

## Original Research Article

# **CONSTRAINTS IN RICE FALLOW PULSES PRODUCTION IN SRIKAKULAM DISTRICT OF ANDHRA PRADESH**

### **ABSTRACT**

Rice fallow cultivation constitutes the major portion of pulse production particularly black gram and green gram in Srikakulam district of A.P. Farmers are reaping lower yields of 3.75-5.00 q/ha against 15.0-20.0 q/ha of its potential. Keep this in view an Extension study was conducted on study of constraints and reasons for low productivity in Pulses in Srikakulam District. Expost-Facto research design was used for the study with total sample size 60. Results revealed that the low soil fertility was the major constraint in pulses production (100%), incidence of yellow vein mosaic virus (93.33%), labour scarcity and incidence of low temperatures and fog during flowering period i.e first fortnight of January (88.33%), Weed infestation particularly vicia, cuscuta, xanthium and Echinochloa (86.67%) and Lack of YVMV resistant varieties & suitable varieties (83.33%) and lack of regulated market (96.67%) were the major technical or situational constraints. Non adoption of irrigation management (93.33%), non adoption of seed treatment (91.67%), non adoption of proper sowing (way of broadcast) method and seed rate (90.00), non adoption of weed management practices (88.33%), non adoption of foliar nutrient management in rice fallow pulses (86.67%) were the adoption gaps perceived as constraints. There is a need to conduct more no. of FLDs in the farmer fields and training programmes to the farmers and timely supply of inputs in time or make available to the farmers prior to the season.

Key words: Knowledge, Adoption, Partial adoption, Constraints, Situational constraints

### **1. INTRODUCTION**

Pulses are major sources of proteins among the vegetarians in India and complement the staple cereals in the diets with proteins, essential amino acids, vitamins and minerals. They contain 22-24 per cent protein, which is almost twice the protein in wheat and thrice that of rice.

Pulses contribute 11 per cent of the total intake of proteins in India (Reddy, 2010). Rice fallow cultivation constitutes the major portion of pulse production particularly black gram and green gram in Srikakulam district of A.P. Farmers are reaping lower yields of 3.75-5.00 q/ha against 15.0-20.0 q/ha of its potential. Keep

this in view an Extension study was conducted on study of constraints and reasons for low productivity in Pulses in Srikakulam District as per the approval of State Level Technical Programme (SLTP)2021.This study was conducted by the Extension Scientist of District Agricultural Advisory and Technology Transfer Centre(DAATTC) of Srikakulam, an extension unit of Acharya N.G Ranga Agricultural University.

## 2. MATERIALS AND METHODS

## 3. RESULTS AND DISCUSSION

Results were tabulated based on frequency and percentage

**Table no.1: Knowledge level of respondent farmers:**

Total Cumulative Frequency of responses 720(12question items for 60 sample)N=60

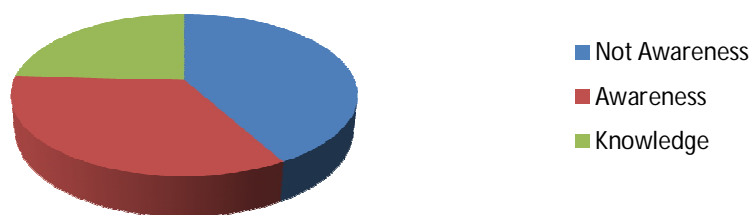
S.No	Knowledge item	Cumulative Frequency of responses	Per centage
1	Not Awareness	302	41.94
2	Awareness	244	33.89
3	Knowledge	174	24.17
	<b>Total</b>	<b>720</b>	<b>100</b>

From the table1 it can be perused that Nearly 42 per cent of the farmers not aware about the package of practices of pulses particularly black gram and green gram as per the recommendations of ANGRAU followed by had the awareness by 33.89% and had the knowledge by 24.17 %.

The study was conducted in selected six mandals based on crop coverage (pulses). Two villages from each Mandal were selected. Five farmers from each village selected randomly for the study. Thus total sample size was 60. Expost-Facto research design was used for the study. The interview schedule was prepared and data collected from the farmers on knowledge, adoption and constraints faced and as perceived by them. The data quantified and ranked based on frequency and percentage of respondents.

It might be due to the low education (literacy) and less extension contact of farmers. Item analysis revealed that the farmers not aware about the recommended package of practices particularly use of farm machinery, sowing method, foliar nutrient management and existence of high yielding varieties.

**fig.1 :Knowledge level of respondent farmers**



**Table No.2: Adoption of package of practices of Rice fallow pulses: N=60**

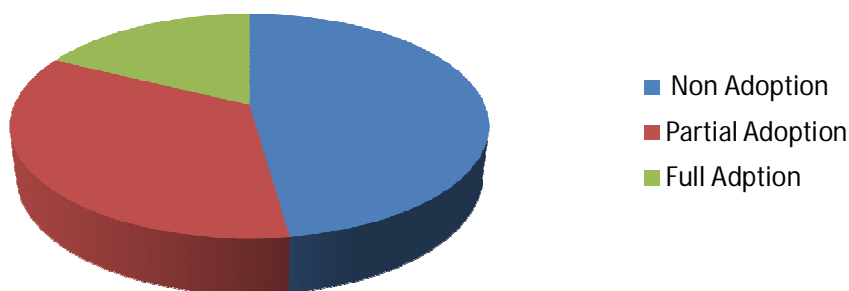
Total Cumulative Frequency of responses 720(12question items for 60 sample)

S No	Adoption items	Cumulative Frequency of responses	Per centage
1	Non Adoption	344	47.78
2	Partially adoption	249	34.58
3	Full Adoption	127	17.64
	Total	720	100

It can be observed from the table 2 that Approximately 48 per cent of the farmers not adopted the recommended package of practices black gram and green gram. Nearly 34 per cent of the farmers partially adopted the recommended package of practices black gram and green

gram. 18 per cent of the respondent farmers adopted the package of practices as per the recommendations .Low adoption rate might be due to lack of knowledge on recommended technologies and situational constraints.

**fig.2 : Adoption of pulses production technologies**



**Table 3: Situational or technical constraints:**

S.No	Constraints	Frequency	Percentage	Rank
1	Low soil fertility (low organic carbon)	60	100	I
2	Lack of YVMV resistant varieties & suitable varieties	50	83.33	VI
3	Incidence of Yellow Mosaic Virus Disease	56	93.33	II
4	Uncontrolled water flow at the time of sowings	28	46.67	XIII
5	Crop can not withstand even little water stagnation	40	66.67	X
6	Prevalence of moisture stress at the time flowering and pod development	45	75.00	VIII
7	Incidence of Low temperatures and fog during flowering period i.e first fortnight of January	53	88.33	IV
8	No possibility of inter cultivation	36	60.00	XI
9	Weed infestation particularly vicia, cuscuta. xanthium and Echinochloa	52	86.67	V
10	Not withstand to soil salinity which is increasing year by year	42	70.00	IX
11	Incidence of maruca & spodoptera infestation	48	80.00	VII
12	Pod dehiscence at the time of harvesting	30	50.00	XII
13	Labour scarcity	55	91.67	III
14	Incidence of powdery mildew	25	41.67	XIV
	<b>Market related constraints</b>			
15	Lack of regulated market	<b>55</b>	<b>91.67</b>	<b>I</b>
16	Price fluctuation	<b>42</b>	<b>70.00</b>	<b>II</b>

**Constraints faced and perceived the respondent farmers:**

Based on literature and on discussion with experts constraints categorized into technical or situational and extension gaps perceived as constraints.

It can be revealed from table 3 that the Low soil fertility was the major constraint in pulses productivity (100%). It might be due to majority of the Srikakulam soils are red sandy loams, non application of FYM and green manure years together followed by the incidence of yellow vein mosaic virus (93.33), labour scarcity and

incidence of low temperatures and fog during flowering period i.e first fortnight of January (88.33%), Weed infestation particularly vicia, cuscuta. xanthium and Echinochloa (86.67%) and Lack of YVMV resistant varieties & suitable varieties (83.33%) and lack of regulated market (96.67%) were the major constraints. There is a need to create awareness among the farmers about the availability of resistant varieties and the measures to mitigate the fog incidence.

**Table No.4 Extension gaps perceived as constraints**

S.No	Constraint particulars	Frequency	Per centage	Rank
1	Due to lack of knowledge and ignorance	42	70.00	IX
2	Non adoption of existing high yielding varieties	48	80.00	VI
3	Supply of seed by the Department not in time	35	58.33	X
4	Non adoption of seed treatment	55	91.67	II
5	Non adoption of proper sowing (way of broadcast) method and seed rate	54	90.00	III
6	Non adoption of sowing window in time	45	75.00	VIII
7	Non adoption of foliar nutrient management in rice fallow pulses	52	86.67	V
8	Non adoption of weed management practices	53	88.33	IV
9	Non adoption of pest management	46	76.67	VII
10	Non adoption of irrigation management	56	93.33	I

The table 4 depicted that Non adoption of irrigation management(93.33%) perceived as constraint, it might be due to two reasons one is due to the apprehension of withering of plants due to excessive moisture and another one due to non availability of water at that time . Non adoption of seed treatment (91.67%) as another constraint, it might be due to lack of awareness on benefits of it as it reduces the incidence of sucking pests. Non adoption of proper sowing (way of broadcast) method and seed rate(90.00 ) due to apprehension of poor germination and ignorance .Non adoption of weed management practices(88.33%) is another major constraint, it might be due to lack of knowledge on weedicides suitable for different weeds, lack of moisture at that time and apprehension about the injury to the crop. Non adoption of

foliar nutrient management in rice fallow pulses (86.67%).In rice fallow pulses application of fertilizers not possible and for better growth and yield it is very required to spray of foliar nutrients but most of farmers not followed.Non adoption of existing high yielding varieties(80.00).there are certain YMVresistant varieties like LGB787,TBG104,GBG1 of black gram and TM96-2,IPM2-14 and LGG460 varieties of green gram are available but most of the farmers not adopted. So there is a need to conduct Front Line Demonstrations in the farmer's fields. On adoption of pest management (76.67%).It might be due to lack of knowledge on pests, ignorance and negligence.Non adoption of sowing window in time (75.00%) were the major constraints

### Conclusions

Low soil fertility was the major constraint in pulses productivity ,non application of

FYM and green manure years together followed by the incidence of yellow vein

mosaic virus , labour scarcity and incidence of low temperatures and fog during flowering period *i.e* first fortnight of January, Weed infestation particularly vicia, cuscuta. xanthium and Echinochloa, Non adoption of irrigation management, Non adoption of seed treatment, Non

adoption of weed management practices were the major constraints in pulses production .There is a need to conduct more no. of FLDs in the farmer fields and training programmes to the farmers and timely supply of inputs in time or make available to the farmers prior to the season.

#### **COMPETING INTERESTS DISCLAIMER:**

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

#### **References :**

1. Reddy A A ( 2010). Regional disparities in food habits and nutritional intake in Andhra Pradesh, India. *Regional & Sectoral Econ Stud* 10 (2) :125-134

2. Choudhary A K (2013). Technological and extension yield gaps in pulse crops in Mandi district of Himachal Pradesh, India. *Indian J of Soil Cons* 41:88-97

3. S Saravanakumar 2018 Impact of Cluster Frontline Demonstration on Black gram in Western Zone of Tamilnadu *Journal of Krishi Vigyan* , 7(1) : 136-139

4. Venkata Rao P, Chittibabu G and Chinnam Naidu D (2020) Impact of Front Line Demonstrations on Integrated Crop Management in Rice Fallow Black Gram in Srikakulam District of Andhra Pradesh *Journal of Krishi Vigyan*, 9, ( 1) 189-192