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ADOPTION OF RECOMMENDED ECO-FRIENDLY TECHNOLOGIES FOR BLACK GRAM CULTIVATION

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Abstract:

The world population of 7.56 billion in 2016 is expected to increase over 10 billion by 2050. Such a growth in population has created and will create unprecedented pressures on the limited natural resources base to produce additional food, fiber, fuel and raw materials. In the past, these increased requirements were met mainly through technological innovations, institutional and infrastructural development and policy initiatives that promoted growth in agricultural productivity. The present study was undertaken to study the extent of adoption of recommended eco-friendly technologies for black gram cultivation. The study was conducted in Nagapattinam district of Tamil Nadu. A sample size of 300 small farm women was selected from 20 villages from three blocks viz., Sirkazhi, Kollidam and Nagapattinam by using proportionate random sampling technique. From the findings, it was noticed that most of the eco-friendly farm technologies for black gram were perceived as medium to high level of adoption by small farm women. Low cost women oriented eco-friendly technologies should be developed to put them into immediate use in the rural farm setting.

Introduction:

An eco-friendly technology may be defined as the use of knowledge and resources in a systematic way to produce desired output without harming the environment (Reijntjes *et al.*, 1992). The world population of 7.56 billion in 2016 is expected to increase over 10 billion by 2050. Such a growth in population has created and will create unprecedented pressures on the limited natural resources base to produce additional food, fiber, fuel and raw materials. In the past, these increased requirements were met mainly through technological innovations, institutional and infrastructural development and policy initiatives that promoted growth in agricultural productivity. Agriculture in developing countries like India is promoted mainly by the government organisation, the development and the transfer of eco-friendly technologies require these government extension agencies. Hence it becomes necessary to study the efforts of the major promoter of agriculture in promoting eco-friendly technologies. Considerable attention is being paid to the eco-friendly technologies in different parts of the world.

As the onus for promoting agricultural technologies is with the extension agencies, they must adapt themselves to the new environmental imperatives. In this point of view, agricultural extension is the educational process of advising and assisting farm women in getting the best use of agricultural land and other natural resources in their care in the context of prevailing economical, technical, social and institutional conditions (Stocking and Perkin, 1995). The present study was undertaken to study the extent of adoption of recommended eco-friendly technologies for black gram cultivation.

Methodology:

The study was conducted in Nagapattinam district of Tamil Nadu. A sample size of 300 small farm women was selected from 20 villages from three blocks viz., Sirkazhi, Kollidam and Nagapattinam by using proportionate random sampling technique. Extent of adoption refer to measure how for a particular technology was adopted by an individual correctly without any distortion of message. Totally 22 major eco-friendly technologies for black gram were selected to study the extent of adoption. In present study the maximum possible score for a farm woman for the adoption of eco-friendly technologies for black gram 44. Based on the adoption index, respondents were categorised into low, medium and high extent of adoption based on cumulative frequency method. The percentage ananlysis was also worked out to study the practice wise adoption.

Findings and Discussion:

Extent of Adoption of Recommended Eco-Friendly Technologies for Black Gram:

In order to assess the extent of adoption of recommended eco-friendly technologies for black gram cultivation, necessary data were collected and the findings are presented in Table – 1 and 2.

Overall Adoption of Recommended Eco-Friendly Technologies for Black Gram:

Results of distribution of farm women according to their overall adoption of eco-friendly technologies for black gram are presented in Table – 1.

Table 1: Distribution of farm women according to their overall adoption of recommended eco-friendly technologies for black gram

(n=300)

S.No	Category	Number	Percent
1	Low	112	37.33
2	Medium	138	46.00
3	High	50	16.67
Total		**300**	**100.00**

It could be inferred from the Table – 1, that majority of the farm women (46.00 per cent) came under medium level of adoption. The farm women under low and high levels of adoption were 37.33 per cent and 16.67 per cent respectively. The reason for the respondents under medium level of adoption may be due to the effect of State Department of Agriculture programmes and Centre for Indigenous Knowledge System (NGO) at Sirkazhi. Which might have motivated the farm women in adopting the eco-friendly technologies for black gram cultivation. This finding is in conformity with the findings of Guna (2013). Who reported that majority of the paddy farmers had medium level of adoption of eco-friendly technologies.

Practice Wise Adoption of Recommended Eco-Friendly Technologies for Black Gram Cultivation:

The adoption level based on farm women's need, interest, problem, satisfaction and cost effective of technologies. Hence, an attempt was made to assess the adoption of recommended eco-friendly technologies in black gram cultivation. The results are given in Table – 2.

Table 2: Practice wise adoption of recommended eco-friendly technologies for black gram

(n=300)

S.No	Eco-Friendly Technologies	Number	Percent
1	Farm yard manure (FYM)	300	100.00
2	Enriched FYM	200	66.67
3	Vermicompost	182	60.67
4	Presmud	75	25.00
5	Rhizobium mixed with seed treatment	235	78.33
6	Rhizobium mixed with soil application	198	66.00
7	Neem leaves	232	77.33
8	Neem oil	176	58.67
9	Neem cake	183	61.00
10	Kattamanakku leaves	165	55.00
11	Nallanochi leaves	151	50.33
12	Erukku leaves	155	51.67
13	Pungam leaves	166	55.33
14	Pungam + Sangupoo leaves	100	33.33
15	Subabul leaves	145	48.33
16	Spraying of decoction tobacco waste	70	23.33
17	Pungam oil	140	46.67
18	Parasites	175	58.33
19	Predators	160	53.33
20	Panchakavya	255	85.00
21	Thusakavya	182	60.67
22	Cow urine	260	86.67

The results in Table – 2, revealed that the adoption level of farm women in recommended eco-friendly technologies for black gram cultivation. Out of twenty two technologies in black gram, six technologies were perceived under high level of adoption among the farm women. They were application of farm yard manure (100.00 per cent), cow urine (86.67 per cent), panchakavya (85.00 per cent), rhizobium mixed with seed treatment (78.33 per cent), neem leaves (77.33 per cent) and enriched farm yard manure (66.67 per cent). The reason for their high level of adoption may be easy availability of the materials within easy reach and faith on eco-friendly technologies which are cheap and best. This finding is in agreement with the findings of Kalirajan (2009).

Thirteen technologies fell under moderate level of adoption and percentage under this category ranged from 46.67 per cent to 66.00 per cent. The technologies were rhizobium mixed with soil application (66.00 per cent), neem cake (61.00 per cent), vermicompost (60.67 per cent), thusakavya (60.67 per cent), neem oil (58.67 per cent), parasite (58.33 per cent), pungam leaves (55.33 per cent), kattamanakku leaves (55.00 per cent), predators (53.33 per cent), erukku leaves (51.67 per cent), nallanochi leaves (50.33 per cent), subabul leaves (48.33 per cent) and pungam oil (46.67 per cent).

A low level of adoption was perceived by farm women against three technologies and the percentage ranged from 23.33 to 33.33 per cent. The technologies were pungam + sangupoo leaves (33.33 per cent), presmud (25.00 per cent) and spraying of decoction tobacco waste (23.33 per cent). This may be due to non-availability of materials within easy reach and cost effective nature. This finding is in line with the findings of Sathishkumar (2016).

Conclusion:

From the findings, it was noticed that most of the eco-friendly farm technologies for black gram were perceived as medium to high level of adoption by small farm women. Low cost women oriented eco-friendly technologies should be developed to put them into immediate use in the rural farm setting. Research efforts should be channelised in order to fabricate necessary tools and implements especially for the farm women to carry out the farm operations it would be increasing the adoption level of eco-friendly technologies.

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