Proceedings of T & V monthly Workshop conducted at Regional Agricultural Research Station, Tirupati on 18.12.2015

Review of crop and climatic situations of Chitoor district

The monthly T&V workshop was conducted at Regional Agricultural Research Station, Tirupati on 18.12.2015. Dr T.Giridhara Krishna, Associate Director of Research presided over the meeting, while Sri V B Yugandar, DDA (SC) represented Joint Director of Agriculture, Chitoor. ADR, RARS, Tirupati reviewed the agriculture situation with inputs from ADAs of different sub divisions in Chittoor district.

Crop condition

Actual cropped area in the Chittoor district during Rabi 2015-16 is 24906 ha against normal area 56886 ha up to week ending 15-12-2015. Normal area under Groundnut crop during *rabi* is 12591 ha and actual area as on week ending 15-12-2015 was 1816 ha. Other major crop rice normal area is 34839 ha and actual area is 17509 ha as on 15-12-2015 in Chittoor district. Rice is in nursery to transplanting stage, Groundnut is in sowing to vegetative stage and pulses is in vegetative stage. Sugar cane is in harvesting stage.

Dr.T.Giridhara Krishna, Associate Director of Research, RARS,Tirupati invited the ADAs to present the seasonal conditions and crop condition of different divisions. He reviewed the seasonal conditions and area covered under different crops, pest and disease situation in the district. He also requested the department officials to give details of varieties of respective crops grown in their divisions.

The Assistant Directors of Agriculture from eleven divisions of Chittoor district presented the seasonal conditions, crop conditions and pest problems in their respective divisions. Department Officers mainly brought forward the crop cultivation constraints like alternate crops for late sowing in rabi season, pest management in different pulse crops, paddy leaf drying, micro nutrient management and seasonal pest and disease management during Rabi season due to prevailing cold climate. The scientists have also interacted on the constraints raised by the ADA`s and discussed about pest management in red gram.

Sri. V B Yugandar, DDA (SC), and Joint Director of Agriculture representative Chittoor presented the district agricultural scenario. Dr.G.Krishna Reddy, PS (Agro) explained about the rabi groundnut cultivation practices, time of sowing for Gingelly crop and sunflower

cultivation. Dr.L.Prashanthi, PS (Breeding) explained about pulse crops for rabi season. Dr.A.Rama Krishna Rao, SS (Ento) presented the control measures of various pests in the standing crops. Dr.M.Subba Rao, PS (Millets) & Head, ARS, Perumallapalli explained about rice, ragi, maize and millets cultivation aspects in rabi season. Dr.C.Ramana, PS (Farm Mechanisation) explained about preparatory cultivation and sugarcane ratoon management machinery usage and Dr.Reddikumar explained about disease management in Groundnut and Rice.

1. List of Officers and Scientists who participated T&V monthly workshop

S.No	HEAD QUARTER	DESIGNATION	NAME
	DEPARTEMENT		
1.	Chittoor	JDA Representative	V B Yugandar, DDA (SC), Chittoor
2.	Srikalahasti	ADA (R)	Sri.S.Raju
3.	Satyavedu	ADA (R)	Sri. D.Mallikarjunaiah
4.	Tirupati	ADA (R)	Sri.V.Raghu veera Prasad
5.	Palamaneru	AO (Tech)	Smt. M.Raqueeba
6.	Punganur	AO (Tech)	Sri.C.V.Karunakara Reddy
7.	Piler	MAO CG Gallu	Sri. C.Sanjeevi Reddy
8.	Chittoor	AO (Technical)	Sri.G.Khadar Basha
9.	Nagari	MAO Nagari	Smt. B.Mamatha
10	Chittoor	ADR (R)	Sri. G.Ramesh Babu
	RARS, TIRUPATI		
11	RARS, Tirupati	ADR	Dr. T.Giridhara Krishna
12	RARS, Tirupati	Principal Scientist (Agro.)	Dr. G.Krishna Reddy
13	RARS, Tirupati	Principal Scientist (Breeding)	Dr.L.Prashanthi
14	RARS, Tirupati	Principal Scientist (Engg.)	Dr.C.Ramana
15	RARS, Tirupati	Principal Scientist (Breeding)	Dr. R P Vasanthi
16	RARS, Tirupati	Scientist (Breeding)	Dr.E.Venkataramana
17	RARS, Tirupati	Senior Scientist (Breeding)	Dr.K.John
18	RARS, Tirupati	Senior Scientist (Path)	Dr.M.Reddi Kumar
19	RARS, Tirupati	Senior Scientist (SS)	Dr. K.V.Nagamadhuri
20	RARS, Tirupati	Senior Scientist (Ento)	Dr.A.R.K.Rao
21	RARS, Tirupati	Scientist (Physiology)	Dr.P.Latha
22	RARS, Tirupati	Senior Scientist (Agromet)	Dr.T.Prathima
23	RARS, Tirupati	Scientist (SS)	Dr.P.V.R.M.Redy
24	RARS, Tirupati	Scientist (Breeding)	Dr.A.Srividya
25	RARS, Tirupati	Scientist (Agro)	Sri.P.Maheswara Reddy
26	RARS, Tirupati	Scientist (Breeding)	Dr.V L N Reddy
27	RARS, Tirupati	Scientist (Agronomy)	Dr.S.Tirumala Reddy
28	RARS, Tirupati	Scientist (Breeding)	Dr.Y.Amaravathi
29	RARS, Tirupati	Scientist (Extn)	Dr. Kadiri Mohan
30	RARS,Tirupati	Senior Scientist (Physiology)	Sri.A.R.Nirmal Kumar
	ARS, Perumallapalli		
31	ARS,Perumallapalli	Principal Scientist (Millets)	Dr.M.Subba Rao
32	ARS,	Scientist (Agro)	Dr.N.V.Sarala

S.No	HEAD QUARTER	DESIGNATION	NAME
	Perumallapalli		
	DAATTC, Chittoor		
33	DAATTC, CTR	Coordinator	Sri.S.Rajashekar Naidu
34	DAATTC, CTR	RA (CP)	Sri. N.Kiran Kumar
	KVK, Kalikiri		
35	KVK Kalikiri	Programme Coordinator i/c & SMS (Extn)	Dr.P.B.H.Reddy
	AR KVK, Tirupati		
36	AR KVK,Tirupati	SMS (CP)	Dr.S.Sreenivasulu

2. List of constraints and issues discussed/messages developed

- Groundnut varieties for late sowing in rabi
- Pest management in redgram
- ratoon crop management in sugarcane.
- Pest and disease management in rice nurseries
- Seed rate for machine transplanting of rice

3. Lesson plan and visuals developed

- Rice, Groundnut & pulses management practices for rabi cultivation suggested.

4. Any other information on the workshop, coordinators want to bring to the notice to the Director of Extension, ANGRAU and Commissioner of Agriculture, Govt. of AP

5. Remarks-

IMPACT POINTS

RICE

The rice crop sown in late *kharif* season in Chittoor district is in tillering stage. In some parts of the district main field preparations are going and nurseries are growing. Need based plant protection measures may be taken up to control pest and diseases. The production recommendations for the month of December, 2015 for rice crop is given below:

Nursery Management

- Apply 2 kg Nitrogen (one kg before seeding and one kg after 12-14 days of sowing), 1 kg phosphorus, 1 kg potash as basal application.
- After 10 days of sowing apply Carbofuran 3G granule @160 g/cent area of nursery or Monocrotophos @1.6 ml/l or Chlorpyrifos @ 2.0 ml/l. Before 7 days of transplanting apply 160 grams of Carbofuran granules mixed with sand for every one cents of nursery.

Fertilizer Management

- Based on the stage of the crop, apply second or third dose of fertilizer.
- Drain out the field before N top dressing and irrigate the field after 2 days only
- Use coated or modified urea materials like neem coated urea, sulphur coated urea, and gypsum coated urea as basal where top dressing is not possible due to excess water

Pest and Diseases Management

Brown Plant Hopper: IPM Practices to control BPH

- While transplanting, form the alley ways with 25-30cm distance for every 2m. distance
- Application of Carbofuran 3G granules@10kg/acre, if not applied in nursery
- Judicious application of Nitrogen fertilizers
- Intermittent drying of the fields
- Spray Monocrotophos@ 2.2ml+ DDVP 1 ml/l or Etofenprox@ 2ml/l or Buprofezin @ 1.5ml/ or Dinotefuran 20%SG @ 0.4g/l.

Leaf folder management

- Judicious application of Nitrogen fertilizers
- Spray Quinalphos @2ml/l or Cartap Hydrochloride 50SP @ 2g/l or Flubendiamide 0.2ml/l

Stem borer management

- Clipping leaf tips while transplanting to destroy egg mass while transplanting
- Monitor the incidence through Pheromone traps @ 4/acre
- Application of Carbofuran 3G granules@ 10kg/acre or cartap hydrochloride 4G @ 8kg/acre, if not applied in nursery
- Spray Chlorpyrifos @2.5ml/l or Cartap Hydrochloride 50SP @ 2g/l

Groundnut

Groundnut crop sown in the month of July and August first week in the district was harvested and land preparation is underway in many mandals in the district for cultivation of *rabi* groundnut.

Varieties for rabi cultivation

- Groundnut varieties, Dharani, Narayani, Abhaya, Kadiri 6, TAG 24, Greeshma, Rohini and Bheema (bold) are recommended for rabi cultivation. Dharani variety is better than other varieties in respect to yield tolerance to moisture stress, Water use efficiency, shelling out-turn, tolerance to soil borne diseases and groundnut bud necrosis virus.

Land Preparation

- Land preparation need to done with primary tillage implements for better production and usage of seed-cum-ferti drill is recommended for sowing to reduce sowing cost.

Time of sowing

- Optimum time of sowing is up to December 15th for *rabi* Groundnut cultivation.

Seed treatment

- Seed rate of 75-80 kg kernals per acre is recommended for rabi sowing. Seed treatment with Tebuconazole @1g/kg seed or Mancozeb @3g/kg seed or Carbendazim @2g/kg seed is recommended. To control Groundnut bud necrosis virus seed treatment with Imidacloprid @2 ml /kg seed is recommended. In areas where stem and root rot is endemic seed treatment with *Trichoderma vidire* @ 4 gr/kg of seed is recommended.

Pest Management

Thrips

- Optimum plant population: Maintain optimum seed rate to have 44 plants / m^2
- Seed Treatment: Seed treatment with Imidacloprid 600FS @ 2ml + 4ml water per kg seed and shade dry for 30 min, then treat seed with Mancozeb @3g/kg seed.
- Border crop: Border crop with jowar/bajra (4 rows)
- Spraying systemic insecticides before 20 DAS: Spray monocrotophos@1.6ml/l water or Imidacloprid @ 0.3ml/l water before 20DAS.
- Maintain the crop without weeds particularly *Parthenium*

Spodoptera litura

- Monitor the incidence by using pheromone traps @ 4/acre
- Collection and destruction of egg mass and early instar larvae
- NSKE 5% at egg and 1st instar larval stage
- Spray NPV @ 100 LE/acre when the larvae are in second instar stage
- When defoliation exceeds 20-25% Spray Chlorpyrifos @ 2.5ml/l, or Thiodicarb 1g/l or Novaluron 1ml/l or Chlorfenapyr 2ml/l or Emamectin Benzoate @ 0.2g/l.

PULSES

IMPACT POINTS:

- Pod borers (*Maruca, Helicoverpa* and podfly):Apply insecticides for the control of *Maruca* otherwise severe damage will result in complete flower drop. At flowering stage (for *Maruca, Helicoverpa*) spray Chlorpyrifos @ 2.5ml+ DDVP @1ml/l or Thiodicarb 1g/l. At pod formation stage (podfly) spray Monocrotophos@ 1.6ml + DDVP 1 ml/l.

Blackgram:

- Remove YMV affected plants at early stage and spray neem oil against sucking insects pest at 20 Days after sowing.

Finger Millet

Management practice's of late *Kharif* finger millet

- For late *Kharif* crop, if is vegetative stage apply urea 12 kg per acre has to be applied as top dressing.
- If blast is noticed spraying with Carbendazim @ 1gm/l of water is recommended in the December month (as climate is congenial for occurrence of blast disease).
- At harvesting stage the ear heads turns into brown colour and plants will change to pale green/yellow colour. Harvest the mature ear heads first and dried properly for thrashing.

Management practices for Rabi finger millet

- Sowing time for rabi : up to December month end
- Varieties recommended for rabi : Godavari, Sapthagriri, Bharathi, Vakala and Hima (White ragi)
- Seed treatment with Carbendazim @ 2g/kg seed (or) Mancozeb@ 3 g/kg seed is recommended to avoid the diseases in seedling stages.
- For direct sowing 4 kg of seed is recommended for one acre. For transplanting 2.5 kg seed is recommended.
- Raised nursery beds have to be prepared in fine tilth soil for proper drainage of excess water. Nursery grown in 5 cents is sufficient for transplanting in one acre field.
- 18-21 days aged seedlings has to be transplanted in main field to get the higher yields
- A spacing of 20-22 cm between rows and 8-140 cm between the plants is recommended to maintain the sufficient plant population to achieve better yields.
- At the time of transplanting, application of 24 kg Nitrogen, 16 kg Phosphorus and 12 kg Potash giving fertilizers is recommended for one area.

Gingelly

- Recommended time of sowing Gingelly is from 2nd week and 3rd week of January. If the crop is sown before that crop will be damaged by Phyllody disease.

Sunflower

- Recommended time of sowing sunflower for rabi cultivation is up to December month end.

Sugarcane

Crop Management Practices for Planting

- December - January planting time was found to be good for early varieties February planting were found to be good for mid late varieties and March Planting were found to be good for late varieties
- Higher cane yield was obtained by using three budded sets as planting material
- For early varieties 80 cm and for mid late varieties 90 cm spacing is recommended. paired row planting 60 cm x 120 cm is also advisable with drip irrigation for getting higher cane yields
- Thorough field preparation is necessary about 45 cm depth of the soil
- Recommended to take of the top one third or two thirds of the stalk for preparing the seed materials
- at the time of last ploughing 25 t/ha farm yard manure or 12 t/ha press mud cake is recommended and entire dose of 112 kg P_2O_5 thorough SSP and 112 kg K_2O though MOP is to be applied at the time of planting

Harvest management in Sugacane for increasing cane yield and juice quality

- Harvest only matured cane. The optimum harvesting age normally from 10-12 months depending upon the variety.
- Early varieties reach peak maturity at around 10th month. Hence first harvest early varieties to avoid pith formation in the cane.
- Harvesting of cane should be done at ground level, as the lower portion of cane is rich in sucrose compared to the top portion.
- Use clean knives for cane cutting.
- While harvesting cutting canes in to small bits should be avoided because greater the number of bits more will be the cut area of the cane being exposed to attack of bacteria and fungi thus leading cane deterioration.
- Keep the harvested cane under shade covering with trash and sprinkle water also reduces staling cane loses.
- Avoid cutting of water shoots, trash and twining weeds.
- Harvest the cane of flowering variety within 8-10 weeks after flowering of cane.

Ratoon Management for improving cane yield and juice quality

- where plant crop is affected by insect pests and red rot and severe diseases must be burnt and avoid ratoons
- December to February harvested crops would given best ratoons
- for better ratoon crop harvest the plant crop close to the ground level
- disposal of trash an important task soon after harvest of the plant crop
- don't burn the t rash and trash should be used as mulching after initial ratooning operations are completed. Trash mulching is use full in extremes of weather conditions and also suppress weed growth
- Stubble shaving facilitates healthy underground buds to sprout
- Off barring facilitates to loosen the soil thereby to avoid soil compaction
- Gap filling: 20 per cent yield may increasing in ratoon crop by filling gaps with pre germinated single bud settlings or clumps can be up rooted and cut in two quarters and planted in the gaps
- Fertilizer application: Entire dose of phosphorus (112 kg P2O5) and 150 % RDN 1/2 dose of Nitrogen and full dose of potash (112 kg K2O) should be applied soon after stubbles shaving and off barring.
- Irrigations are required at frequent intervals

Agricultural Engineering

Mini Dal-mill suitable for small and marginal farmer of the Chittoor district

- Mini dal mill with capacity of 40 kg capacity is available in Akola, Maharashtra. Mini dal mill will demonstrated in the T& V meeting in the month of February 2016 after installation in RARS, Tirupati.

Seed rate requirement in machine transplanting

Seed rate required is 12 kg /acre for fine seed varieties and 15 kg /acre for coarse varieties based on to its 1000 number grain weight.

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