ISSN No:-2456-2165

Adoption Level of Marigold Cultivation in Adilabad District, Telangana State

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Abstract:- Extent of Adoption of cultivation practices of Marigold in adilabadmandal of adilabad district (telangana),"was taken up with the objectives to elicit information regarding profile characteristics of marigold growers, knowledge level of marigold growers was carried out during the year 2017-18,which having maximum area and production of marigold. The study revealed that majoritymarigold growers had medium level of adoption (43.33%) followed by high (40.00%) and low level of adoption (16.67%) regarding Overall adoption of recommended production practices of marigold.

Keywords:- *Adoption level, knowledge, constraints, socio-economic life.*

I. INTRODUCTION

India has a predominated agriculture enterprise and crop production is primary and important activity in this sector. Among the other crop production enterprise, horticulture is very closely associated with human civilization from prehistoric era. Agricultural and environmental scientists have unanimously admitted significance of horticulture in the livelihood security, nutritional security, environmental and now in international trade. Horticulture is an important component of today's farming homestead and corporate agriculture. In the changing scenario, the potential for horticulture is enormous in the context of globalized economy and open competitive market. '*Horticulture'* is "the science of growing and management of fruits, vegetables, flowers, ornamental, aromatic & medicinal crops, spices, plantation crops and their processing, value addition and marketing". Floriculture is the promising and important commercial enterprise as compare to other areas of horticulture crops. Today the floriculture has attained the status of industry and it has emerged as the major venture on the world scenario. Many people believe that there is money in floriculture and it is getting a boost to enter world market, thus globalizing agriculture / horticulture. Many educated entrepreneurs are engaged in high-tech floriculture with the intention to enter export market and to commercialize floriculture trade. Many kinds of ornamental and flower plants are grown for domestic and international trade in both developed and developing countries of the world. Today, floriculture is recognized as lucrative profession with a much higher potential returns per unit area.

Flowers are fast emerging as a potential money-spinner for many third world countries. Globally 145 countries are involved in the cultivation of ornamental crops and the area under these crops is increasing steadily. The production of flower crops has increased significantly and there is a huge demand for floricultural products in the world, resulting in growing international flower trade.

The world consumption of cut flowers and plants is increasing and there is a steady annual increase of 10 to 15 per cent in all importing countries. Due to globalization and its effect on income, there is growing per capita floriculture consumption in most of the countries. The production of flower crops has increased significantly and there is a huge demand for floricultural products in the world, resulting in growing international flower trade. Floriculture is an important agribusiness gaining commercial importance in the vital scenario of Indian agriculture. India being a tropical country has several advantages in floriculture production. Despite its diverse agro-climatic and ecological conditions, and endowed with rich traditional flora, it has more access to modern technology. The floriculture production mainly consists of cut flowers and ornamental foliage plants. The flowers, which are more important in cut flower trade are orchid, rose, carnation, chrysanthemum, marigold and gladiolus.

Flowers, besides being a symbol of beauty and love are important for their economic use and are indispensable raw materials for the perfume industries. In India flowers are sanctified and are commonly used in worship of God at homes and temples. The use of flowers for garlands and bouquets is quite common. The essential oil extracted from the flowers is used in manufacturing soaps, cosmetics, disinfectants and detergents and also in food and tobacco industries.

The major flower growing regions of the country is located in southern peninsula. Telangana has the pride place both in terms of area and production, accounting to 20,801 ha and 1.24 lakh million tones of loose flower during 2000. A large number of flowers like Jasmine, tuberose, rose, chrysanthemum, marigold, crossandra, barleria, lily, limonium, alsteoemeria, liatris, freesia, iris, lisiathus, calla, cornation, gerbera and anthurium are commercially cultivated in the state.

Among the flower crops grown in Telangana Marigold ranks third in terms of area and second in terms of production followed by jasmine which ranks second in terms

of area and third in terms of production accounting 3,157 lakh ha, 23,493 tones and 4097 lakh ha, 21,299 tones, respectively.

II. METHODOLOGY

The research study on extent of adoption of cultivation practices of marigold in adilabad mandal of adilabad district, telangana was conducted during the year 2017-2018. In the present investigation,ex-post-facto research design was employed. This design was appropriate because the phenomenon had already occurred. Ex-post-facto research is the most systematic empirical enquiry in which the researcher does not have any control over independent variables as their manifestation has already occurred or as they are inherent and not manipula table thus, inferences about relations among variables were made without direct intervention from concomitant variation of independent and dependent variables. The adilabad district comprises of thirty mandals, among adilabad mandal will be selected based on the highest area under marigold cultivation. There are 38 villages in selected mandal. From selected mandal 10 villages will be selected randomly. From each village 12 farmers will be selected randomly. Thus, the total sample size was 120.

The extent of adoption of production practices in marigold production was knew by the respondents.Lists of 19 cultivation practices were developed for the purpose and each practice was administered in the form of questions to respondents to obtain the response from marigold growers. The questions were provided with multiple choice answers. The questions and answers pertaining to adoption test were carefully designed in consultation with experts. The questions covered full range of cultivation practices beginning from variety selected till the crop yield. Frequency percentage calculated each statements.

III. RESULTS AND DISCUSSION

- *Adoption Level of Marigoldgrowers*

S. No.	Statement	Fully Adopted		Partially Adopted		Not Adopted	
1.	use of deep and summer plouging:	F	%	F	%	F	%
	a)Destroying the pupae exposing them to sunlight	50	41.67	40	33.33	30	25.00
	b)maximum yield can be obtained	60	50.00	40	33.33	20	16.67
	c) no chance for weed growth	90	75.00	20	16.67	10	8.33
2	Recommended marigold varieties in your area are:						
	a)French marigold	60	50.00	40	33.33	20	16.67
	b) African marigold	30	25.00	40	33.33	50	41.67
3	Suitable soil for marigold cultivation is:						
	a) black soil	50	41.67	40	33.33	30	25.00

	b) red soil	30	25.00	30	25.00	60	50.00
	c) light textured Sandy soil	30	25.00	20	16.67	70	58.33
	d) Don't know	0	0.00	0	0.00	120	100.00
4	Suitable time for growing marigold crop is:						
	a) June – July	60	50.00	40	33.33	20	16.67
	b) after the forth night of july	50	41.67	50	41.67	20	16.66
	c) May	40	33.33	40	33.33	40	33.34
	d) June	40	33.33	30	25.00	50	41.67
5	Type of seeds give maximum yield						
	a) recommended variety	30	25.00	40	33.33	50	41.67
	b) certified seed	50	41.67	30	25.00	40	33.33
	c) local seed	30	25.00	40	33.33	50	41.67
	d) don't know	0	0.00	0	0.00	120	100.00
6	Seed rate for one acre is:						
	a) 1kg/ac	50	41.67	30	25.00	40	33.33
	b) 2kg/ac	30	25.00	10	8.33	80	66.67
	c) 3kg/ac	30	25.00	30	25.00	60	50.00
	d) 4kg/ac	40	33.33	30	25.00	50	41.67
7	Spacing between plant to row is:						
	a) 30x30cm	30	25.00	70	41.67	20	16.67

	b) 15x30cm	40	33.33	60	50.00	20	16.67
	c) 60x60cm	30	25.00	30	25.00	60	50.00
	d) More than this	0	0.00	20	16.67	100	83.33
8	Recommended quantity of FYM application						
	a) 2 t/ac	90	75.00	20	16.67	10	8.33
	b) 3 t/ac	20	16.67	90	75.00	10	8.33
	c) 4 t/ac	10	8.33	50	41.67	60	50.00
	d) 5 t/ac	20	16.67	40	33.33	60	50.00
9	Seed treatment						
	a) azospirullum	40	33.33	50	41.67	30	25.00
10	Sowing method for marigold						
	a) dibbling	50	41.67	30	25.00	40	33.33
	b) broadcasting	30	25.00	20	16.67	70	58.33
	c) line sowing	20	16.67	80	66.66	20	16.67
	d) putting seeds behind the plough	10	8.33	60	50.00	50	41.67
11	Irrigation requirement:						
	a) 1-2 times	60	50.00	20	16.67	40	33.33
	b) 2-3 times	50	41.67	60	50.00	10	8.33
	c) 3-4 times	40	33.33	25	20.83	55	45.83
	d) 4-5 times	50	41.67	30	25.00	40	33.33

12	Application of Weedicide						
	a) Pendimethaline	90	75.00	10	8.33	20	16.67
	b) Fluchloraline	60	50.00	30	25.00	30	25.00
	c) Atrazine	50	41.67	60	50.00	10	8.33
	d) Glyphosate	30	25.00	20	16.67	70	58.33
13	What is the optimum dose of fertilizer for marigold cultivation (Kg/Acre) NPK is:						
	a) 25:50:25	20	16.67	40	33.33	60	50.00
	b) 20:30:50	10	8.33	10	8.33	100	83.34
	c) 30:20:40	80	66.67	30	25.00	10	8.33
	d) 40:30:50	20	16.67	40	33.33	60	50.00
14	Nipping practice						
	a) 1 time	30	25.00	50	41.67	40	33.33
	b) 2times	50	41.67	50	41.67	20	16.66
	c) 3 times	20	16.67	40	33.33	60	50.00
	d) Don’t know	0	0.0	0	0.00	120	100.00
15	Spraying of NSKE formulation/ acre						
	a) 300-400L	60	50.00	40	33.33	20	16.67
	b) 200-250 L	70	58.33	30	25.00	20	16.67
	c) 100-200 L	30	25.00	30	25.00	60	50.00

	d) Don't know	0	0.00	0	0.00	120	100.00
16	Common Pests of marigold is:						
	a) Aphids	60	50.00	40	33.33	20	16.67
	b) Earwigs	30	25.00	70	58.33	20	16.67
	c) Thrips	65	54.16	35	29.17	20	16.67
	d) Spider mites	30	25.00	60	50.00	30	25.00
17	Control measures for pest management						
	a) Methomyl (40SP 0.6gm/L)	50	41.67	50	41.67	20	16.66
	b) Indoxacarb (14.5SC) 0.3ml/L	40	33.33	60	50.00	20	16.67
	c) Flubendiamide (480SC) 0.1ml/L	70	58.33	20	16.67	30	25.00
	d) Spinosad (45SC) 0.1ml/L	10	8.33	20	16.67	90	75.00
18	Common diseases in marigold crop:						
	a) Alternaria Leaf spot	60	50.00	60	50.00	0	0.00
	b) Bacterial Leaf spot	70	58.33	30	25.00	20	16.67
	c) Flower Blight	40	33.34	70	58.33	10	8.33
19	Maximum yield obtained in season						
	a) Dec-Feb	80	66.66	20	16.67	20	16.67
	b) Nov- Dec	20	16.67	60	33.33	50	33.33
	c) Dec-Jan	20	16.67	40	33.33	60	50.00
	d) Don't know	0	0.00	0	0.00	120	100.00

Table 1. Distribution of Marigold Growers based on Adoption Level

**Multiple responses*

➢ *Major findings*

- The above table revealed that (75.00%) of respondents fully adopted the use of deep and summer ploughing no chance for weed growth followed by (50.00%) of maximum yield can be obtained (41.67%) destroying the pupae exposing to them to sun light. (33.33%) of respondents partially adopted destroying to sun light and maximum yield can be obtained followed by (16.67%) no chance for weed growth. (25.00%) not adopted destroying them to sun light followed by (16.67%) maximum yield can be obtained (8.33%) no chance for weed growth.
- (50.00%) of respondents fully adopted recommended marigold variety French marigold followed by (25.00%) African marigold. (33.33%) of respondents partially adopted both French marigold and African marigold (41.67%) of marigold variety not adopting the African marigold followed by (16.67%) French marigold.
- (58.33%) of respondents not adopting light textured sandy soil followed by(50.00%) of red soil (25.00%) of black soil (41.67%) fully adopted black soil followed by (25.00%) both red soil light textured sandy soil. (33.33%) partially adopted black soil followed by (25.00%) of red soil (16.67%) light textured sandy soil are suitable soil for marigold cultivation.
- Around (50.00%) of respondents fully adopted suitable time for growing for marigold crop in Jun-July followed by (41.67%) after the fort night of July (33.33%) of both may and June (41.67%) of respondents are partially adopted after the fort night of July followed by (33.33%) both June to July and may (25.00%) June. (41.67%) of respondents are not adopted June season followed by (33.34%) may (16.67%) of June- July and after the fort night of July respectively.
- (41.67%) of respondents are not adopted type of seeds gives maximum yield recommended variety and local seeds followed by (33.33%) certified seeds. (41.67%) fully adopted certified seeds followed by 25.00% recommended variety and local seed. (33.33%) of respondents partially adopted recommended and local seed followed by (25.00%) certified seeds.
- 66.66% of respondents not adopted the seed rate 2kg/ acre followed by (50.00%) 3kg/acre (41.37%) 4kkg/acre (33.33%) 1kg/acre (41.67%) fully adopted 1kg/acre followed by (33.33%) 4kg/acre (25.00%) both 2-3 kg/are (25.00%) of respondents partially adopted 1,2,4kg/acre followed by (8.33%) 2kg/acre respectively.
- (83.33%) of respondents not adopted spacing between plant to row more than this followed by (50.00%) 60x60 (16.67%) 30cmx30cm and 15x30. (58.33%) partially adopted 30cmx30 cm50.00% 15cmx30cm (25.00%) 60cmx60cm (16.67%) more than this. (33.33%) fully adopted 15cmx30cm followed by (25.00%) 60x60cm and 30x30 cm respectively.
- (75.00%) of respondents are fully adopted recommend quantity of FYM application 2 ton/acre followed by (16.67%) 3ton/acre and 5 ton/acre (8.33%) 4 ton/acre. (75.00%) partially adopted 3ton/acre followed by (41.67%) 4 ton/acre (33.33%) 5 ton/acre (16.67%) 2ton /acre. (50.00%) of respondents not adopted both 4ton/acre and 5 ton/acre followed by (8.33%) 2ton/acre and 3ton/acre respectively.
- (41.67%) of respondents partially adopted seed treatment azospirullum. (25.00%) not adopted azospirllum respectively.
- (66.66%) of respondents are partially adopted sowing method for marigold line sowing followed by (50.00%) putting seed behind the plough (25.00%) dibbling (16.67%) broad casting. (58.33%) not adopted broad casting followed by (41.67%) putting seeds behing the plough (33.33%) dibbling (16.67%) line sowing. (41.67%) fully adopted dibbling followed by (25.00%) broad casting (16.67%) line sowing (8.33%) putting seeds behind the plough respectively.
- (50.00%) of respondents are fully adopted irrigation requirement 1-2 times and followed by (41.67%) 2-3 times and 4-5 times (33.33%) 3-4 times . (50.00%) of respondents partially adopted 2-3 times followed by (25.00%) 4-5 times (25.83%) 3-4 times (16.67%) 1-2 times. (45.83%) not adopted 3-4 times followed by (33.33%) 4-5 times and 1-2 times (8.33%) 2-3 times respectively.
- (75.00%) of respondents fully adopted application of weedicides pendimethalin followed by (50.00%) fluchloraline (41.67%) atrzine (25.00%) glyphosate. (58.33%) not adopted glyphosate followed by (25.00%) fluchloraline (16.67%) pendimethaline (8.33%) atrazine. (50.00%) partially adopted atrazine. Followed by (25.00%) fluchloraline. (16.67%) glyphosate (8.33%) pendimethaline.
- (83.34%) of respondents not adopted optimum dose of fertilizer for marigold cultivation 20:30:50 followed by (50.00%) both 25:50:25 and 40:30:50 (8.33%) 30:20:40. (16.67%) fully adopted 30:20:40 followed by (16.67%) both 25:50:25 and 40:30:50 (8.33%) 20:30:50. (33.33%) patially adopted 25:50:25 and 40:30:50 followed (25.00%) 30:20:40 (8.33%) 20:30:50 respectively.
- (50.00%) of respondents not adopted nipping practice 3 times followed by (33.33%) 1 time (16.66%) 2 times. (41.67%) partially adopted both 1 and 2 time followed by (33.33%) 3 times. (41.67%) fully adopted 2 times followed by (25.00%) 1 time (16.67%) 3 times respectively.
- (58.33%) of respondents spraying of NSKE formulation fully adopted 200-250lit followed by (50.00%) 300-400-lit (25.00%) 100-200lit. 50.00% not adopted 100-200lit followed by (16.67%) both 300-400lit and 200-250 lit. (33.33%) partially adopted 300-400-lit followed by (25.00%) both 200-250 lit 100-200lit respectively.
- (75.00%) of respondents not adopted control measure for pest management spinosad(45SC) 0.1ml/lit followed by (25.00%) flubendimide (480 SC) 0.1ml/lit 16.67% indoxacarb (14.5SC) 0.3ml/lit and methomyl (40 SP) 0.6ml/lit. (58.33%) fully adopted flubendimide (480 SC) 0.1ml/lit followed by (41.67%) methomyl (40 SP)

0.6ml/lit (33.33%) indoxacarb (14.5SC) 0.3ml/lit (8.33%) spinosad(45SC) 0.1ml/lit. (50.00%) partially adopted indoxacarb (14.5SC) 0.3ml/lit followed by (41.67%) methomyl (40 SP) 0.6ml/lit (16.67%) both flubendimide (480 SC) 0.1ml/lit and spinosad(45SC) 0.1ml/lit respectively.

- (66.66%) of respondents fully adopted maximum yield obtained Dec-Feb followed by (16.67%) both Nov-Dec and Dec-Jan. (50.00%) partially adopted Nov-Dec followed by (33.33%) Dec-Jan (16.67%) Dec-Feb. (50.00%) not adopted Dec-Jan followed (33.33%) Nov-Dec (16.67%) Dec-Feb respectively.

➢ *Overall adoption of marigold growers about recommended cultivation practices.*

Category	Frequency	Percentage
Low	20	16.67
Medium	52	43.33
High	48	40.00
Total	120	100

Table 2. Distribution of respondents overall Adoption level.

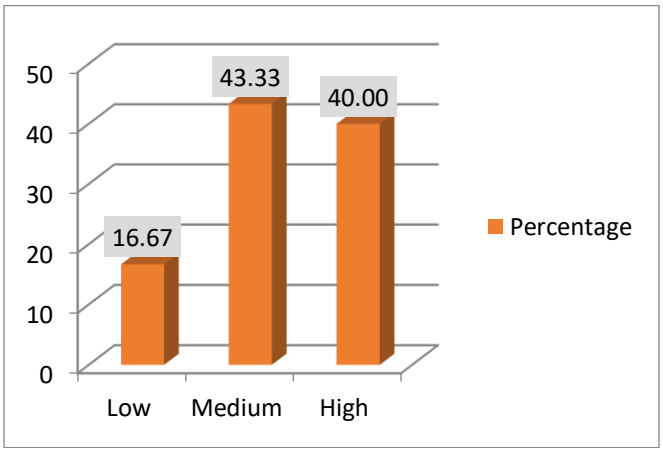

Fig 1:- Distribution of respondents Adoption level.

Table No.2.and Fig.1indicated that majority (43.33 per cent) of respondents were in the medium adoption category of recommended package of practices. About 40.00 per cent of the respondents were adopting the recommended practices at high level. Only 16.67 per cent of respondents were in the low adoption category of marigold cultivation. These findings are in conformity with the finding Borse (2003) andGhadge (2005).

IV. CONCLUSIONS

Hardly any research pertaining to this crop has been done up to date. It was felt that the findings with respect to Adoption level of marigold growers in marigold cultivation practices by the farmers would focus light on those areas where the cultivators were found that medium level of adoption is majority.

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