
ORIGINAL ARTICLE

Adoption level of Sesamum growers about Sesamum cultivation practices

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ABSTRACT

This study was carried out in Anand and Kheda districts of middle Gujarat to study the adoption level of sesamum growers about sesamum cultivation practices and the study revealed that more than half (58.00 per cent) of sesamum growers had adopted improved varieties recommended by SAU's. Slightly more than half (54.00 per cent) of respondents had adopted recommended cultural practices whereas only 26.50 per cent sesamum growers had adopted fertilizer application practices as per recommendation. More than half (60.00 per cent) of respondent farmers adopted recommended weed management practices while only 41.00 per cent of respondents had adopted recommended plant protection measures. Nearly two third (66.00 per cent) of respondents had adopted recommended number of irrigation. Lack of knowledge about improved production practices (84.00 per cent), scarcity of labours (79.00 per cent) and high cost of improved production inputs (76.00 per cent) were major constraints in adoption of sesamum cultivation practices as perceived by sesamum growers.

KEY WORDS: Adoption, Sesamum, Grower, Recommendation and Cultivation

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INTRODUCTION

Sesamum (*Sesamum indicum*), a flowering plant in the genus Sesamum, is considered one of the oldest oilseed crops, domesticating well over 3000 years ago. History evidences that thousands of years ago, in the Middle East, indigenous residents discovered the use and benefits of sesamum oil, making it a major summer crop ever since. It is widely naturalized in tropical regions around the world and is cultivated for its edible seeds, which grow in pods. It is also a robust crop that can be grown in various abiotic stress conditions (http://en.wikipedia.org/wiki/Sesamum#_Origins). Sesamum is highly beneficial as it contains 42-50% oil and the oil contains 42% essential linoleic acid, 25% protein and 16-18% carbohydrate. Moreover, premium quality edible and medicinal oil can be extracted from sesamum, which can be conserved for a long time. Sesamum oilcake is good feed for poultry, fish, cattle, goat and sheep [2]. Unfortunately, the major obstacle to sesamum expansion is low seed yield which results due to lack of non-shattering, water logged, and disease & insect resistant variety [5].

Due to high competition among different high valued crops over the years, the acreage and production of sesamum have dramatically decreased. Adoption information on improved sesamum varieties is very sporadic. Raikwar and Srivastva [3] conducted a study on productivity enhancement of sesamum through improved production technologies in Madhya Pradesh, India. The study revealed that the improved sesamum variety produced a mean yield of 5.34 q/ha which was 34% higher than farmers practice yield of 3.45 q/ha. The improved variety resulted higher mean net income of Rs.12914/ha as compared to local practice (7740/ha). With the financial and technical support of the Krishi Gobeshona Foundation (KGF), Akbar [1] conducted a study at Manikgonj and Faridpur district on the adoption of modern rapeseed and sesamum varieties with improved production technology for minimizing yield gap. The study revealed that improved variety BINA Til-1 produced 83% higher yield (1456 kg/ha), while BARI Til-3 produced

56% higher yield (1244 kg/ha) compared to local check (793 kg/ha). Again, BARI Til-4 produced the yield of 1536 kg/ha which appeared to be as 93% higher in yield compared to check variety. Salam *et al.* [4] assessed the status of adoption and estimated the profitability of sesamum production in Jessore and Kushtia districts. Agronomic practices like method of land preparation, time of seed sowing, disease and pest control measures were highly adopted at farm level. The estimated net returns of Tk. 13947 and Tk.6211 per hectare was for improved and local variety respectively. So, it is clear from the above discussion that in depth studies on improved sesamum adoption are quite absent in the past. The adoption of improved sesamum technologies at farm level is very essential as it will benefit our farmers in receiving higher yield and income. Policy makers, extension personnel, NGOs, and concerned scientists of our country can formulate appropriate policy using up-to-date adoption information for developing the crop throughout the country which will later be beneficial to the sesamum farmers. Therefore, the present study was undertaken to:

1. To study the adoption level of sesamum growers about sesamum cultivation practices
2. To find out the constraints in adoption of sesamum cultivation practices as perceived by sesamum growers

MATERIAL AND METHODS

The present investigation was being carried out in Anand and Kheda districts of Gujarat state. Three talukas of Kheda district i.e. Mahemdabad, Kathlal and Kapadvanj whereas two talukas of Anand district i.e. Borsad and Petlad were purposively selected. Among the selected four talukas, four villages were selected randomly from each talukas. Among the selected villages, five sesamum growers from each village were selected randomly. Thus, total 100 sesamum growers were selected for the study. The questionnaire was prepared in accordance with the objectives. The data were collected personally, tabulated, analyzed and interpreted with frequency and percentage.

RESULTS AND DISCUSSION

Table: 1 Adoption of recommended sesamum production technology [n=100]

Sr. No.	Particulars	Adoption	
		Frequency	Per cent
1	Improved varieties		
	Recommended by SAU	58	58.00
	Research Varieties	42	42.00
2	Seed rate		
	As per recommendation	58	58.00
	Above recommendation	22	22.00
	Below recommendation	20	20.00
3	Time of sowing		
	Timely sowing	60	60.00
	Early sowing	26	26.00
	Late sowing	14	14.00
4	Sowing Distance		
	As per recommendation	44	44.00
	Above recommendation	38	38.00
	Below recommendation	18	18.00
5	Fertilizers		
A	Basal application		
a	Organic Manure		
	Not adopted	68	68.00
	As per recommendation	12	12.00
	Below recommendation	20	20.00
b	Nitrogen		
	As per recommendation	32	32.00
	Below recommendation	22	22.00
	Above recommendation	46	46.00
c	Phosphorus		
	As per recommendation	26	26.00

	Below recommendation	26	26.00
	Above recommendation	48	48.00
B	Top Dressing		
	Nitrogen		
	As per recommendation	36	36.00
	Below recommendation	20	20.00
	Above recommendation	44	44.00
6	Weed management		
	Manual	74	74.00
	Chemical	46	46.00
	Pendimethalin @1.0 kg/ha or Alachlor @ 1.5 kg/ha		
7	Insect /Disease Management		
	1. Sphinx Moth		
	Methyl parathion 2% @ 20 kg/ha.		
	As per recommendation	28	28.00
	Below recommendation	18	18.00
	Above recommendation	54	54.00
8	2.Sesamum Gall Fly		
	Quinalphos @ 10 ml/10 liter water		
	As per recommendation	44	44.00
	Below recommendation	18	18.00
	Above recommendation	38	38.00
9	1. Leaf Spot		
	Carbendazim 5 gm/ 10 liter water		
	As per recommendation	60	60.00
	Below recommendation	12	12.00
	Above recommendation	28	28.00
	2. Sesamum Phyllody		
	Oxytetracyclin 250 gm/ liter water		
	As per recommendation	32	32.00
	Below recommendation	24	24.00
	Above recommendation	44	44.00
10	Irrigation		
	As per recommendation	66	66.00
	Below recommendation	24	24.00
	Above recommendation	10	10.00

The data presented in table 1 indicate that more than half (58.00 per cent) of sesamum growers had adopted improved varieties recommended by SAU's whereas the same number of respondents (58.00 per cent) had adopted seed rate as per the recommendation. Majority of respondents (60.00 per cent) had followed timely sowing practices and nearly half of the respondents (44.00 per cent) had followed the recommended sowing distance. In case of application of organic manure, slightly more than one third (68.00 per cent) of respondents had not adopted application as per the recommendation. Nearly one third (32.00 per cent) of respondents had adopted recommended dose of nitrogen, in case for phosphorus, slightly more than one fourth (26.00 per cent) respondents had adopted recommended phosphorus dose. In adoption of top dressing of nitrogenous fertilizer, 36.00 per cent of respondents had adopted as per recommendation. Moving to the weed management, majority of respondents (74.00 per cent) had adopted the manual weed management practice as per the recommendation whereas nearly half of the respondents (46.00 per cent) had adopted chemical weed control practices as per the recommendation. In case of insect control, only 28.00 per cent of respondents had adopted recommended chemical measures for control of sphinx moth while nearly half (44.00 per cent) of respondents had adopted recommended insecticide (quinalphos) for control of sesamum gall fly. Majority (60.00 per cent) of sesamum growers had adopted carbendazim for control of leaf spot disease and 32.00 per cent of them had adopted oxytetracyclin for control of sesamum phyllody as per the recommendation. Nearly two third (66.00 per cent) of respondents had adopted number of irrigation as per the recommendation.

Table: 2 Constraints faced by farmers in adoption of sesamum production technology [n=100]

Sr. No.	Constraints	Frequency	Per cent
1	Lack of knowledge about improved production practices	84	84.00
2	Scarcity of labours	79	79.00
3	High cost of improved production inputs	76	76.00
4	Lack of easy credit facilities	70	70.00
5	Highly infestation of wild animals like wild boar and blue bull	68	68.00
6	Lack of technical guidance when it is required	56	56.00

Table 2 shows that lack of knowledge about improved production practices (84.00 per cent), scarcity of labours (79.00 per cent), high cost of improved production inputs (76.00 per cent), lack of easy credit facilities (70.00 per cent), highly infestation of wild animals like wild boar and blue bull (68.00 per cent) and lack of technical guidance when it is required (56.00 per cent) were major constraints in adoption of sesamum cultivation practices as perceived by sesamum growers.

CONCLUSIONS

In nutshell it can be said that majority of respondents had adopted cultural practices as per the recommendations. But as far as chemical measures of weed, insect and diseases management is concerned, very few from them had adopted the recommended doses of herbicide, insecticide and fungicide. Lack of knowledge about improved production practices, scarcity of labours, high cost of improved production inputs, lack of easy credit facilities, highly infestation of wild animals like wild boar and blue bull and lack of technical guidance when it is required were major constraints in adoption of sesamum cultivation practices as perceived by sesamum growers.

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