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ICM in Groundnut

Among the oilseeds, groundnut is an important crop grown nearly in 6000 ha in Srikakulam district, of north coastal Andhra Pradesh during rabi season. Non adoption of certain recommended practices is highly influencing the production of groundnut in Srikakulam district. KVK, Srikakulam has demonstrated Cluster Frontline Demonstrations to address the ICM practices in groundnut in two clusters each with 25 farmers. Yield advantage of 18.8% was noticed by farmers after adopting the ICM practices, and Rs.18320/- increase in net income per ha.

INTRODUCTION

Groundnut (*Arachis hypogaea* L.) is an important oilseed crop in India which occupies first in terms of area and second position in terms of production. Groundnut crop area in India is nearly 40 lakh ha, where production and yield are estimated at 37.70 lakh tonnes and 931 Kg/ha respectively during 2018-19. Among the oilseeds groundnut is important crop grown nearly in 6000 ha in Srikakulam district, of North Coastal Andhra Pradesh during rabi season. The mean production and yield are 6560 MT and 1550 kg/ha during 2018-19. Though, the production statistics are better compared to country, farmers are at loss in production due to soil borne diseases. The major problem identified in the district is Collar rot which is soil borne and cause nearly 40% losses in Groundnut crop. Also non adoption of certain integrated pest management measures and crop management practices (Non application of gypsum) leads to crop loss. To address the above problems, KVK has taken up Cluster Frontline Demonstrations (CFLDs) under NFSM in the selected area with the selected farmers on Integrated Crop Management (ICM) in groundnut crop.

MATERIAL AND METHODS

Cluster name : Kusumapolavalasa, Srikakulam district
Area : 25 acres
No of farmers : 25

KVK has initiated the following ICM measures in Groundnut crop to adopt by the cluster farmers

- 1) Seed treatment with Tebuconazole 2% DS @ 1g/Kg seed
- 2) Soil application of *Trichoderma viridi* @ 2kg/acre
- 3) Erection of yellow and blue sticky traps @ 5/acre

4) Erection of Pheromone traps @ 4/acre against *Spodoptera litura*

5) Neem oil application @ 5ml/l

6) Gypsum application @ 200 kg/acre

7) Foliar application of micro nutrient mixture @ 5g/l

Need based plant protection chemical (Emamectin Benzoate@ 0.5g/l)

PLAN, IMPLEMENT AND SUPPORT

To promote the above mentioned integrated crop management practices for higher yields in groundnut, Krishi Vigyan Kendra, Srikakulam has been taken up different strategies and organised extension activities.

A. EXTENSION ACTIVITIES

- Critical problems which effecting the yield were studied and elaborated to the farmers through awareness programmes.
- Four capacity building programmes, two interaction meetings were conducted to the cluster selected farmers.
- Skill demonstrations on seed treatment, erection of pheromone traps were organised.
- Exposure visits in collaboration with department of Agriculture, ATMA and other agencies.

B. CRITICAL INPUTS SUPPLIED

Tebuconazole, Pendimithalin, Formula-4, Gypsum, Sticky traps, Pheromone traps, Neem oil, Emamectin



benzoate, *Trichoderma viridi*.

C. LITERATURE

Literature developed in regional language (Telugu) "Verusanaga saagu – samagra yaajamanyam" and distributed to the farmers and extension functionaries. Diagnostic bulletin on "Groundnut" published by ANGRAU also distributed to farmers.

OUTPUTS

Seed treatment with tebuconazole in groundnut has shown impact and collar rot incidence was only 6-8%, whereas in the non-adopted fields, it was observed 15-18%. Also due to the erection of yellow and blue sticky traps in the field the sucking pest incidence was drastically decreased and amount on plant protection was reduced.

PARTNERS IN TECHNOLOGY TRANSFER

- KVK, Amadalavalasa: Organisation of CFLDs, Capacity building programmes, awareness programmes, demonstrations, supply of critical inputs
- NFSM: Funding for promotion of ICM in Groundnut in the KVK selected villages in the district.
- DAATT Centre, Srikakulam: Technical expertise and timely suggestions to farmers on pest and disease surveillance.
- Department of Agriculture: Motivating farmers towards technology and supply of seed on subsidy basis.

Table 1. Results of cluster frontline demonstrations in comparison with normal method cultivation

S. No	Particulars	ICM in Groundnut	Famers practice (Normal cultivation of Groundnut)
1	No of location	2	2
2	No of farmers	25	5
3	Yield (Q/ha)	28.25	23.75
4	Cost of cultivation (Rs/ha)	42275	40525
5	Gross returns (Rs/ha)	127125	106875
6	Net returns (Rs)	84850	66530
7	B: C ratio	1: 3.0	1: 2.63

Table 2: Plant Protection advantages

S.No	Particulars	ICM in Groundnut	Famers practice (Normal cultivation of Groundnut)
1	Collar rot incidence %	6-8%	15-18%
2	Spodoptera incidence (Larvae/ 5 plants)	1	3
3	Sucking pests incidence (% leaf area damage)	8-10	20-22%

3: Benefits of technology over normal practice

S.No	Particulars	Increase/ decrease
1	Increase in Yield /ha	18.8 %
2	Increase in net returns (Rs/ha)	Rs 18,320/-

A. Horizontal spread of the technology

2018-19		2019-20	
Area (Ha)	No of Farmers	Area (Ha)	No of Farmers
180	260	200	310

B. Economic Impact

Particulars	Unit	Area adopted ICM Groundnut (ha)	Increase in Production / Net returns
Yield advantage (Kg/ha)	500	200	1,00,000 kgs
Increase in net returns (Rs./ha)	18320/-	200	Rs. 9,52,64,000

CONCLUSION

ICM is the best approach for increasing the crop performance and production. The same was resulted through CFLDs on ICM in groundnut. Yield advantage of 18.8% was noticed by farmers after adopting the ICM practices, and Rs.18320/- increase in net income per ha over the regular method of cultivation practices/farmers method. The benefit cost ratio is also higher compared to the farmer's method and pest load is also decreased in the ICM adopted plots. After observation of the results, the fellow farmers in the nearby villages adopted the same and the spread of technology was noticed in 200 ha during 2019-20. To reduce the yield gaps and for doubling the farmer's income these ICM measures will be helpful and need to promote the same by extension functionaries.