

Land resource information for sustainable agriculture development in Andhra Pradesh

Dr L G K Naidu

*Former Head, Regional Center,
National Bureau of Soil Survey and Land Use Planning, Bangalore*

Response of Aerobic Rice to Sub Surface Drip Fertigation

V Prasada Rao, B Venkateswarlu, A S Rao, Balkrishna Yadav, K L N Rao and P Prasuna Rani
Department of Agronomy, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

A field experiment was carried out for two consecutive years (2012-13 and 2013-14) on a sandy loam soil of Jain Hi-Tech Agri Institute, Jalgaon, Maharashtra with an objective to study the response of aerobic rice to sub surface drip fertigation. In aerobic rice, plant height, number of tillers m² and drymatter production at all the stages of observation were significantly the highest with irrigation schedule at 175% Epan compared to that of 100% Epan. All the growth parameters and yield viz., plant height, drymatter accumulation and yield increased with the increase in N level from 90 to 180 kg N ha⁻¹ and maximum values were registered with 180 kg N ha⁻¹.

Key words: *Aerobic rice, N Fertigation, Sub surface drip irrigation.*

Response of Maize to Different Levels of Nitrogen under Zero-till Conditions after Rice

N V Lakshmi, R Veera Raghavaiah and G Subbaiah

Department of Agronomy, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Field experiments were conducted at Agricultural College Farm, Bapatla, to study the response of maize to different N levels under zero-till conditions after rice during *rabi* seasons of 2008 and 2009. The experiment was conducted in split plot design with four replications. The treatments consisted of four nitrogen levels (No: No nitrogen, N1: 75 kg ha⁻¹, N2: 150 kg ha⁻¹ and N3: 225 kg ha⁻¹) as sub plots and the six nitrogen management practices (M₁:120 kg N ha⁻¹, M₂:180 kg N ha⁻¹, M₃: 240 kg N ha⁻¹, M₄: 120 kg N ha⁻¹+ GLM @ 10 t ha⁻¹, M₅: 180 kg N ha⁻¹+ GLM @ 10 t ha⁻¹ and M₆: 240 kg N ha⁻¹ + GLM @ 10 t ha⁻¹) imposed in preceding rice crop as main plots. The soil was sandy clay loam in texture, slightly alkaline in reaction, low in organic carbon and available N and medium in available phosphorus and high in available potassium. The study of the investigation revealed that each unit increase in N level led to significant increase in growth characters and yield of maize. Popular maize hybrid pioneer 30 V 92 was used for the study. Data collected on growth characters viz., plant height, dry matter accumulation, number of number of days to 50% tasseling, number of days to 50% silking, kernel yield, stover yield, economic returns were significantly influenced by different N levels given to maize. Higher plant height (231.1 and 247.3 cm, respectively) and dry matter accumulation of maize at tasseling (4078 and 4950 kg ha⁻¹, respectively) and at maturity (13224 and 13429 kg ha⁻¹, respectively) was recorded with application of 225 kg N ha⁻¹ during both the years of study. The plot that received 240 kg N ha⁻¹ + GLM @ 10 t ha⁻¹ in *kharif* rice (M₆) as main plot and 225 kg N ha⁻¹ to maize (N₃) recorded higher net returns and B: C ratio during both the years of study.

Key words: *Glyricidia leaf manure, Maize, Nitrogen levels, Zero-till conditions.*

Soil physical and Physico- Chemical Properties as Influenced by Integrated Nutrient Management Practices in Maize-Maize Cropping System

A V Nagavani and P Subbian

Department of Agronomy, S V Agricultural College, Tirupati 517 502, Andhra Pradesh

ABSTRACT

A field experiment was conducted to evaluate the integrated use of organic and inorganic source of nutrients on soil physical and physico-chemical properties in maize-maize cropping system during *kharif* and *rabi* seasons of 2008 and 2009 at the irrigated upland farm of Tamil Nadu Agricultural University, Coimbatore. The experiment was laid out in randomized block design with three replications and ten treatments. The results revealed that application of 100 per cent RDF through poultry manure markedly improved the soil physical properties i.e., reduced the bulk density, increased the pore space, hydraulic conductivity, water aggregate stability and water holding capacity. Physico-chemical properties were improved i.e., reduction in soil pH, EC and considerable built up in soil organic carbon content at the end of two year cropping sequence.

Key words: *Integrated nutrient management, Maize, Soil physical properties*

Studies on the Effect of Plant Density, Type of Cutting and Method of Planting on Root Yield of Medicinal Coleus [*Coleus forskohlii* (willd) Briq.]

Ch Chandrasekhar Rao, R Chandrasekhar and M Rajkumar

Department of Agronomy, College of Agricultural, Rajendranagar, Hyderabad 30

ABSTRACT

The results revealed that closer spacing (60cm x 20cm) recorded maximum root yield, rooted cutting plants yielded higher, ridge and furrow method recorded higher yields and K-8 variety yielded more. Higher yields in closer spacing could be due to more population resulted in higher cumulative yields. Higher yields with rooted cuttings could be due to more age and established root system. With Ridge and furrow method, yields are higher could be due to more tuberous roots. K-8 variety yielded higher might be due to genetical control of dry matter partitioning and more leaf area.

Key words: *Plant density, Medicinal coleus, Yield.*

Effect of Plant Density and Fertilizer levels on Productivity and Economics of Popcorn (*Zea mays everta*) in Kharif Season

B Jyothi Basu, Y R Jadhav and S V Patil

Division of Agronomy, College of Agriculture, Mahatma Phule Krishi Vidyapeeth,
Kolhapur, (Maharashtra) 416 004

ABSTRACT

A field experiment was conducted on medium black soils of Post Graduate Research Farm, College of Agriculture, Kolhapur, Maharashtra, during *kharif* 2012 on Popcorn. The treatment consisted of three fertilizer levels viz., 75% RDF (90:45:30 Kg NPK ha⁻¹), 100% RDF (120:60:40 Kg NPK ha⁻¹) and 125% RDF (150:75:50 Kg NPK ha⁻¹) and four plant spacing levels viz., 60 x 15 cm², 60 x 20 cm², 75 x 15 cm² and 75 x 20 cm². The experiment was laid out in randomized block design (Factorial) with twelve treatment combinations and the treatments were replicated thrice. The yield contributing characters viz., number of cobs per plant, length and diameter of cob, number of grains cob⁻¹, grain yield per cob were significantly higher with 75 x 20 cm² plant spacing over 60 x 15 cm², except 60 x 20 and 75 x 15 cm². However, the number of cobs ha⁻¹ was significantly higher under 60 x 15 cm² over 75 x 20 cm². The grain and stover yields of popcorn were significantly higher under 75 x 20 cm² plant spacing (29.64 q ha⁻¹) over 60 x 15 and 75 x 15 cm², except 60 x 20 cm². The harvest index was significantly higher with 75 x 20 cm² over 60 x 15 cm². Application of 150:75:50 Kg NPK ha⁻¹ (125% RDF) and 120:60:40 Kg NPK ha⁻¹ (100% RDF) were at par and recorded significantly the higher yield contributing characters as compared to 90:45:30 kg NPK ha⁻¹ (75% RDF) resulting into significant increase in grain (30.72 and 28.59 q ha⁻¹) and stover yields (64.24 and 61.91 q ha⁻¹) under 100% and 125% RDF with no significant difference between them. Amongst, the plant spacings the 75 x 20 cm² recorded the maximum gross and net monetary returns (Rs. 83,267 and 52,234 ha⁻¹) and also benefit cost ratio (2.65). Application of 125% RDF recorded the maximum gross and net monetary returns (Rs. 86,158 and 53,139 ha⁻¹) followed by 100% and 75% RDF. The benefit cost ratio under 125% and 100% RDF was almost similar and the lower benefit cost ratio was recorded under 75% RDF.

Key words: Fertilizer levels, Plant densities, Popcorn.

Response of Sunflower Hybrid ApsH 66 to Sulphur And Borax Under Varying Environments In Semi Arid Conditions

K Kanaka Durga, V Radhakrishna Murthy, N V Naidu and R Ankaiah

Seed Research and Technology Center, Rajendranagar, Hyderabad 30

ABSTRACT

A field experiment to study the response of sunflower hybrid APSH 66 to sulphur and borax was conducted on red chalka soils of Seed Research and Technology Centre, Rajendranagar, Hyderabad during 2010-11, 2012-13 and 2013-14. The soil had 161.8 kg N, 32.4 kg P₂O₅ and 267.1 kg K₂O in available forms. Sulphur and Borax were tested in nine treatments to study their influence on seed yield by also taking into account the weather variables simultaneously. The results revealed that soil application of sulphur @ 10 kg ha⁻¹ and borax @ 1 kg ha⁻¹ significantly increased the sunflower yield by 14.5% and 11.64%, respectively over control. Interestingly, rise in average night temperatures by 1.1 degrees centigrade during reproductive phase favored ultimate sunflower seed yield.

Key words: *Borax, Seded yield, Sunflower, Sulphur, Weather.*

Effect of Micro-climate on Growth and Yield of Rice (*Oryza sativa* L.) under Semi-arid Conditions of A P

V R K Murthy, P Venkata Rao, K Kanaka Durga and Jyotibasud B

Department of Agronomy, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

A field experiment pertaining to “Effect of micro-climate on growth and yield of rice (*Oryza sativa* L.) under semi-arid conditions of A.P.” was conducted in *Kharif*, 2014. The experimental site was at the ARI farm of SRTC Rajendranagar. The soil was low in available N (154 kg ha⁻¹) medium in P₂O₅ (41 kg ha⁻¹) and K₂O (209 kg ha⁻¹). The layout was factorial randomized block design. The treatments were a combination of four rice genotypes viz., Tellahamsa, WGL (20471), Jagityala Sannalu (JGL 1798) and Anjana (JGL 1118) and four dates of sowing at 15 days interval from 15th June 1st August. Among the dates of sowing the July 15th sown crop yielded highest. Similarly, the genotypes Tellahamsa performed well over the other three varieties not only in plant growth characters but also in yield attributes and yield (18% more yield than all the varieties) owing to favourable trends in microclimatic regimes within its canopies. Particularly Absorbed Photosynthetically Active Radiation (APAR) and Radiation Use Efficiency (RUE) values were optimum in 15th July sown crop and Tellahamsa genotype.

Key words: *Growth, Micro-climate, Yield.*

Impact of Weather on The Yield and Stability of Rice Genotypes Under South West Monsoon Conditions

K Parimala, V R K Murthy, I Swarnalatha Devi and P Venkata Rao

Seed Research and Technology Centre, Rajendranagar, Hyderabad

ABSTRACT

A field experiment to study the response of thirty five rice genotypes to varying environmental conditions was conducted on sandy loam soil of Seed Research and Technology Centre, PJTSAU, Rajendranagar, Hyderabad during south west monsoon season, 2013. Three replications of all the genotypes were consistently transplanted on 1st July, 15th July, and 30th July, in randomized block design. It was established that all the thirty five genotypes were responsive to favourable environments irrespective of dates of transplanting. However, the genotype NLR 40058 produced significantly more yield in all the three dates of sowing and it was highest 5.04 t/ha when transplanted on 15th July. The genotype RNR 6841 yielded lowest (1.90 t/ha) when transplanted on 15th July, and trends were same for 1st and 30th July. The study indicated that rice sown on 15th July is exposed to favourable macro and micro conditions as compared to 1st and 30th July transplanted crops. Also, adequate sunshine and congenial air temperatures during the reproductive stage of NLR 40058 resulted in highest yield.

Key words: *Genotypes, Weather, Yield.*

Growth and Yield of Fingermillet [*Eleusine coracana* (L.)] as Influenced by Phosphorus Management Practices

S Kiran Kumar, Ch Pulla Rao , M Sree Rekha and P Ratna Prasad

Department of Agronomy, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

A field experiment conducted during *kharif*, 2015 on sandy soil of Agricultural College Farm, Bapatla. Experiment was laid out in randomized block design with nine treatments (T1: RDP @ 30 kg ha⁻¹; T2: 75% Recommended dose of inorganic phosphorus + FYM @ 3.75 t ha⁻¹; T3: 75% Recommended dose of inorganic phosphorus + Vermicompost @ 0.75 t ha⁻¹; T4: 50% recommended dose of inorganic phosphorus + FYM @ 7.5 t ha⁻¹; T5: 50% Recommended dose of inorganic phosphorus + Vermicompost @ 1.5 t ha⁻¹; T6: T1 + PSB @ 5.0 kg ha⁻¹; T7: T4 + PSB @ 5.0 kg ha⁻¹; T8: T5 + PSB @ 5.0 kg ha⁻¹; T9: No phosphorus.) and replicated thrice. The results indicated that the highest plant height at harvest (100.9 cm), drymatter production (566.0, 3068.0 and 6845.0 kg ha⁻¹ at 30,60 DAS and harvest stages), total tillers m⁻² (67.0, 72.7 and 74.3 at 30,60 DAS and harvest stages), grain yield (2200 kg ha⁻¹), straw yield (4550 kg ha⁻¹) and highest benefit cost ratio (1.73) was recorded with 50 % recommended dose of phosphorus + FYM @ 7.5 t ha⁻¹ + PSB @ 5.0 kg ha⁻¹ followed by 50 % recommended dose of phosphorus + Vermicompost @ 1.5 t ha⁻¹ + PSB @ 5.0 kg ha⁻¹ and significantly superior to the rest of the treatments.

Key words: *Fingermillet, FYM, Phosphorus management, PSB, Vermicompost.*

Drymatter and Yield of Rice as Influenced by Organics and Inorganics of Nitrogen

A Sowjanya, M Sree Rekha, V R K Murthy and P Prasuna Rani

Department of Agronomy, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

A field experiment was conducted at Agricultural College Farm, Bapatla, during *kharif* 2015-16 to find out the response of transplanted rice to nitrogen management through combined use of different organic sources and inorganic levels. Organic manures *viz.*, poultry manure, FYM and neemcake were used in this experiment. The experimental results indicated that highest drymatter accumulation (kg ha⁻¹) at maturity of rice was recorded with 50 per cent N applied as inorganic and remaining 50 per cent through poultry manure @ 125 per cent RDN and it was statistically at par with 125 per cent and 100 per cent N through only chemical fertilizers. The grain and straw yield of rice also followed the similar trend. Harvest index was not significantly influenced by the different nitrogen management treatments.

Key words: *Inorganic levels, Organic manures, Transplanted rice.*

Variability and Association Studies in Dry Direct Sown Rice (*Oryza sativa* L.)

Pavan Shankar H P, B Krishna Veni, J Dayal Prasad Babu and V Srinivasa Rao

Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Genetic variability and character association for 12 yield and quality traits were studied under dry direct sowing conditions in rice. The results of genetic parameters revealed high GCV and PCV coupled with high heritability and high genetic advance as percent of mean for filled grains per panicle and alkali spreading value suggesting an additive type of gene action. The remaining traits manifested low to moderate estimates for GCV and PCV, moderate to high heritability and low to high estimates for genetic advance as percent of mean indicating the preponderance of both additive and non-additive gene effects in controlling these traits. The results of correlation and path analysis studies indicated that positive direct effects coupled with positive correlation coefficients with plant height, ear bearing tillers, days to 50% flowering, panicle length, test weight, kernel breadth, L/B ratio and alkali spreading value. Hence, selection of the above traits would result in improvement of grain yield in rice.

Key words: *Correlation, Genetic parameters, Grain yield, Path analysis.*

Heterotic Studies for Yield and its Component Traits in Upland Cotton (*Gossypium hirsutum* L.)

**K Bayyapu Reddy, V Chenga Reddy, M Lal Ahamed, T C M Naidu and
V Srinivasarao**

Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Forty five intra-hirsutum hybrids along with their parents and check were evaluated to estimate the magnitude of heterosis for yield and fibre quality traits at Agricultural Research Station, Jangamaheswarapuram, Guntur during *kharif*, 2013-14. The standard heterosis was calculated over check hybrid NCS-145. The hybrid NDH 138 × RAH 1004 showed significant positive heterosis for seed cotton yield plant⁻¹ along with number of bolls plant⁻¹, uniformity ratio, elongation and lint yield plant⁻¹. The hybrid L 770 × G COT 16 showed significant positive heterosis for boll weight along with seed cotton yield plant⁻¹ over standard check.

Key words: *Fibre quality, Gossypium hirsutum, Heterosis, Seed cotton yield*

Genetic Divergence for Morphological and Biochemical Traits in 1% EMS Treated Tomato (*Lycopersicon esculentum* M.) cv. Arka vikas.

T Haritha, V Satyanarayana Rao, Lal Ahamed M and Y Ashoka Rani

Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Genetic diversity of 1.00 % EMS treated seeds of variety Arka vikas in tomato, was assessed using Mahalanobis D^2 statistic for 17 yield and quality characters in M_3 generation (109 M_3 families along with control with 45-50 plants per family) which indicated considerable diversity in the material. The maximum contribution per cent towards genetic divergence was by plant height, fruit weight, pericarp thickness, days to 50 % flowering, fruit shape index, no. of primary branches per plant, no. of fruits per plant, no. of locules per fruit and no. of flowers per cluster. The 109 M_3 families (unreplicated), along with control were grouped into 11 clusters using the Tocher's method and their distribution was at random. Although all the mutant lines were developed from the same mutagenic treatment (1.00 % EMS) and same parental genotype (Arka vikas) their grouping into different genetic clusters indicated that mutagenic treatment was effective in inducing diverse types of genetic changes due to the anomaly of the chromosomes in the seventeen traits studied. The inter-cluster distance was maximum between clusters III and X showing higher mean values for fruits per cluster and no. of fruits per plant, respectively. So, mutant lines from these clusters may be used in future hybridization programme.

Key words: *D² statistic, Genetic divergence, Tomato.*

Multivariate Analysis In Finger Millet (*Eleusine coracana* (L.) Gaertn.)

Ravikanth Bendi, N D R K Sarma and A V S Durga Prasad

Department of Genetic and Plant Breeding, Agricultural College, Naira 532 185, Andhra Pradesh

ABSTRACT

The experimental material comprised 55 diverse genotypes of finger millet (*Eleusine coracana* (L.) Gaertn) were evaluated to assess genetic diversity using multivariate methods including principal component analysis (PCA) and cluster analysis. Principal component analysis identified four principal components with eigen values more than one which contributed 74.06 per cent of cumulative variance with days to 50% flowering, finger length and inflorescence width being the most important characters in the first principal component. The total genotypes were grouped into eight clusters. The number of accessions per cluster varied from 14 accessions in cluster IV to two accessions in cluster VI where cluster V is unitary with single genotype. The objective of the present study was to determine the extent of diversity present in the material.

Key words: *Cluster analysis, Finger millet, Multivariate analysis, Principal component analysis.*

Correlation Studies of F₅ Families in Rice (*Oryza sativa* L.)

K L Y Tejaswini, B N V S R Ravi Kumar, Lal Ahamed Mohammad, S Krishnam Raju
Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

One hundred and fourteen F₅ families of rice belonging to six crosses along with seven parents were evaluated during *khari*, 2015 at Andhra Pradesh Rice Research Institute and Regional Agricultural Research Station, Maruteru to study variability, heritability, genetic advance as per cent of mean and nature and direction of association among themselves and with grain yield. Data was recorded on ten characters which showed significant differences among themselves. High PCV and GCV were observed for grain yield per plant and test weight. High heritability coupled with high genetic advance as per cent of mean was observed for number of grains per panicle, grain yield per plant and test weight indicating the presence of additive gene action in governing the inheritance of these traits. Hence, direct phenotypic selection is useful with respect to these traits. The study of character association revealed that panicle length showed significant positive association with grain yield per plant indicating that direct selection can be practiced for this character.

Key words: *Correlation, Genetic advance, Heritability, Variability.*

Genetic Variability Studies in Maintainer Lines of Pearl Millet (*Pennisetum glaucum* (L.) R. Br.)

P Shanthi, B Sahadeva Reddy and M Subba Rao
Scientist (Plant Breeding), AICPMIP, ARS, DCMS Buildings, Kamalanagar, Ananthapuram– 515 001

ABSTRACT

Genetic variability studies were conducted with forty-two maintainer inbred lines of pearl millet developed at ICRISAT, Patancheru, Hyderabad, India to assess the magnitude of variability, heritability and genetic advance as *per cent* of mean for thirteen yield and yield contributing characters at Agricultural Research Station (Dry Land Agriculture), ANGRAU, Ananthapuram, Andhra Pradesh during *rabi* 2011-12. The field trial was planted with a spacing of 50cm x 15 cm between rows and between hills. Analysis of variance manifested highly significant differences among the inbred lines for all the traits except for number of days taken for germination. Variability for genetic potential was highest (four to five fold) for fodder yield per plant, weight of total panicles per plant and grain yield per plant. The phenotypic coefficient of variation (PCV) was in general higher than the genotypic coefficient of variation (GCV) except for number of days taken for germination for which values of PCV and GCV were observed to be equal. High to moderate estimates of broad sense heritability coupled with high estimates of genetic advance as per cent of mean was noticed for the traits single panicle weight (Main tiller panicle), grain yield per single panicle, fodder yield per plant, weight of total panicles per plant and grain yield per plant, suggesting to go for simple direct selection for the improvement of the genotypes for these characters. Among forty two inbred lines studied based on *per se* performance eight best inbred lines were selected *viz.*, 81 B, ICMB 91444, ICMB 92111, ICMB 96666, ICMB 97111, ICMB 01888, ICMB 04111 and ICMB 04777 with higher values for fodder yield per plant, weight of total panicles per plant and grain yield per plant.

Key words: *GCV, Genetic advance as per cent of mean, Heritability and Pearl Millet, PCV.*

Variability Studies on Yield and Yield Contributing Characters in Maize (*Zea mays* L.)

Poornima N, Lal Ahamed M, D Ratna Babu and Sk Nafeez Umar

Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

The experiment was conducted with an objective to know the variability, heritability and genetic advance of 67 maize genotypes (fifty hybrids, fifteen parents and two checks) for the characters *viz.*, days to 50 % tasseling, days to 50 % silking, plant height (cm), ear height (cm), kernel rows per ear, number of kernels per row, ear length (cm), 100-seed weight (g) and grain yield per plant (g). Analysis of variance revealed significant amount of variability for all the characters studied. High PCV and moderate GCV were recorded for grain yield per plant and high heritability combined with high genetic advance as per cent of mean was shown by the characters *viz.*, ear height, 100-seed weight and grain yield per plant indicating the predominance of additive gene action in the inheritance of these traits.

Key words: *Genetic advance, Heritability, Maize, Variability.*

Correlation and Path Analysis for Morphological Traits in Maize (*Zea mays* L.) Inbred Lines

B Rama Devi, Lal Ahamed M, D Ratna Babu and T Madhumathi

Department of Genetic and Plant Breeding, Agricultural College, Naira 532 185, Andhra Pradesh

ABSTRACT

Correlation and path coefficient analysis was worked out for 8 morphological characters in 40 genotypes of maize inbred lines. Correlation studies indicated that days to 50% silking and 100 seed weight had positive significant association with seed yield per plant. Further partitioning of correlation coefficients into direct and indirect effects showed that characters 100 seed weight, cob length and days to 50 % silking had positive direct effect on seed yield per plant. The correlation and path analysis clearly indicated that direct selection based on these attributes may be helpful in evolving high yielding genotypes.

Key words: *Correlation, Maize, Morphological traits, Path analysis.*

Variability, Heritability and Genetic Advance in Rice (*Oryza sativa* L.)

Ch Santhi Priya, Y Suneetha, D Ratna Babu and V Srinivasa Rao

Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

Forty genotypes were studied for their genotypic and phenotypic coefficient of variation during *Kharif* 2015. Results indicated significant differences among all the characters studied *viz.*, Days to 50% flowering, days to maturity, productive tillers per plant, plant height, panicle length, grains per panicle, test weight, kernel length, kernel breadth, L/B ratio and grain yield per plant. Phenotypic coefficient of variation (PCV) was higher than the genotypic coefficient of variation for all the traits but smaller differences between GCV and PCV were recorded for all the characters studied, which indicated less influence of environment on these characters. PCV was higher for Grain yield per plant (26.04%) followed by grains per panicle (23.48%), productive tillers per plant (21.14%), test weight (16.79%), panicle length (12.67%), kernel breadth (11.09%), L/B ratio (9.32%), plant height (8.83%), kernel length (6.45%), days to 50% flowering (4.28%) and days to maturity (2.61%). High heritability coupled with high genetic advance as per cent of mean for the traits Test weight, panicle length and grains per panicle indicating the predominance of additive gene action and hence direct selection is useful with respect to these traits.

Key words: *Genetic advance, Heritability, Rice, Variability.*

Genetic Variability Estimates for Yield and Its Component Characters in Rice (*Oryza sativa* L.)

K Sudeepthi, Jyothula D P B, Y Suneetha and V Srinivasa Rao

Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 101

ABSTRACT

Thirty three rice genotypes (ten parents, twenty one hybrids and two checks) were evaluated during *kharif*, 2015 for eight quantitative traits to examine the nature and magnitude of variability, heritability and genetic advance as percent of mean. Analysis of variance showed significant differences among the genotypes for all the characters studied. The highest estimates of genotypic coefficient of variation and phenotypic coefficient of variation were recorded by grain yield per plant. High heritability coupled with high genetic advance as percent of mean was observed for characters *viz.*, number of productive tillers per plant, number of filled grains per panicle, test weight and grain yield per plant indicating these traits are governed by additive gene action.

Key words: *Genetic advance, Heritability, Rice, Variability.*

Correlation and Path Coefficient Analysis for Yield and Yield Component Traits in American Cotton (*Gossypium Hirsutum* L.)

B Mansingh Naik, Y Satish and D Ratna Babu

Regional Agricultural Research Station, Lam, Guntur-522034 , Andhra Pradesh

ABSTRACT

Correlation and path coefficient analysis have been carried out for 15 characters in 50 genotypes of American cotton (*Gossypium hirsutum* L.) for yield and yield component traits. The character association analysis revealed that plant height, number of sympodia per plant, number of bolls per plant, boll weight, ginning out turn, seed index, lint index and lint yield per plant were found to have significant positive association with seed cotton yield per plant at both phenotypic and genotypic level suggesting that these were the major yield contributing traits. Path analysis revealed that number of bolls per plant, boll weight and seed index showed direct positive effect and significant positive correlation with seed cotton yield per plant which suggested that direct selection for these traits would be effective to improve the seed cotton yield of American cotton.

Key words: *Correlation, Gossypium hirsutum, Path analysis, Yield.*

Fertility Status of Soils of Tenali Division, Guntur District of Andhra Pradesh

T Omkar Vinay Kumar, P R K Prasad, P Ravindra Babu and B Venkateswarlu

Department of Soil Science and Agricultural Chemistry, Agricultural College, Bapatla-522 101

ABSTRACT

The present study was conducted in Tenali revenue division of Guntur district by collecting 114 representative soil samples using GPS. Texturally they were sand, loamy sand, sandy clay loam, sandy clay and clay showing wide variation in texture. The sand, silt and clay content of the soil ranges from 20.6 to 92.0, 3.0 to 15.0 and 4.0 to 65.5 per cent, respectively. The pH (5.6 to 8.5) and EC (0.11 to 9.01 dS m⁻¹) values indicated that soils were found to be medium acid to moderately alkaline and non-saline in nature. The soils of Tenali division were non-calcareous with highest CaCO₃ content of 4.20%. The analyzed samples showing medium in organic carbon and CEC and their ranges from 0.20 to 0.72 per cent and 11.91 to 60.87 cmol (p⁺) kg⁻¹, respectively. Among the exchangeable basic cations, Ca was dominant followed by Mg, K and Na with mean values of 30, 2.35, 2.34 and 0.71 cmol (p⁺) kg⁻¹ soil, respectively.

Key words: *Electro-chemical properties, Physical, Physico-chemical.*

Fertility Status of Soils of Narasaraopet revenue division in Guntur district

K Lakshmi Prasanna, P Madhu Vani, P Prasuna Rani and B Venkateswarlu

Department of Soil Science and Agricultural Chemistry, Agricultural College, Bapatla-522 101

ABSTRACT

The present study was conducted in Narasaraopet revenue division of Guntur district by collecting 102 representative soil samples using GPS. The soils of this region varied from Loamy sand to clay in texture. The soils were found to be neutral to moderately alkaline (pH 6.6 to 8.4) in reaction. The soils were non saline, slightly to moderately calcareous in nature, non sodic, low to medium in organic carbon. CEC of the soils ranged from 14.7 to 69.7 cmol (p⁺) kg⁻¹ soil. The most dominant exchangeable cation was calcium followed by magnesium, sodium and potassium with mean values of 27 and 4.84 and 1.60 and 1.10 cmol (p⁺) kg⁻¹ soil, respectively.

Key words: *Electro-chemical properties, Physical, Physico-chemical.*

Macronutrient Status of Tobacco Growing Soils of Prakasam district, Andhra Pradesh

S Yamini, P Ravindra Babu, P R K Prasad and M Martin Luther

Department of Soil Science and Agricultural Chemistry, Agricultural College, Bapatla-522 101

ABSTRACT

The present study was carried out by collecting 100 representative soil samples from tobacco growing soils of Prakasam district. The soils were found to be neutral to moderately alkaline in reaction. All the soil samples were non-saline. The soils of the region were low to medium in organic carbon. The available nitrogen, phosphorus and potassium low to medium, low to high and medium to high, respectively. The available nitrogen, phosphorus were significantly and positively correlated with organic carbon.

Key words: *Tobacco growing soils, N, P, K, Nutrient index, Nutrient status.*

Yield and Fiber Qualities of Cotton (*Gossypiumhirsutum*) as Influenced by long-term Manures and Fertilizers on Cotton Mono-Cropping

P Joga Rao, P R K Prasad, A Lalitha Kumari, P Prasuna Rani and Ch Pulla Rao

Department of Soil Science and Agricultural Chemistry, Agricultural College, Bapatla-522 101

ABSTRACT

Field experiment was carried out on medium black soils at Regional Agricultural Research Station, Lam, Guntur, Andhra Pradesh during 2013-14 under rainfed conditions to study the effect of manures and fertilizers on seed cotton yield (SCY) and fibre qualities of cotton. Influence of manures and fertilizers on fiber length, fibre strength, fibre fineness, uniformity ratio and maturity ratio value was found non significant. Highest seed cotton yield of (2181 kg ha⁻¹) was recorded with RDF + FYM @ 10 t ha⁻¹.

Key words: *Fibre quality parameters, FYM, Seed cotton yield.*

Field Screening of Turmeric (*Curcuma longa* L.) Cultivars of Different Duration Groups Against Rhizome Rot Disease in Andhra Pradesh

S Narasimha Rao, K Ravindra Kumar and K Uma Maheswari

Turmeric Research Station, Dr. YSRHU, Kammarpalli-503 308, Andhra Pradesh, India

ABSTRACT

Field screening studies were conducted over a period of four years *i.e.* 2008-2012 in augmented block design with 295 available germplasm lines of turmeric (*Curcuma longa* and *Curcuma aromatic* L.) at Horticultural Research Station, Jagtial and Turmeric Research Station, Kammarpally. These lines were screened against the rhizome rot disease under natural conditions. The rhizome rot incidence is ranged from 1.58 to 80.56 per cent irrespective of cultures screened. Among the germplasm cultures screened, cultures like JTS-603, GS, CA-19/1, CA-69, CA-92/2, Shillong kasturi, Shillong-II, G. L Puram, PCT-10, PCT-11, PCT-13, PCT-18 in short duration, JTS-301, JTS-319, JTS-320, JTS-324, CLI-320, CLI-325, CLI-326, CLI-344, CLI-344/1, CLI-344/II in medium duration and JTS-12, JTS-15, JTS-402, JTS-403, JTS-404, JTS-405, JTS-407, PTS-14, TC-14, ST-365, ST-510, Jagtial local in long duration shows the rhizome rot incidence less than 10 per cent. Less rhizome rot incidence (resistance reaction) in short and medium duration group and more rhizome rot incidence (susceptible reaction) in long duration group were noticed.

Key words: *Germplasm, Rhizome rot, Turmeric, Varieties.*

Characterization of ARID/BRIGHT Transcription Factor From Chickpea Against Fusarium Wilt

G NagaRaju and Subhra Chakraborty

National Institute of Plant Genome Research, J.N.U. Campus, New Delhi-110067, India.

ABSTRACT

The present study was undertaken with an aim to unravel the molecular basis of wilt susceptibility and immunity in Chickpea plants using two different cultivars showing differential reaction when infected with *Fusarium*. In order to enrich differentially expressed transcripts, SSH based libraries were constructed and were used to monitor transcript levels upon *Fusarium* infection. The ARID consensus sequence spans about 100 amino acid residues, and structural studies identify the major groove contact site as a modified helix-turn-helix motif. In Chickpea, ARID gene was isolated, cloned and found to be single copy gene and ARID protein is nuclear localized in Onion peel experiment. It is relatively a new class of transcription factor family identified in plants, and shown to express in eighteen different structures in *Arabidopsis thaliana* and also gets induced upon Rhizobium treatment in Lotus. The data has shown for the first time has shown the involvement of *CaAB* in plant immunity. The up regulation of ARID gene upon pathogen challenge shows the involvement of this gene in defense against *Fusarium*,

Key words: *ARID/BRIGHT*, *Chickpea*, *Fusarium wilt*.

Influence of Weather Parameters on the Occurrence of Major Insect Pests and Diseases of Paddy

Anil Kumar K, Sarma A S R, Madhumathi T and Prasanna Kumari V

Department of Entomology, Agricultural College, Bapatla-522 101, Andhra Pradesh

ABSTRACT

A bulk plot of 200 sq m. and a light trap was maintained to study the influence of weather parameters on the occurrence of major insect pests and diseases of Paddy in *kharif*, 2014. During the crop season, leaf folder and leaf blast was observed in field and brown planthopper, green leafhopper and adults of leaf folder were appeared in light trap catches. No significant correlation was observed between weather factors studied with brown planthopper catches and leaf folder infestation. However, green leafhopper catches showed a non-significant and negative correlation with maximum temperature ($r = -0.337$) and rainfall ($r = -0.189$) and significant positive correlation with morning ($r = 0.478$) and evening relative humidity ($r = 0.465$). Whereas, the leaf folder adult catches in light trap showed a non-significant negative correlation with maximum temperature ($r = -0.354$), minimum temperature ($r = -0.186$), rainfall ($r = -0.254$) and significant positive correlation with morning relative humidity ($r = 0.486$). Leaf blast incidence showed a significant negative correlation with maximum ($r = -0.560$) and minimum temperature ($r = -0.631$) but, significantly positive correlation ($r = 0.672$) with morning relative humidity.

Key words: *Diseases*, *Paddy*, *Occurrence*, *Pests*, *Weather parameters*.

Screening of Sorghum Genotypes against Shoot Fly and Stem Borer

P Yogeswari, C Sandhya Rani, G Ramachandra Rao and V Manoj Kumar

Department of Entomology, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

A field experiment was carried out to screen the sorghum genotypes against shoot fly in rice fallow under zero tillage condition. A total of 30 genotypes were evaluated for shoot fly tolerance in terms of dead hearts using 1-9 scale, eleven were found to be resistant, eighteen genotypes were moderately resistant with scale 5 and one genotype was found to be susceptible under scale-7. The highest number of trichomes were recorded in the resistant genotypes CSV 14 R (177), followed by CSH 30 (164), CSV 29R (154), CSV 26 (153), NTJ-1 (C) (147) and CSV 22 (145) which resulted in 10.13 to 14.50% dead hearts. There was a significant negative correlation between the shoot fly per cent dead hearts and trichomes on adaxial surface and abaxial surface while, the correlation was positive with leaf glossiness and yield. Based on mean stem tunnel length, the genotypes were categorized as least susceptible (0-5 cm), moderately susceptible (5-10 cm) and highly susceptible (>10 cm). The resistant check CSH 16 (C) was found to be least susceptible with 4.65 cm mean stem tunnel length, whereas, NTJ-2 (C), NLCW-6 and N-14 were found to be highly susceptible as they recorded 10.45, 10.46 and 11.44 cm respectively. The remaining genotypes were found to be moderately susceptible with 6.60 to 9.84 cm as mean stem tunnel length.

Key words : *Dead hearts, Mean stem tunnel length, Shoot fly, Stem borer.*

Management Of Stem Borer, *Chilo Partellus* (Swinhoe) In Maize Through Inundative Release Of *Trichogramma Chilonis* Ishii

G V Suneel Kumar and O Sarada

Agricultural Research Station, Darsi, Prakasam 523 247, A. P

ABSTRACT

Inundative release of *Trichogramma chilonis* @ 1, 00,000/ha at weekly interval starting from 20 DAE in maize (hybrid - 30V92) was evaluated in a farmers' fields during *rabi* seasons of 2009-10 and 2010-11. Parasitoid released plots and chemical control plots were at par in recording shot hole damage (9.3 and 7.7 %), dead hearts (3.2 and 2.5%), *C. partellus* larvae (1.8 and 1.2/ plant) at 50 DAE and stem tunneling at harvest (22.3 and 18.4%) and were significantly superior than untreated control (19.6% shot hole, 10.8% dead hearts, 31.1% stem tunneling) and larval population (4.5 / plant). Similar trend in stem borer incidence was continued during *rabi* 2010-11. Two year mean grain yield in parasitoid release treatment (66.0 q/ha) and chemical control (73.5 q/ha) fields were at par, whereas, it was significantly lower in untreated control (43.7 q/ha). The net profit over control during *rabi* 2009-10 and 2010-11 in biocontrol package was Rs. 22125/- and Rs. 23780/- per ha as compared to Rs. 27745/- and 30095/- per ha in farmers' practice with cost benefit ratio of 1: 20.5, 1: 22.0, 1:8.9 and 1: 9.6, respectively

Key words: Biocontrol, Inundative release, *Chilo partellus*, Maize, *Trichogramma chilonis*.

Efficacy of Entomopathogenic Fungi Against Brown Planthopper, *Nilaparvata Lugens* Stal. (Delphacidae: Hemiptera) on Rice

B Nagendra Reddy, V Jhansi Lakshmi, G S Laha, T Uma Maheswarian and G R Katti
Department of Entomology, College of Agriculture, Rajendranagar, PJTSAU, Hyderabad

ABSTRACT

Entomopathogenic fungi have potential for controlling brown planthoppers in paddy. Efficacy of entomopathogenic fungi like *Beauveria bassiana*, *Metarhizium anisopliae* and *Lecanicillium lecanii* (*Verticillium lecanii*) against BPH was studied under glasshouse conditions. The three tested fungi were ineffective at initial stage of spray but increased the time mortality of BPH was also increased. The three fungi caused mortality to an extent of 53.75 – 70.00 per cent at 10 days after application.

Key words: Entomopathogenic, Planthopper, Rice.

Evaluation of Acid lime Varieties for Growth, Yield and Quality Parameters

P T Srinivas and B Govindarajulu
Citrus Research Station, Petalur, Venkatagiri, Nellore 524 132, Andhra Pradesh

ABSTRACT

Evaluation studies were carried out in acid lime for selection of cultivars suitable for growing in the tropical region of Petalur, Venkatagiri, Nellore Dist. Seventeen acid lime cultivars viz., CRS-I, CRS-21, Balaji, PKM-1, Pramalini, Vikram, Chakradhar, Punjab lime, TAL 94-14, TAL 94-3, TAL 94-2 RHRL - 49, 122, 124, 159 were evaluated for quality attributes for two years 2012 and 2013 at Citrus Research Station, Petalur, Andhra Pradesh. The results revealed that the quality parameters viz., highest juice content, acidity, total soluble solids, thickness, fruit weight, was recorded in the cultivar CRS-I, CRS-21, Balaji, followed by Vikram, Pramalini. The quality character estimates and growth parameters will be more effective in selection of acid lime cultivars for tropical region of Nellore.

Key words: Acid lime cultivars, Evaluation, Quality.

Analysis of Spatial And Temporal Variations in Area, Production and Productivity of Tobacco in Prakasam District of Andhra Pradesh

N S R Jogamba, V Srinivasa Rao, Sk Nafeez Umar and G R Reddy
Department of Agricultural Statistics & Mathematics, Agricultural College, Bapatla 522 101

ABSTRACT

This paper attempted to identify the spatial and temporal variations in tobacco area, production and productivity of Prakasam district of Andhra Pradesh on the basis of 28 years of secondary data covering the years from 1987 to 2014 by using the graphical approach. The growth rates were also calculated by using the Compound Growth Rate (CGR) function. The influence of area and productivity on production was studied separately by fitting a simple Linear regression Equation. Forecasting of tobacco production was done by using spline regression and conventional models. The results of the study showed that there were a positive shifts in area, production and productivity for the crops during the two periods.

Key words: *Compound Growth Rates, Karl Pearson's correlation coefficient, Multiple Linear regression, Spline Regression, R².*

Effect of Moisture Content on Physical Properties of Finger Millet(*Eleusine Coracana*)

V V Tejaswini, D Bhaskara Rao, Sivala Kumar and R Lakshmi pathy
College of Agricultural Engineering, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Physical properties of finger millet are necessary for the design of machines and analysis of the behaviour of the product during agricultural process operations such as handling, planting, harvesting, threshing, cleaning, processing, transporting and storage of crop. Some physical properties of finger millet (*Eleusine coracana*) of *saptagiri* variety were determined at the moisture contents of 10, 13 and 16 % (w.b). The variation of physical dimensions surface area, volume, mass of 1000 grains, bulk density, true density, angle of repose, static coefficient of friction and terminal velocity were measured. The values of physical properties length, width, thickness, geometric mean diameter, sphericity, surface area, volume, thousand grain weight, porosity, angle of repose, static coefficient of friction and terminal velocity were increased linearly as moisture content increased from 10 to 16 % w.b. Bulk density and true density were decreased as moisture content increased from 10 to 16 % w.b.

Key words: Angle of repose, Finger millet (*Eleusine coracana*), Physical properties, True density.

Shelf Life Extension of Papaya Fruit by Shrink Wrapping

M Madhava, D Anand babu and L Edukondalu
College of Agricultural Process and Food Engineering, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Papaya (*Carica papaya*) is a popular and economically important fruit of tropical and subtropical countries. Papaya fruits are rich in enzymes called papain and chymopapain. Marketing of fresh papaya is a great problem because of its short post-harvest life, which leads to high post-harvest losses. The focus of this research was to study the effect of shrink wrapping on physico-chemical properties and shelf life extension of papaya. Two sets of fruits (wrapped and unwrapped) were held at ambient (32-39°C, 72-83% RH) and refrigerated conditions (10-12°C, 90-95% RH) throughout the storage period. Weight loss, pH, moisture content, TSS, vitamin C, vitamin A, proteins, carbohydrates were evaluated at an interval of 4 days. Changes in moisture content, protein, vitamin C, carbohydrates of the shrink-wrapped fruits were lower than that of un wrapped fruits during storage. Papaya fruits stored at room temperature, refrigeration, shrink wrapped and shrink wrap + refrigeration had a shelf life of 10, 14, 13, and 19 days respectively. Results proved that shrink wrapped papaya at refrigerated conditions had longer storage period compared to other storage conditions.

Key words: Papaya, Shrink wrapping, Vitamin C, Weight loss.

Physical Properties of Tamarind (*Tamarindus indica* L.) Fruit

V R Mallikarjuna, B V Hemanth, Arudra Srinivasa Rao and M V Ramana
College of Agricultural Engineering, Madakasira 515 301, Anantapur dist, Andhra Pradesh

ABSTRACT

Tamarind (*Tamarindus indica* L) is a multipurpose tropical fruit tree used primarily for its fruits, which are eaten fresh or processed, used as a seasoning or spice, or the fruits and seeds are processed for non-food uses. Conventional method of tamarind seed separation was laborious and time consuming. In traditional practice for removal of seed from 1 Kg of fruit 0.67 man-hr was required. After recognizing the importance of mechanization of tamarind processing, various tamarind physical properties need to be studied to design a machine to remove shell and seed. The average length, width, thickness, geometric mean diameter, sphericity index, surface area, bulk density and true density of tamarind fruit at moisture content of 25% on dry basis were determined. The angle of repose during filling and emptying were in an average of 32.43° and 48.62° respectively. The average length, width, thickness, geometric mean diameter, sphericity index, surface area, bulk density and true density of tamarind fruit were observed as 93.94mm, 15.37mm, 11.73mm, 25.57mm, 0.2734, 206.63mm², 616.39kg/m³ and 1042.25kg/m³ respectively.

Key words: *Angle of repose, Bulk density, Physical properties, Sphericity index, Surface area.*

Comparison of Measured Discharges of Designed Trapezoidal Modified Broad Crested Weirs and Estimated Discharge by Winflume Software

K Krupavathi, G Ravi Babu, R Ganesh Babu and K Madhusudhana Reddy
College of Agricultural Engineering, Bapatla 522 10, Andhra Pradesh

ABSTRACT

Growing populations induces the more withdrawal of water towards agriculture, industry and domestic putting water resources under stress. Good management of scarce water resource is dependent upon quantifying supplies and uses with accurate measurement techniques. Several types of structures have been used for finding discharges in open channel. The terms ‘‘long-throated flume’’ and ‘broad-crested weir’’ comprises a large family of structures used to measure discharge in open channels with highest accuracy. The advantages of this structure include minimal head loss, low construction cost, adaptability to a variety of channel types, and ability to measure wide ranges of flows with custom-designed structures. The WinFlume program serves two primary purposes Calibration of existing flow measurement structures fitting the criteria for analysis as long-throated flumes and Design of new structures. In the present study, the Winflume is used to test existing design. A good correlation is established between the measured and predicted discharges. With improving the upstream conditions, the measured and theoretical discharges are in good agreement with best coefficient of determination. The difference between the theoretical and measured discharges varied between 9.81 % to -1.87 for different flumes at different discharges. With modification the average percent of error in case of broad crested weir is – 1.669 and is decreased to -1.005% by using WinFlume software. From the results it is clear that the model has good ability for estimation of the passing discharge through the long throated flume, therefore it can be used successfully to simulate hydraulic process of passing discharge through the long throated flume.

Key words: Comparison, Crested weirs, Winflume software.

Costs and Returns of Different Rice Production Technologies Under NSP Right Canal of Guntur District of Andhra Pradesh

N S Praveen Kumar, K S R Paul, M Chandra Sekhar Reddy and D V S Rao
Department of Agricultural Economics, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

The study of costs and returns of different rice production technologies, viz. system of rice intensification (SRI), direct sowing and farmers practice has been carried out under NSP right canal of Guntur district. Among the three rice production technologies analyzed, the total cost of cultivation has been recorded highest in SRI (Rs. 67512.91/ha), followed by farmers practice (67465.22) and direct sowing (Rs.63165.30). The gross income, the net returns and benefit cost ratio was high in direct sowing owing to lower cost of cultivation in direct sowing compared to SRI and farmers practice. The unit cost of production was lowest in direct sowing (Rs.1070.05) followed by SRI (Rs.1141.32) and farmers practice (Rs.1274.61).

Key words: Cost of production, Rice production systems, SRI.

Constraint Analysis of Dairy Farmers In Co-Operative and Non-Cooperative Milk Supply Chains in Prakasam District of Andhra Pradesh

K Vykhaneswari, K Uma Devi, G Raghundha Reddy and Sk Nafeez Umar
Department of Agricultural Economics, Agricultural College, Bapatla 522 10, Andhra Pradesh

ABSTRACT

A study was conducted in Prakasam district to identify the constraints faced by dairy farmers in production and marketing of milk. The data were analysed by using Garrett's ranking technique. The major constraints faced by both cooperative and non-cooperative dairy farmers were lack of emergency veterinary services, low average milk yield of the lactating animals, high cost of veterinary services, no or less provision for advance payment for milk by society or vendors, lack of technical guidance, lower socio-economic conditions, lack of cooperation and coordination among members, etc.

Key words: *Dairy farmer, constraints, Garrette's ranking technique, cooperative and non-cooperative channels.*

Extent of Utilization of Mass media Sources by Farmer Field School (FFS) and non-FFS Farmers of Groundnut

Sreenivasulu S, Jain P K and Sastry T P

Department of Extension Education, S V Agricultural College, Tirupati 517 502, Andhra Pradesh

ABSTRACT

Mass media plays an important role in transferring modern agricultural technologies to farming community. The present study was conducted during 2012-13 in Chittoor district of Andhra Pradesh to assess the extent of utilization of mass media sources by Farmer Field School (FFS) farmers and non-FFS farmers of groundnut to get the agricultural information. Ex-post-facto research design was used in the present study. 120 FFS and 120 non-FFS farmers were selected randomly for the study from the selected villages where FFS was organized. The data were collected with the help of suitable developed schedule by personal interview method. Collected data were analyzed, tabulated using mean and standard deviation and results were interpreted to analyze the significant difference between FFS and non-FFS farmers. There was significant difference in mass media exposure of FFS and non-FFS farmers of groundnut. Majority (85.83%) of the FFS farmers had medium to high mass media exposure, whereas in case of non-FFS farmers majority (84.17%) of farmers were found to be having medium to low mass media exposure. Television was the most utilized source for receiving agricultural information by the majority of the FFS farmers followed by agricultural exhibitions, newspaper, farm magazines, radio and internet. Still there is great scope to improve medium mass media exposure category to high mass media exposure category by organizing more number of farmer field schools to groundnut farmers.

Key words: *Agricultural information, Farmer Field School, Groundnut and Mass media.*

On farm trial on Cost Reduction Production Technologies of Paddy in Andhra Pradesh

B Mukunda Rao and G Ramesh

Department of Agricultural Extension, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

An on-farm trial was conducted in Prakasam district of Andhra Pradesh during 2012-13 to evaluate the performance of paddy under machine transplanting and drum seeding method and performance was compared over manual planting. Among the three rice production technologies analyzed, the number of productive tillers per square meter was highest in machine planting (30) followed by drum seeding (26.5) and manual planting (21.5). But the per hectare yield was found to be highest in drum seeding (9710 kg ha⁻¹) followed by machine planting (9600 kg ha⁻¹) and manual planting (8250 kg ha⁻¹). The cost of cultivation, net returns and B: C ratio were maximum in drum seeding method.

Key words: Drum seeding, Machine planting, Manual planting, On farm trial.

Farmer's Perception Towards Farm Machinery in Groundnut

C Hruday Ranjan, P V Satya Gopal, V Sailaja and S V Prasad

Department of Agricultural Extension, S V Agricultural College, Tirupathi 517 502, Andhra Pradesh

ABSTRACT

The study was conducted in Chittoor district of Andhra Pradesh during 2013 with 120 groundnut farmers. The results of the study depicted that the majority of the respondents were found in middle age category (59.16%), literate (83.34%), medium to high farming experience (70%), small and marginal farmers (79.19%) and medium material (5-8) possession category. About 85 percent had low to medium extension contact; fifty percent had medium mass media exposure and social contact. More than half of the groundnut farmers had medium **risk orientation** (54.18%), achievement motivation (57.50%), scientific orientation (54.18%) and management orientation (52.50%). About 46 per cent of the groundnut farmers were having medium magnitude of positive perception towards farm machinery followed by high (28.33%) and low (25.84%) magnitude of positive perception towards farm machinery. The variables like education (0.7039), land holding (0.5074), material possession (0.6536), extension contact (0.4449), mass media consumption (0.5089), Social contact (0.6985), risk orientation (0.5966), achievement motivation (0.4014), scientific orientation (0.6252) and management orientation (0.6710) had positively significant relationship with the magnitude of positive perception.

Key words: Farm mechanization, Groundnut, Perception, Profile of farmers, Relationship.

Youth in Farming - Personal, Economic and Socio-Psychological Analysis

K Shireesha, P V Satyagopal, T Lakshmi, S V Prasad and B Ravindra Reddy

Department of Agricultural Extension, S V Agricultural College, Tirupathi 517 502, Andhra Pradesh

ABSTRACT

In the present study, more than half (57.08%) of the youth in farming were found to fit in the upper young age. More than one-fourth (27.10%) of them completed their college education. Majority (90.00%) of them were married, nearly two-third (62.92%) of them were in nuclear family. About 54.17 per cent of them were with medium level of farming experience, half (50.41%) of them were marginal farmers, nearly half (49.58%) of them were with medium level of material possession. About half (50.42%) of them had medium level of annual income, nearly three-fourth (39.16% medium and 37.91% low) of them had medium to low exposure to training, nearly half (45.83%) of them had medium extension contact, Equal proportion each (45.00%) of them had medium exposure to mass media and medium decision making ability. About 46.25 per cent of them had moderate innovativeness, exactly half (50.00%) of them had moderate scientific orientation, slightly more than half (50.83%) of them had medium management orientation, less than half (45.00%) of them had medium achievement motivation, more than two-fifth (45.83%) of them had medium economic orientation and two-fifth (41.67%) of them had medium risk orientation.

Key words: Chi-square test, Descriptive statistics, Profile characteristics, Youth in farming.

Problems and Suggestions to Improve the Livelihood of Tribal Farmers

G Swathi, P Rambabu, T Gopikrishna, D Vishnu Sankar Rao and V Srinivasa Rao
Department of Agricultural Extension, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

The study was conducted in three districts of Andhra Pradesh i.e. Visakhapatnam, Chittoor and Khammam to identify the problems of tribal farmers and to find out appropriate suggestions to overcome the problems. A well structured and pre tested interview schedule was used to collect data. The statistics employed for data analysis were simple frequency and percentage. Findings revealed that majority of the tribal farmers expressed that in agriculture category as a whole, Inadequate technical knowledge in farming (85.42%) was the major problem as perceived by tribal farmers. In animal husbandry category as a whole, Non-remunerative price for milk in dairy (76.25%) was the major problem perceived by tribal farmers. In collection and selling of forest products category as a whole, Proper marketing channels is not available for selling forest products (100.00%) was the major constraint faced by the tribal farmers. With regard to suggestions in agriculture category as a whole, Skill oriented vocational training programmes on modern agricultural technologies, sericulture, apiculture etc. should be organized (85.42%) was the most important suggestion given by the tribal farmers. In animal husbandry category on a whole, enhanced milk price for the producers (76.25%) was the major suggestion given by the tribal farmers. In collection and selling of non timber forest products category on a whole, Proper marketing channel should be made available (93.75%) was the major suggestion given by tribal farmers.

Key words: Livelihood, NTFPs, Tribal farmers, Problems and Suggestions.

Profile Characteristics of the Farmers in the Adopted and Non-Adopted Villages of the Guntur District

N Nagendra Babu, G Sivanarayana, T Gopikrishna and K Umadevi
Department of Agricultural Extension, Agricultural College, Bapatla 522 101, Andhra Pradesh

ABSTRACT

An evaluation study of Village Adoption Programme (VAP) was undertaken with the objective to assess the difference between the profile characteristics of the farmers in the adopted and non-adopted villages of the Guntur district. Study revealed that there was a significant difference between the farmers of adopted and non-adopted villages regarding age, education, land holding, material possession, annual income, occupation, farming experience, training received, extension contact, innovativeness, social participation, mass media exposure, market orientation and achievement motivation.

Key words: Adopted village, Non- adopted village, Profile characteristics, VAP.