



Research Article

CONSTRAINTS FACED BY FARMERS IN PRODUCTION AND MARKETING OF SELECTED PULSES IN MAHABUBNAGAR DISTRICT OF TELANGANA STATE

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Received: April 07, 2019; Revised: May 24, 2019; Accepted: May 26, 2019; Published: May 30, 2019

Abstract: The study was conducted to investigate the constraints faced by farmers in production and marketing of selected pulses farmers in Mahabubnagar district of Telangana State. The State of Telangana was selected purposively for the study as the investigator hails from the state. Out of 31 districts of Telangana State, Mahabubnagar district was selected purposively for the study. In this district, the blocks recorded highest area was selected. In each block two villages with highest area under cultivation of particular crop were selected. The sample frame work includes selection of three crops, three blocks and six villages purposively. From each selected village, 10 percent respondents were selected randomly thus making a sample of 145 respondents for the study. The study has revealed that the Redgram farmers in Narva block, Production related constraints results that the problem of labour scarcity during peak time with rank first, Garret value 86 and Average score (80.82), among the Marketing constraints faced by Redgram farmers in Narva block, the most important constraints was frequent price fluctuations first major among all the constraint faced by them, Garret value 80 and Average score (81.06). The Bengalgram farmers in Uttoor block, Constraints related production results that the first major constraint they faced was lack of knowledge of scientific crop production, Garret value 81 and Average score (82.00), among the Marketing constraints faced by Bengalgram farmers in Uttoor block said that frequent price fluctuations is major and is ranked first among the all other constraints, Garret value 85, Average score (78.62). The production constraints faced by the Greengram farmers in Damaragidda block results shows that the first major constraint they faced was lack of knowledge of scientific crop production, Garret value 80 and Average score (80.02), the marketing constraint faced by Greengram farmers in Damaragidda block said that the frequent price fluctuations is major and is ranked first among the all other constraints, Garret value 85, Average score (80.05). The finding of the study indicate that there is need to call from Government and policy makers to pay attention on effective planning that would overcome the constraints faced by farmers.

Keywords: Pulses, Constraints, Production, Marketing, Redgram, Bengalgram, Greengram, Mahabubnagar, Telangana state

Citation: Vinaya Kumari M., *et al.*, (2019) Constraints Faced by Farmers in Production and Marketing of Selected Pulses in Mahabubnagar District of Telangana State. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 11, Issue 10, pp.- 8536-8540.

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Academic Editor / Reviewer: Dr Soman Padmanabhan, Dr Abhishek Pratap Singh, Rohit Pandey

Introduction

India's agricultural sector is one of the largest in the world today in terms of production of food grains and other agricultural commodities. With over 60 million tonnes of buffer stock, India is not only a self-sufficient country now but also an exporter of food grains to many countries India, being a predominantly agriculture-based economy, India is the largest producer, largest consumer and the largest importer of pulses in the world [1]. India grows the largest variety of pulses in the world, accounting for about 32 percent of the area under cultivation and 25 percent of the world production. The important pulse crops are chickpea with a 49 percent share, pigeon pea with a 16 percent share, lentils with a 7 percent share, mungbean with a 5 percent share, field pea with a 5 percent share and urdbean with 4 percent. The major pulse producing states are Madhya Pradesh with a 27 percent share, Rajasthan with an 11 percent share, Maharashtra with a 10 percent share, Uttar Pradesh with an 8 percent share and Andhra Pradesh with a 7 percent share, which together accounted for 63 percent of the total production during 2014-15. Pulses production has registered a remarkable increase from 14.20 million tonnes in 2006-07 to a record level of 19.25 million tonnes in 2013-14. The increase in the total production of pulses has been on account of improvements in the production levels of urdbean and gram. The production of pulses during 2014-15 is, however, estimated at 17.19 million tonnes according to the Fourth Advance Estimate [2]. Telangana State is youngest state in India and popularly known as granary of South India because of its abounding surpluses in

the production of food crops. The economy of Telangana is mainly supported by agriculture. Telangana is developing into a seed hub (seed bowl) in India, and was selects as a certifying agency as per OECD standards, for 10 states. The state Telangana, 2,251 acres of land were used for cultivated of seeds and 17,000 quintals of seed were exported to other countries like Sudan, Egypt, and Philippines 2017-18, it expanded cultivation to 2,567 acres of land and was expecting yield of 26,000 quintals. The GDP of Telangana rank was 8 in the year 2017-18 and contribution of agriculture in GDP was 18 percent [3].

Pulses are grown in all three seasons. The three crop seasons for the commodity are:

Kharif– Arhar (Tur), Urd (Blackgram), Moong (Greengram), Lobia (Cowpea), Kulthi (Horsegram) and Moth;

Rabi – Gram, Lentil, Pea, Lathyrus and Rajmash

Summer– Greengram, Blackgram and Cowpea

Research Methodology

The State of Telangana was selected purposively for the study as the investigator hails from the state. Out of 31 districts of Telangana State, Mahabubnagar district was selected purposively for the study. In this district, the blocks recorded highest area was selected.

Table-1 Constraints faced by Redgram growers, Number of Respondent=60

S	Particulars	Garret value	Garret mean score	Rank
Production Related Constraints				
1	Low quality seed	49	50.84	IX
2	Shortage of fertilizers	55	54.46	VII
3	Labour scarcity during peak time	86	80.82	I
4	High labour cost	70	70.46	III
5	Scarcity of farm yard manure	14	19.27	XVI
6	Input supply centre is far away	66	68.87	IV
7	High cost of growth regulators	58	60.25	VI
8	Non availability of inputs include pesticides, insecticide and seed etc.	61	63.89	V
9	High incidence of pest & diseases	45	43.29	X
10	Inadequate credit supply by financial institution	24	23.28	XV
11	Irregular availability of irrigation water	52	52.09	VIII
12	Low yield	35	31.82	XIII
13	Lack of knowledge of scientific crop production	30	29.86	XIV
14	low soil fertility status	39	38.82	XII
15	Highly fluctuating weather condition	42	43.27	XI
16	Erratic electricity supply	76	76.86	II
Marketing Related Constraints				
1	Lack of availability of market information at farm level	56	55.82	VI
2	Frequent price fluctuations	80	81.06	I
3	Lack of storage facility	70	70.28	III
4	Weighing loss during storage	52	52.46	VII
5	High commission charges	27	26.42	XIII
6	High transportation cost	73	75.48	II
7	Delay in cash payment	20	18.38	XIV
8	Lack of support prices when there is a glut in the market	62	62.53	IV
9	Distress sale/Forced sale due to burden of repayment of loan	59	59.23	V
10	Lack of proper infrastructure and facilities in market	50	50.2	VIII
11	Lack of cooperatives in marketing societies at village level	42	41.81	IX
12	Lack of awareness of new technology and scientific training	32	30.6	XII
13	Lack of information on government Schemes and subsidy	40	40.81	X
14	Poor transportation and road	38	36.88	XI

Note: Figures in the parenthesis indicate percentage to the total

In each block two villages with highest area under cultivation of particular crop were selected. The sample frame work includes selection of three crops, three blocks and six villages purposively. From each selected village, 10 percent respondents were selected randomly thus making a sample of 145 respondents for the study. A pre-tested structured interview schedule was used to collect the data from the respondents by personal interview method. The farmers were asked to rank the constraints related production and marketing in the order of importance. The collected details were analyzed using the Garrett's Ranking Technique. By using technique, the order of the merits given by the respondents was changed into ranks by using the following formula:

$$\text{Percent position} = 100(R_{ij} - 0.5) / (N_j)$$

Where, R_{ij} =Rank given for i th factor by j th individual

N_j =Number of factors ranked by j th individual.

The percent position of each rank was converted into scores by referring table (Garrett and Woodworth, 1969). Then for each factor, the scores of individual respondents were added together and divided by total number of respondents for whom score were added, these mean score for all the factors were arranged in descending order and the constraints were ranked.

Results and Discussion

The findings of the present study as well as relevant discussion have been summarized under following heads:

Constraints faced by Redgram growers

The Redgram farmers in Narva block Production related constraints results presented in [Table-1] shows that the problem of labour scarcity during peak time, was the major problem with Garret value 86 and Garret mean score (80.82). The second major constraint the farmers faced was erratic electric supply, Garret value 76 and Garret mean score (76.86) the same result was generated by Aher *et al.*, 2011 [4]. The third major constraint ranked by the Redgram farmers was high labour cost, Garret value 70 and Garret mean score (70.46) Pradhan 2013 [5]. The fourth constraint faced them was input supply centre is far away, Garret value

66 and Garret mean score (68.87). Non availability of inputs include pesticides, insecticide and seed etc. was the fifth constraint, Garret value 61 and Garret mean score (63.89) Perm Narayan and Sandeep Kumar, 2015 [6]. The sixth constraint was the, High cost of growth regulators, Garret value 58 and Garret mean score (60.25). The seventh constraint faced by them was, Shortage of fertilizers, Garret value 55 and Garret mean score (54.46). Lack of knowledge of scientific crop production was the eighth constraint, Garret value 52 and Garret mean score (52.09). Low quality seed was ninth constraint faced by them, Garret value 49 and Garret mean score (50.84). The tenth major constraint faced by them was High incidence of pest & diseases, Garret value 45 and Garret mean score (43.29). Highly fluctuating weather condition eleventh major constraint faced by them, Garret value 42 and Garret mean score (43.27). The twelfth constraint faced by them was low soil fertility status, Garret value 39 and Garret mean score (38.82). Low yield was thirteenth constraint faced them, Garret value 35 and Garret mean score (31.82). The fourteenth constraint faced by them was Lack of knowledge of scientific crop production, Garret value 30 and Garret mean score (29.86). Inadequate credit supply by financial institution was fifteenth constraint faced them, Garret value 24 and Garret mean score (23.28) and Scarcity of farm yard manure was the sixteenth major constraint faced by them, Garret value 14 and Garret mean score (19.27). [Table-1] shows that Among the Marketing constraints faced by Redgram farmers in Narva block, the most important constraints was frequent price fluctuations first major among all the constraint faced by them, Garret value 80 and Garret meanscore (81.06). The second major constraint the farmers faced was high transportation cost, Garret value 73 and Garret meanscore (75.48). Lack of storage facilities was third major constraint faced by them, Garret value 70 and Garret meanscore (70.28) [7]. The fourth major constraint the farmers faced was, Lack of support prices when there is a glut in the market, Garret value 62 and Garret meanscore (62.53). The fifth major constraint the farmers faced was distress sale/forced sale due to burden of repayment of loan, Garret value 59 and Garret meanscore (59.23). The seventh major constraint the farmers faced was weighing loss during storage, Garret value 52 and Garret meanscore (52.46).

Table-2 Constraints faced by Bengalgram growers, Number of Respondents=47

SN	Particulars	Garret value	Garret mean score	Rank
Production Related Constraints				
1	Low quality seed	58	58.6	VI
2	Shortage of fertilizers	45	45	X
3	Labour scarcity during peak time	61	61.4	V
4	High labour cost	75	76.6	II
5	Scarcity of farm yard manure	17	16.02	XVI
6	Input supply centre is far away	46	47.4	IX
7	High cost of growth regulators	53	53.2	VIII
8	Non availability of inputs include pesticides, insecticide and seed etc.	41	41.2	XI
9	High incidence of pest & diseases	72	72.4	III
10	Inadequate credit supply by financial institution	24	23.8	XV
11	Irregular availability of irrigation water	64	64.4	IV
12	Low yield	35	34.2	XIV
13	Lack of knowledge of scientific crop production	81	82	I
14	low soil fertility status	36	34.6	XIII
15	Highly fluctuating weather condition	37	37.4	XII
16	Erratic electricity supply	55	55	VII
Marketing Related Constraints				
1	Lack of availability of market information at farm level	63	66.67	IV
2	Frequent price fluctuations	85	78.62	I
3	Lack of storage facility	69	69.08	III
4	Weighing loss during storage	51	53.69	VII
5	High commission charges	15	20.27	XIV
6	High transportation cost	75	70.64	II
7	Delay in cash payment	25	24.28	XIII
8	Lack of support prices when there is a glut in the market	56	58.03	VI
9	Distress sale/Forced sale due to burden of repayment of loan	59	59.29	V
10	Lack of proper infrastructure and facilities in market	49	50.86	VIII
11	Lack of cooperatives in marketing societies at village level	31	35.82	XII
12	Lack of awareness of new technology and scientific training	37	39.46	XI
13	Lack of information on government schemes and subsidy	41	43.48	X
14	Poor transportation and road	45	47.08	IX

Note: Figures in the parenthesis indicate percentage to the total

Lack of proper infrastructure and facilities in market as the eight major constraint faced by them, Garret value 50 and Garret meanscore (50.20) this finding is supported by the findings of Pushpa and Srivastava 2017 [8]. The ninth major constraint the farmers faced was Lack of cooperatives in marketing societies at village level, Garret value 42 and Garret meanscore (41.82). The tenth major constraint faced by them was Lack of information on government schemes and subsidy, Garret value 40 and Garret meanscore (40.18). Poor transportation and roads as the eleventh major constraint, Garret value 38 and Garret meanscore (36.86). Lack of awareness of new technology and scientific training was the twelfth constraint faced by them, Garret value 32 and Garret mean score (30.60). High commission charges was thirteenth constraint faced them, Garret value 27 and Garret mean score (26.42) and the fourteenth constraint faced by them was Delay in cash payment, Garret value 20 and Garret mean score (18.38).

Constraints faced by Bengalgram growers

The Bengalgram farmers in Utkoor block Constraints related production results presented in [Table-2] shows that the first major constraint they faced was lack of knowledge of scientific crop production, Garret value 81 and Garret mean score (82.00) This finding is supported by the findings of Maheriya *et al.*, 2015 [9]. The second major constraint the farmers faced was high labour cost, Garret value 75 and Garret mean score (76.60). High incidence of pest and diseases as the third major constraint, Garret value 72 and Garret mean score (72.40) these findings are supported by findings of Savan Patel (2015) [10]; Sunit Kumar and Bourai (2012) [11]. The fourth major constraint the farmers faced was Irregular availability of irrigation water, Garret value 64, Garret mean score (64.40) [12]. Labour scarcity during peak time as the fifth major constraint faced by the farmers, Garret value 61 and Garret mean score (61.40) [13]. The sixth major constraint the farmers faced was low quality seed, Garret value 58 and Garret mean score (58.60). The seventh major constraint the farmers faced was Erratic electricity supply, Garret value 55 and Garret mean score (55.50). High cost of growth regulators as the eighth major constraint faced by the farmers, Garret value 53

and Garret mean score (53.20). The ninth major constraint farmers faced was Input supply centre is far away, Garret value 46 and Garret mean score (47.40). The tenth major constraint farmers faced was shortage of fertilizers, Garret value 45 and Garret mean score (45.00). Non availability of inputs include pesticides, insecticide and seed etc. as the eleventh major constraint, Garret value 41 and Garret mean value (41.20). The twelfth constraint faced by them was highly fluctuating weather conditions, Garret value 37 and Garret mean score (37.40). Low soil fertility status was thirteenth constraint faced them, Garret value 36 and Garret mean score (34.60). The fourteenth constraint faced by them was Low yield, Garret value 35 and Garret mean score (34.20). Inadequate credit supply by financial institution was fifteenth constraint faced them, Garret value 24 and Garret mean score (23.80) and Scarcity of farm yard manure was the sixteenth major constraint faced by them, Garret value 17 and Garret mean score (16.20). [Table-2] shows that among the Marketing constraints faced by Bengalgram farmers in Utkoor block said that frequent price fluctuations is major and is ranked first among the all other constraints, Garret value 85, Garret mean score (78.62). The second major constraint the farmers faced was high transportation cost, Garret value 75 and Garret mean score (70.64). Lack of storage facility as the third major constraint, Garret value 69 and Garret mean score (69.08). The fourth major constraint the farmers faced was lack of availability of market information at farm level, Garret value 63 and Garret mean score (66.67). The fifth major constraint the farmer faced was distress sale/forced sale due to burden of repayment of loan, Garret value 59 and Garret mean score (59.29). Lack of support prices when there is a glut in the market as the sixth major constraint faced by them, Garret value 56 and Garret mean score (58.03). The seventh major constraint the farmer faced was weighing loss during storage, Garret value 51 and Garret mean score (53.69). The eighth major constraint the farmers faced was lack of proper infrastructure and facilities in market, Garret value 49 Garret mean score (50.86). The ninth major constraint the farmers faced was Poor transportation and roads, Garret value 45 and Garret mean score (47.08). The tenth major constraint faced by them was Lack of information on government schemes and subsidy, -

Table-3 Constraints faced by Greengram growers, Number of Respondent= 38

SN	Particulars	Garret value	Garret mean score	Rank
Production Related Constraints				
1	Low quality seed	40	40.26	XI
2	Shortage of fertilizers	42	42.61	X
3	Labour scarcity	38	37.16	XII
4	High labour cost	62	62.65	V
5	Scarcity of farm yard manure	18	14.26	XVI
6	Input supply centre is far away	20	18.49	XV
7	High cost of growth regulators	52	53.15	VIII
8	Non availability of inputs include pesticides, insecticide and seed etc.	50	50.27	IX
9	High incidence of pest & diseases	70	71.42	IV
10	Inadequate credit supply by financial institution	25	24.47	XIV
11	Irregular availability of irrigation water	33	32.68	XIII
12	Low yield	58	58.66	VI
13	Lack of knowledge of scientific crop production	80	80.02	I
14	low soil fertility status	55	55.83	VII
15	Highly fluctuating weather condition	74	76.65	III
16	Erratic electricity supply	78	79.83	II
Marketing Related Constraints				
1	Lack of availability of market information at farm level	49	48.82	VIII
2	Frequent price fluctuations	85	80.05	I
3	Lack of storage facility	63	66.8	IV
4	Weighing loss during storage	41	41.07	X
5	High commission charges	25	28.82	XIII
6	High transportation cost	75	76.12	II
7	Delay in cash payment	16	21.03	XIV
8	Lack of support prices when there is a glut in the market	70	69.63	III
9	Distress sale/Forced sale due to burden of repayment of loan	59	59.22	V
10	Lack of proper infrastructure and facilities in market	56	58.03	VI
11	Lack of cooperatives in marketing societies at village level	37	36.84	XI
12	Lack of awareness of new technology and scientific training	45	45.06	IX
13	Lack of information on government schemes and subsidy	32	34.87	XII
14	Poor transportation and road	52	52.2	VII

Note: Figures in the parenthesis indicate percentage to the total

Garret value 41 and Garret mean score (43.48). Lack of awareness of new technology and scientific training as the eleventh major constraint, Garret value 37 and Garret mean score (39.46). Lack of cooperatives in marketing societies at village level was the twelfth constraint faced by them, Garret value 31 and Garret mean score (35.82). Delay in cash payment was thirteenth constraint faced them, Garret value 25 and Garret mean score (24.28) and the fourteenth constraint faced by them was High commission charges, Garret value 15 and Garret mean score (20.27).

Constraints faced by Greengram growers

The production constraints faced by the Greengram farmers in Damaragidda block were also ranked using Garret ranking technique. results presented in [Table-3], shows that the first major constraint they faced was lack of knowledge of scientific crop production, Garret value 80 and Garret mean score (80.02) these findings are supported by findings of Gondaker *et al.*, 2015 [14], Sachinkumar and Basavaraja 2012 [15]. The second major constraint the farmers faced was Erratic electricity supply, Garret value 78 and Garret mean score (79.83) The same result was generated by Aher *et al.*, 2011. Highly fluctuating weather condition as the third major constraint, Garret value 74 and Garret mean score (76.65). The fourth major constraint the farmers faced was High incidence of pest and diseases, Garret value 70 and Garret mean score (71.42) Shafiqueul Islam *et al.*, 2011[16]. High labour cost as the fifth major constraint faced by the farmers, Garret value 62 and Garret mean score (62.65). The sixth major constraint the farmers faced was Low yield, Garret value 58 and Garret mean score (58.66). The seventh major constraint the farmers faced was low soil fertility status, Garret value 55 and Garret mean score (55.82). High cost of growth regulators as the eighth major constraint faced by the farmers, Garret value 52 and Garret mean score (53.12) [17]. The ninth major constraint farmers faced was Non availability of inputs include pesticides, insecticide and seed etc. Garret value 50 and Garret mean score (50.27). The tenth major constraint farmers faced was shortage of fertilizers, Garret value 42 and Garret mean score (42.61). Low quality seed as the eleventh

major constraint, Garret value 40 and Garret mean value (40.26). The twelfth constraint faced by them was labour scarcity, Garret value 38 and Garret meanscore (37.16). Irregular availability of irrigation water was thirteenth constraint faced them, Garret value 33 and Garret mean score (32.68). The fourteenth constraint faced by them was Inadequate credit supply by financial institution, Garret value 25 and Garret mean score (24.47). Input supply centre is far away was fifteenth constraint faced them, Garret value 20 and Garret mean score (18.49) and Scarcity of farm yard manure was the sixteenth major constraint faced by them, Garret value 18 and Garret mean score (14.26). [Table-3], shows that the marketing constraint faced by Greengram farmers in Damaragidda block said that the frequent price fluctuations is major and is ranked first among the all other constraints, Garret value 85, Garret mean score (80.05). The second major constraint the farmers faced was high transportation cost, Garret value 75 and Garret mean score (76.12) Uttam 2017 [16]. Lack of support prices when there is a glut in the market as the third major constraint, Garret value 70 and Garret mean score (69.63). The fourth major constraint the farmers faced was Lack of storage facility, Garret value 63 and Garret mean score (66.80). The fifth major constraint the farmer faced was distress sale/forced sale due to burden of repayment of loan, Garret value 59 and Garret mean score (59.22). Lack of proper infrastructure and facilities in market as the sixth major constraint faced by them, Garret value 56 and Garret mean score (58.03). The seventh major constraint the farmer faced was Poor transportation and roads, Garret value 52 and Garret mean score (52.20). The eighth major constraint the farmers faced was Lack of availability of market information at farm level, Garret value 49 Garret mean score (48.80). The ninth major constraint the farmers faced was Lack of awareness of new technology and scientific training, Garret value 45 and Garret mean score (45.06). The tenth major constraint faced by them was Weighing loss during storage, Garret value 41 and Garret mean score (41.07). Lack of cooperatives in marketing societies at village level as the eleventh major constraint, Garret value 37 and Garret mean score (36.84). Lack of information on government schemes and subsidy was the twelfth constraint faced by them, Garret value 32 and Garret

mean score (34.87). High commission charges were thirteenth constraint faced them, Garret value 25 and Garret mean score (28.82) and the fourteenth constraint faced by them was Delay in cash payment, Garret value 16 and Garret mean score (21.03).

Conclusion

Pulses are important crops which help to increase the economic condition of the farmers and traders as well. Due to urbanization and globalization, there is rise in demand for pulses in both domestic and international market. However, Pulses producers are facing many problems right from the point of production to the final disposal. The Redgram farmers in Narva block, production constraints results that the problem of labour scarcity during peak time with rank first and The second major constraint the farmers faced was erratic electric supply, among the Marketing constraints faced by Redgram farmers in Narva block, the most important constraints was frequent price fluctuations first major among all the constraint faced by them and The second major constraint the farmers faced was high transportation cost. The production constraints faced by Bengalgram farmers in Utkoor block, results that the first major constraint they faced was lack of knowledge of scientific crop production and the second major constraint the farmers faced was high labour cost, among the Marketing constraints faced by Bengalgram farmers in Utkoor block said that frequent price fluctuations is major and is ranked first among the all other constraints and the second major constraint the farmers faced was high transportation cost. The production constraints faced by the Green gram farmers in Damaragidda block were also ranked using Garret ranking technique, results shows that The first major constraint they faced was lack of knowledge of scientific crop production and the second major constraint the farmers faced was Erratic electricity supply, among the marketing constraint faced by Green gram farmers in Damaragidda block said that the frequent price fluctuations is major and is ranked first among the all other constraints and the second major constraint the farmers faced was high transportation cost etc. Therefore, it is suggested that immediate steps should be taken to combat the constraints in Pulses production and marketing, so that, growers of Pulses take better advantage in pulses business.

Application of research: Aim of the research area knows the constraints faced by the farmers those who are growing the major pulses in Mahabubnagar district of Telangana state.

Research Category: Agriculture economics, Agribusiness management.

Abbreviations:

OECD: Organization for Economic Cooperation and Development
DES: Directorate of Economics and Statistics
GDP: Gross Domestic Product

Acknowledgement / Funding: Authors are thankful to Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh, 211007.

*Research Guide or Chairperson of research: Amit Kumar Masih

University: Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh, 211007.
Research project name or number: PhD Thesis

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: Telangana state, mahabubnagar district.

Cultivar / Variety name: Redgram, Bengalgram and Greengram.

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

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