land Holding | 0-5 acre | 42 | 17.50 |
| | 5 to 15 acres | 152 | 63.33 |
| | 15 or more acre | 46 | 19.17 |
| Marital Status | Unmarried | 74 | 30.83 |
| | Married | 166 | 69.17 |
| Annual Income | <1 lakh | 19 | 7.92 |
| | 1 - 5 lakh | 77 | 32.08 |
| | 5 - 10 lakh | 104 | 43.33 |
| | >10 lakh | 40 | 16.67 |
| Source of Income | Agriculture | 38 | 15.83 |
| | Livestock | 0 | 0.00 |
| | Agriculture and Livestock | 130 | 54.17 |
| | Agriculture and other Business | 72 | 30.00 |
| Source of Irrigation | Tube well | 138 | 57.50 |
| | Canals | 5 | 2.08 |
| | Wells | 89 | 37.08 |
| | Others | 8 | 3.33 |

To understand the varieties sold in the particular area, a detailed farmers' perception was carried out in the study area. Perusal from the table 2, it was observed that majorly farmers' have the say that certified seeds were better over local varieties but poor availability make them use the local varieties of seeds of ground nut than certified one. In every aspect like., required spray, price, quality, pods per plant, and weight, the certified seeds were better over local varieties of seeds in ground nut. These variables of the study was taken from the study undertaken by Kumar *et al.* (2008) [5] and Mehmood *et al.* (2021) [7] in different parts of the research work. Primary statements of producers were more in the line of poor availability of better quality certified seeds created issues in production practices.

Table 2: Perception of certified varieties over local varieties of ground nut

| Parameters | S.D. (1) | D (2) | N (3) | A (4) | S.A. (5) | Total | Mean |
|--|----------|-------|-------|-------|----------|-------|------|
| Available certified seed varieties is better than other local varieties | 4 | 16 | 92 | 112 | 16 | 240 | 4.67 |
| Certified seed varieties required less number of spray than other local varieties | 12 | 40 | 132 | 44 | 12 | 240 | 4.02 |
| Certified seed varieties price less than other local varieties | 12 | 20 | 48 | 128 | 32 | 240 | 4.82 |
| Quality of certified seed better than other local varieties | 8 | 24 | 52 | 114 | 42 | 240 | 4.88 |
| Numbers of pods per plant from certified varieties are more than other local varieties | 24 | 48 | 76 | 68 | 24 | 240 | 4.11 |
| Certified Seed varieties weight is more than other local varieties | 8 | 36 | 156 | 32 | 8 | 240 | 3.98 |

S.D.= Strongly Disagree, D= Disagree, N= Neutral, A= Agree, S.A.= Strongly Agree

When constraints were tried to capture at the farmers’ level in ground nut cultivation, it was asked in three grounds from input based constraints to production and marketing one. Yes, farmers have very poor knowledge regarding recommended seed rate for groundnut cultivation (table 3) followed by unavailability in the study area.

Table 3: Input based constraints for groundnut cultivation

| Sr. no | Input oriented factor | Percent | Garrett score | Rank |
|--------|---|---------|---------------|------|
| 1 | Lack of knowledge about recommended seed rate | 64 | 75 | 1 |
| 2 | Difficulty in getting improved seed | 56 | 60 | 2 |
| 3 | Lack of short duration variety | 44 | 50 | 3 |
| 4 | High cost of seed | 43 | 40 | 4 |
| 5 | Poor quality of seed | 42 | 24 | 5 |

That made the farmers to depend on local varieties which were short duration, high cost, and poor in quality in comparison to better certified varieties of groundnut. These variables of the study were undertaken by Abady *et al.* (2019) [1] and Markana *et al.* (2015) [6] in different times of the research work.

Perusal of the table 4 highlighted that labour was a major issues in the production of ground nut. Many reasons might be there from cost of labour to availability of labour which is very much pertinent in other crops as well in agricultural sector. Changing climate () followed by poor agronomic practices, ill irrigation and disease attack were also other areas of worry in groundnut cultivation in the particular area. These variables of the study was derived by the study taken by Daudi *et al.* (2018) [3] and Shasani *et al.* (2020) [9] in different parts of the research work.

Table 4: Production constraints for groundnut cultivation

| Sr. no | Production oriented factor | Percent | Garrett score | Rank |
|--------|----------------------------|---------|---------------|------|
| 1 | Labour shortage | 59 | 75 | 1 |
| 2 | Climate Change | 57 | 60 | 2 |
| 3 | Poor Agronomical practices | 45 | 50 | 3 |
| 4 | Ill Irrigation facility | 44 | 40 | 4 |
| 5 | Disease attack | 43 | 24 | 5 |

Perusal of table 5 highlighted that due to lack of infrastructure, producers many times sold the crop to the local dealers instead of APMC, which was inaccessible (technology and distance wise) for the farmers. As a result, farmers got substantially less price for their produce. Even, poor quality of produce due to spurious seed practices also made the crop output improper one for the APMC market. This way, there was observed a trade manipulation environment in the study area. These variables of the study were taken from the research done by Jalu *et al.* (2022) [4] in his research work.

Table 5: Marketing constraints in groundnut cultivation

| Sr. no | Marketing oriented factor | Percent | Garrett score | Rank |
|--------|----------------------------|---------|---------------|------|
| 1 | Trade manipulation | 57 | 75 | 1 |
| 2 | Storage | 54 | 60 | 2 |
| 3 | Transportation | 50 | 50 | 3 |
| 4 | Packaging | 46 | 40 | 4 |
| 5 | Lack of market information | 41 | 24 | 5 |

Conclusion

Porbander district has a probable good market for the groundnut certified seeds as farmers’ have better land holding capacity and new entrants to the particular crop has created as a positive scenario for the crop. There is a good demand for the certified seeds in the particular area but unavailability of them makes the producers’ use spurious seed in the crop production practices. As a result, producers could not reap better output (quality and quantity) from the crop itself. Labour shortage in the study area may be counteracting through mechanisation or through third party labour management practices. Trade manipulations followed by poor infrastructure are also other hindrances in groundnut crop disposal in the study area.

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