

Notable achievements of Agricultural Research Station, Seethampeta, Srikakulam district.

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1	Name of the research station	: Agricultural Research Station, Seethampeta, Srikakulam district.
2	Year of establishment	: 01.04.1986
3	Mandate crops	:
	➤ Testing the performance of improved varieties of cereals, millets, pulses, oil seeds and fodder crops. ➤ Soil and water conservation in the agency area. ➤ Development of organic/natural farming package for major crops in the agency areas. ➤ Identification of profitable and non-traditional crops and cropping systems. ➤ Integrated farming system research for economic upliftment of tribals. ➤ Promotion of processing and storage of millets.	
4	Notable achievements (in bullets)	:

I. RESEARCH:

New High yielding varieties of different crops are being tested for their performance from time to time and the identified cultivars with better adaptability are recommended for general cultivation to the tribal farmers. Main thrust is on familiar crops of this tribal belt like Paddy, Redgram, Cotton, Maize, Bajra, Jowar, Turmeric, Groundnut and Ragi. Due consideration is also being given to testing of oilseed crops like Sesame, Mustard and Sunflower. Experiments on fertilizer management of field crops were also planned to suit the poor economic conditions of the tribal farmers. The suggestions made by the University Officers, consultant advisory groups and members of other review teams regarding the use of organic manures have been taken into consideration and programmes formulated to study the performance of these manures on the grain yield of rice and ragi. Efforts are being made to use the abundantly available natural flora to the maximum extent in order to reduce the cost of cultivation, especially on the chemical fertilizers.

Similarly, improved varieties of several crops have been introduced thus replacing the traditionally grown tall growing, low yielding with longer duration ones. A specific case in point is with intensive efforts of the research station, 100 percent of the area under Rice is now occupied by RGL-2537, MTU-7029, MTU-1075, MTU-1121, RGL-2538, MTU-1001 thus replacing the traditional Rice varieties like Budamalu, Orissa-sannalu, Kondangi Danyam. In crops like Bajra and Maize, it is desirable to introduce synthetic varieties like WCC-75 (Bajra) and Aswini (Maize) as the seeds can be reused, which is the most predominant practice by the tribal farmers and the cost of hybrid seed is very high.

I. Contributions, remarkable achievements so far:

RICE:

- In Paddy varieties RGL 2537, Swarna, BPT 5204 and RGL 2332 in long duration group; RGL 2538, MTU 1001 RGL 8924 and MTU 1075 in medium duration category; WGL 3825 (Kesava), RGL 2624 (Pushkala) MTU 1010, MTU 9993, MTU 1156 and MTU 1121 in early duration category recorded higher grain yields and found suitable to this tribal belt and the area under these varieties is fast spreading. There was significant response for N up to 100 kg N/ha in different varieties.
- Among scented rice varieties RNR-2465 recorded higher yield (4231 kg/ha) and which was significantly superior over the other two varieties namely RNR-18833 and Sharbhathi.
- The Integrated Nutrient Management studies on rice Treatments received 60 Kg N/ha in combination with green leaf manures are found equally good to those receiving 90 Kg N/ha alone on an average 600 Kg/ha increased grain yield was observed when these green manure crops were incorporated in-situ over the recommended dose of fertilizer. The impact of these green manure crops was observed to the extent of 25% reduction in the application of recommended dose of NPK fertilizers.
- Among different green leaf manures studied for organic farming in rice, Aviseenia followed by neem leaf manure and pongamia leaf manuring proved superior. Among organic manures poultry manure excelled over others.
- Application of recommended doses of N, P₂O₅ K₂O and Zn @ 120:60:40:50 kg/ha during *rabi* resulted in maximum yield and the yield increment ranged from 14.41 to 35.45 in different treatments. The

response of rice in terms of kg grain produced per kg of N, P and K were found to be in the order of 4.08, 5.76 and 9.0 during *rabi* in Srikakulam District.

- Under direct sown condition cultures MTU-1010 and MTU-9993 were found superior over MTU-1006 and RGL-2624. Further Butachlor spraying as pre-emergence application was quite effective in controlling the weed infestation in the early stages of crop growth.

Ragi :

- Among several Ragi varieties screened from time to time for their suitability to this tract Cultures like Srichaitanya (VR-847), Bharati (VR 923), VR-862, VR-762, VR-530, VR-822 and VR-914 are proved superior to Godavari and Ratnagiri varieties.
- Better yields were recorded with 50 Kg N/ha. Under integrated nutrient management studies application of FYM 5t/ha in combination with 40 kg N/ha produced grain yields on par with that of 60 kg N/ha. in ragi.
- Studies on different organic manures and their response in ragi productivity reveals that vermi-compost and poultry manure application recorded highest seed yield of 1540 kg ha⁻¹ which was closely followed by farm yard manure with a yield recording of 1483 kg ha⁻¹.

Sorghum:

- Cv. SPV-351 of Jowar a short duration variety identified as superior variety recorded 50% higher yield over long duration local variety. Application of 75 Kg.N/ha., gave maximum grain yield

Bajra :

- Bajra variety ICMV-221 proved consistent in its performance, suggesting its suitability to this tribal belt and recommended for cultivation. Cultures like BPH-4 and BPH-10 were also found to be promising over the ruling variety WCC-75. Bajra responded upto 75 Kg N/ha.

Sama :

- Three improved varieties of Sama viz., RAU-2, PRC-3, PRC-8 out -yielded the local variety and proved better for this tribal belt.

Korra :

- In Korra Prasad, Krishnadevaraya and Narasimhadevaraya varieties were identified as most suitable to this tribal belt.

Pigeonpea :

- LRG-52, MRG-66, LRG-44, PRG-158, LRG-30 and ICPL-332 are the redgram varieties with better adaptability to this belt.

Blackgram/Greengram:

- LBG-752, theegaminumu of blackgram and IPM-2-14, LGG-460 of greengram have performed well suggesting their suitability to tribal area of Seethampeta.

Cow-pea :

- The variety V-240 excelled all other varieties tested.

Bengalgram:

- Among the varieties screened ICCV-37 recorded the highest yield under assured irrigation conditions where as Cv.AKG-33 performed well under limited irrigation conditions.

Groundnut :

- K-6, Cv.ICGV.86347, Kadiri-3 and ICGS-11 has been identified as superior variety over the varieties (TMV-2, JL-24) under cultivation. New pre-released varieties were also tested for their performance and Cvs.MLTG-32, MLTG-37, MLTG-38 were found promising.

Sesame:

- YLM-66, YLM-17 is the proven variety for the tribal area of Seethampeta.

Mustard:

- Mustard crop is new introduction in the area and Cv. GM-1 and Kranti were found superior.

Sunflower:

- The sunflower varieties viz. EC-68414 and Morden responded favourably to nitrogen levels with 90 Kg N/ha recording good yields.

Safflower:

- JSF-1 Safflower variety recorded higher yield and was found suitable to this area.

Mesta:

- In Mesta variety AMV-4 found suitable to this tribal belt wherever retting facilities are available.

Identification of suitable crops during rabi in rice based cropping system:

- Among the sequence crops tested after paddy harvest, Groundnut among the oilseed crops and brinjal among the vegetables have yielded maximum monetary returns. The yields obtained from Gingelly, Greengram are not at all remunerative in the rice based cropping systems under limited irrigation conditions.
- In sunflower early sown crop (December) resulted in producing significantly higher yield than January sown crop and the area is increasing year after year in rabi.
- The result of the experiment conducted at 24 locations during *rabi* 2011-12 revealed that rice-maize system is most remunerative with a net return of Rs 25,207 per ha for green maize cobs. The return of rupee per rupee invested also higher with the rice-maize system (3.22).

Research on Integrated Farming System

- Under farming systems studies, Dairy component introduction in agency areas (especially unit of two jersey breed cow) enhances the returns of Rs50,000/- per annum. In addition to that, it yields about four tones of FYM for farm use.
- By conducting the survey at ARS, Seethampeta revealed that, by growing the agave crop in field bunds and extraction of fiber from agave yields an additional income of Rs.5000/- to Rs.6600/- per year, in addition to 4 to 9 working days month. (1 unit area =500m field bund).
- The results of IFS module shows that, introduction of vanaraja backyard poultry, vegetables in Kitchen garden mode and mineral mixture feed to the cattle increased the income of marginal farmers to the tune of 41-43 % over 6 locations of the Srikakulam Dist.
- Under NATP project on plant **bio-diversity** around **1300 indigenous accessions** were collected in Srikakulam and Vizianagaram districts and deposited with the national gene bank (1990-2000 to 2002-2003) including medicinal and aromatic plants.
- Hectic efforts were made to get the produce especially from the podu lands under organic Registration by “SISTA” organization in collaboration with I.T.D.A.

II. EXTENSION ACTIVITIES:

- As part of the extension activities, the teaching staff are actively involved in the Agricultural Market Committee level meetings and attended to all Agricultural Training Programmes conducted by Integrated Tribal Development Agency (I.T.D.A), Seethampeta besides attending to the training programmes conducted by departments of Agriculture.
- The scientists are associated in organizing the monthly T & V training programmes to the departmental officers of the cadre of Assistant Directors of Agriculture, Agrl. Officers of Srikakulam district. The Scientists are involved in the diagnostic teams and extensively touring in the district from time to time to monitor the crop conditions to suggest suitable remedial measures. The Scientists are involved in the teams constituted for the purpose of monitoring Natural calamities like cyclones, drought and to formulate contingency plans to mitigate the adverse seasonal conditions.
- Two Kisan Melas were successfully organized during the year 1997-98 and 1998-99 for the Revenue Division Palakonda, thus actively involving in the transfer of technologies.
- The Scientists of this Research Station are actively participating in the Government Programmes like Janma Bhoomi, Rythu Chaitanya Yatras, YSR Rhythu dinosthavam and YSR Polam badi enlightening the cultivators about the package of practices of different crops that are being grown in their villages. The Scientists are involved in the innovative programme of Rythu Polallo sastravethalu being organized by Govt. of A.P.