Technological Gap Analysis in Adoption of Groundnut-Pigeonpea Inter-Relay Cropping System

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ABSTRACT

A study was conducted in South Saurashtra agro climatic zone of Gujarat state, to identify the technological gaps in adoption of groundnut pigeon-pea inter relay cropping production technology. The ex-post-facto research design was used for the study.The size of the sample was 120 respondents which were purposively selected from four villages namely MotimaradandPipliya from Dhorajitaluka of Rajkot district, and Datrana, Nagalpur from Mendradataluka of Junagadh district. The result of study shows that in case of overall technological gap, 65 per cent of farmers had medium technological gap followed by 18.33 per cent and 16.67 per centhad high and low technological gap about groundnut-pigeonpeacultivation technology, respectively. Whereas practice wise technology gap among various recommended technologies,there were high technological gap in plant protection (63.25%) followed by seed rate (47.73%), weed management (45.43%), irrigation (42.12%), sowing distance (35.38%), chemical fertilizers (32.50%), inter-culture (31.15%),gap filling (24.86%) and improved variety (23.33%). Further, limited of knowledge, lack of technical knowhow, non-availabilityof good quality of inputs at right time, sub-standard and costly chemical fertilizers and pesticides,lack of purchasing power, fear of crop loss etc were expressed as reasons for technological gap in adoptionof groundnut- pigeonpeacultivation practices.

Keywords : *Technological gap, Groundnut growers, Inter relay cropping system*

INTRODUCTION

Agriculture has been a part of human life since the beginning of the human race and the need for agricultural information is probably almost as old as agriculture itself. Production of new technology is not the major problem now a day in our country. The agricultural scientists are capable of producing appropriate technology. The main problems as it exist today is that of diffusion and adoption of new farm technology among the farmers. Diffusion of knowledge is relatively an easy task.Getting people to understand, accept and apply is the difficult one.

Pulses have its characteristics like soil ameliorative properties and nitrogen fixing ability play an important role in sustaining soil health and water management. Its neglect in the cropping system has not only lead to soil sickness and break down in the sustainability of the production system but also lead to progressive decline in the productivity. Efforts are therefore needed to reintroduce pulses in cropping system to maintain sustainability of production system. Relay cropping system is a common practice in the low level equilibrium farmers to insulate their investments against adversities of nature. The groundnut-pigeonpea inter-relay cropping system has been introduced through front line demonstration programmes from 1991-1992.This system proved that the relay Pigeonpea did not reduce the yield of groundnut. Encouraging results have popularized this system among the farmers of Saurashtra region where the main kharif crop is groundnut. The South Saurashtra Zone of Gujarat is characterized by the drought prone area where the monsoon is irregular, uneven and erratic in nature. The sole crops are not always secure so far as the production is concerned. Hence, the study was undertaken with the following specific objectives:

OBJECTIVES

(i) To study the overall extent of technological gap in groundnut-pigeonpea inter-relay cropping system.

(ii) To study the practice wise technological gap in

groundnut-pigeonpea inter-relay cropping system.

METHODOLOGY

The study was conducted in South Saurashtra agro climatic zone of Gujarat statewithex-post facto research design.The South Saurashtra agro climatic Zone is consisted of 25 talukas of four districts of the state having common agro-climatic conditions. Out of four districts, Rajkot and Junagadh were selected purposively,where the groundnut-pigeonpea inter-relay cropping system has already been adopted by the farmers/demonstrations organized by the Pulse Research Station, Junagadh. From the two districts, one taluka from each district was selected for the study. From each selected taluka, two villages Motimarad andPipliya from Dhorajitaluka of Rajkot district, and Datrana, Nagalpur from Mendradataluka of Junagadh districtwere selected by random sampling method. Thus, the total numbers of four villages were selected for the study.Totalnumbers of 120 farmers, 30 farmers from each selected village were selected by using purposive random sampling technique with a condition that the farmers have adopted this cropping system at least since last two years.The data were collected through specially developed interview schedules.

To ascertain the practice wise technological gap in improved groundnut pigeon pea inter relay crop production technology by the respondents, the improved practices were grouped under 13 major practices and practice wise score was assigned, making a total of 100. On the basis of the practice wise scores obtained by the respondents in adopting a particular practice, the mean score were worked out for all the practices. These mean scores were again converted into percentage for all the 13 practices and then difference between adoption and the recommended score for each practice in percentage were considered as technological gap of the recommended technology. On the basis of percent technological gap ranks were assigned to each practice.

RESULTS AND DISCUSSION

Overall Technological gap

Table 1: Distribution of respondents according to their overall technological gap n=120

Sr. No.	Category	No.	Per cent
1	Low technological gap (up to 17.81)	20	16.67
2	Medium technological gap (17.82 to 47.03)	78	65.00
3	High technological gap (above 47.03)	22	18.33

Mean=32.42 S.D.=14.61

The result of the Table 1 stated that nearly two third (65.00 per cent) of respondents possessed medium level of technological gap in groundnut - pigeonpea crop production technology followed by high (18.33 per cent) and low (16.67 per cent) technological gap in groundnut-pigeonpea crop production technology, respectively.

Therefore, it is clearly revealed from the findings of this study that skill required technologies are less adopted by the farmers, however adoption of easy and low cost technologies is higher, which might be the proper reason of observed findings.

Practice wise Technological gap

The result from the Table 2 shows that highest technological gap were found in plant protection measures followed by seed rate, weed management, irrigation, sowing distance and chemical fertilizers got first, second, third , fourth, fifth and sixth ranked, respectively.

The probable reason for these finding might be that they had poor technical guidance as well as lack of proper knowledge about importance of plant protection measuresin groundnut Pigeon pea inter relay cultivation for higher production. Besides, the high cost of insecticides might be one of the reasons for high technological gap. In case of seed rate, about half of the respondents used seed rate as per the recommendation. The fear of poor seed germination may cause to use high seed rate as compared to recommendations. It might be also one of the reasons that according to the availability of irrigation facility they were keeping such type of the seed rate.

Table 2 : Groundnut Pigeon pea inter relay grower practice wise extent of technological gap n=120

Sr. No.	Name of the practices	Total score (100)	Mean score obtained	Adoption per cent	Technological gap Per cent	Rank
1	Improved variety	15.00	11.50	76.67	23.33	IX
2	Seed treatment	04.64	03.65	78.66	21.34	X
3	Organic manure(FYM)	05.57	04.40	78.99	21.11	XI
4	Chemical fertilizers	07.60	05.13	67.50	32.50	VI
5	Seed rate	06.93	03.83	52.27	47.73	II
6	Sowing time	10.40	08.42	80.96	19.04	XII
7	Gap filling	05.27	03.96	75.14	24.86	VIII
8	Sowing distance	06.87	04.44	64.62	35.38	V
9	Inter-culture	05.33	03.67	68.85	31.15	VII
10	Weed management	07.33	04.00	54.57	45.43	III
11	Irrigation	11.23	06.50	57.88	42.12	IV
12	Plant protection	08.73	03.20	36.65	63.35	I
13	Harvesting/Threshing	05.07	04.88	96.25	03.75	XIII

Farmers were also very cautious about weed free field. Almost all the respondents' preferred hand weeding only as compared to weedicides application. The hand weeding was also a cheaper as well as an effective operation in the area of study as compared to chemical weed control. The village co-operative/banks finance awareness about chemical fertilizers and high price of chemical fertilizers, as a result they could use the same fertilizers as per the recommendations. The respondents had poor knowledge about importance of irrigation schedule in groundnut Pigeonpea inter relay cultivation for higher production. Besides this, the farmers did not have sufficient irrigation facility.

Whereas less technological gap were observed in improved variety (23.33 per cent) followed by seed treatment (21.34 per cent), organic manure(FYM) (21.11 per cent), sowing time (19.04 per cent) and harvesting/Threshing (3.75 per cent) got 9th, 10th, 11th, 12th and 13th ranked, respectively.

CONCLUSION

It can be concluded that nearly two third of the groundnut-pigeonpea inter-relay crop growers(65.00 per cent)were fell in the category of medium technological gapin groundnut-pigeonpea crop production technology. The technological gap was found very high in practices namely, plant protection measures (63.35 per cent) followed by seed rate (47.73 per cent), weed management (45.43 per cent), irrigation (42.12 per cent), sowing distance (35.38) and chemical fertilizers (32.50 per cent) got first, second, third, fourth, fifth and sixth ranked, respectively. This might be due to the facts that farmers do not possess proper knowledge about the recommended plant protection measures, sowing rate/doses of seed, doses of weedicide, organic manure,critical stages of irrigation and sowing distance. They were using more or less the recommended rate/dose of these practices.

Therefore, it is clearly revealed from the findings of this study that skill required technologies are less adopted by the farmers, however adoption of easy and low cost technologies is higher, which might be the proper reason of observed findings.

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