

Yield and Quality of Aromatic Rice Influenced by Varied Levels of Nitrogen and Different Weed Management Practices under Aerobic Culture

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ABSTRACT

A field experiment was conducted at S.V. Agricultural College farm, Tirupati for two consecutive seasons of *rabi*, 2009, and 2010 on sandy clay loam soils to study the effect of varied nitrogen and weed management practices on yield and quality parameters of aromatic rice under aerobic culture. The results indicated that highest grain yield and milling percent of rice was realized with application of nitrogen at 140 kg ha⁻¹ where as highest straw yield and grain quality parameters *viz.*, kernel length, breadth, amylase and protein content of grain was realized with highest level *i.e.* 160 kg N ha⁻¹, while the lowest of all these parameters were recorded with 100 kg N ha⁻¹. Among weed management practices, pre emergence application of oxadiargyl @ 75 g ha⁻¹ supplemented with hand weeding at 25 DAS recorded the highest grain yield, straw yield, milling percent and protein content of grain. The quality parameters head rice recovery, L: B ratio and volume expansion of rice were not influenced either by nitrogen or weed management practices.

Key words : Aerobic culture, Aromatic rice, Herbicides, Nitrogen response, Quality parameters.

Survey of Weed Flora in Zero Till Sown Maize in Krishna Zone of Andhra Pradesh

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ABSTRACT

Weed survey was conducted during *rabi* 2009-10 to 2011-12 to find out weed flora in zero till sown maize in Krishna Agro climatic zone of Andhra Pradesh. The survey indicated that a total of twenty one weed species, of which 7 grasses, 3 sedges and 11 broadleaf weeds distributed among ten families were infested in zero till sown maize. Among these, *Echinochloa colona* is the most dominating weed with Importance Value Index (IVI) of 37.64 followed by *Panicum repens*, *Trianthema portulacastrum*, *Digera arvensis* etc

Key words : Importance Value Index, Weed flora, Zero till sown maize.

Effect of Spacing on Growth and Yield of *Jatropha curcas* under Rainfed Conditions of Southern Zone of Andhra Pradesh

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ABSTRACT

A field experiment was initiated during the year 2005 on sandy clay loam soils at Regional Agricultural Research station, Tirupati to study the influence of various spacings on growth and yield of *Jatropha curcas* under rainfed conditions. The results of data recorded from pooled analysis of two consecutive years revealed that the *Jatropha* plants planted at 4mx2m spacing (1250 plants ha⁻¹) recorded higher growth and yield followed by 3mx3m (1111 plants ha⁻¹) and 3mx2m (1666 plants ha⁻¹) spacings and significantly the lowest growth and yield was recorded under 2mx2m (2500 plants ha⁻¹) spacing.

Key words : Canopy spread, *Jatropha curcas*, Plant height, Pod yield, Seed yield, Spacing.

Performance of Maize and Soybean Intercropping Systems in Relation to Zinc Application Under Rainfed Condition

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ABSTRACT

A field experiment was carried out during the rainy (*khari*) season of 2009-10 at Rajendranagar, Hyderabad, to find out effect of row ratio (1:1 and 1:2) and zinc levels on growth, yield, productivity, economics of maize + soybean intercropping systems under rainfed condition. The result revealed that growth and yield components of maize and soybean were less in intercropping systems compared to sole cropping. Intercropping of 1:1 and 1:2 ratio declined the seed yield by 14.75 and 11 per cent in maize and 52.19 per cent and 38.34 per cent in soybean as compared to sole crop. However, the total productivity of systems in terms of maize grain equivalent and LER (6182 kg ha⁻¹ and 1.47) was found to be higher with maize + soybean 1:2 ratio. Irrespective of the cropping system, application of 50 kg ZnSO₄ ha⁻¹ recorded significantly higher grain yield of maize and soybean (5301 and 936 kg ha⁻¹), maize-equivalent yield (6850 kg ha⁻¹) and LER. Highest net return (Rs. 43594) and B:C ratio (2.26) were found in maize + soybean 1:2 ratio with 50 kg ZnSO₄ ha⁻¹ application.

Key words : Economics, Intercropping, Maize, Soybean, Yield.

Response of Chickpea Varieties to Phosphorus Application

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ABSTRACT

A field experiment was conducted during *rabi* 2009-10 with 3 varieties of chickpea viz., Annigeri, JG-11 KAK-2 with 4 levels of phosphorus (0, 25, 50, 75 kg ha⁻¹) tested in a factorial randomized block design. The results revealed that KAK-2 showed maximum plant height (17.1 28.5 and 32.2 cm), at different stages and produced significantly maximum primary, secondary branches, number of pods per plant(54.7), test weight(19.9 g) and grain yield(1301 kg ha⁻¹). Application of 50 kg P₂O₅ ha⁻¹ resulted in significantly higher pods per plant and seed yield compared to other levels of phosphorus application. The phosphorus, nitrogen and potassium nutrient uptake also significantly higher by KAK-2 variety similarly significant nutrients uptake was found with the application of 50 kg P₂O₅ ha⁻¹.

Key words : Nutrient uptake, Phosphorus levels, Pods, Seed Yield, Test weight, Varieties.

Character Association in Elite Recycled Early Inbred lines of Maize (*Zea mays* L.)

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ABSTRACT

Character association was carried out on ten diverse elite early inbreds of maize and their forty five direct single cross hybrids (derived by crossing in a half diallel fashion) along with two checks at College Farm, College of Agriculture, Rajendranagar, Hyderabad during *kharif*, 2003. The results indicated that grain yield was significantly and positively associated with 100-kernel weight, number of kernel rows per ear, ear height, ear length and ear girth at both genotypic and phenotypic levels. Hence, it is suggested that, for these prime characters utmost importance should be given in selection programme for the identification and development of high yielding maize hybrids or inbred lines of early maturing group.

Key words : Elite recycled, Inbred lines, Maize.

Combining Ability Studies for Rice (*Oryza sativa* L.) under Coastal Saline Soil Conditions

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ABSTRACT

Combining ability study of yield contributing and salt tolerance related physiological traits from the diallel analysis of eight varieties under saline soil conditions revealed the predominance of *sca* variance than *gca* variance for all the characters studied except yield reduction per cent, suggesting the significant role of non-additive gene action for majority of the parameters. Under saline soils, SR26B was adjudged as the best general combiner coupled with high *per se* performance for twelve traits *viz.*, total and productive tillers, panicle length, panicle weight, number of filled grains panicle⁻¹, 1000-grain weight, grain yield, low visual salt injury, harvest index, low Na⁺ / K⁺ ratio, SPAD readings and low yield reduction, while CSRC(S)7-1-4 was the next best general combiner which showed high *gca* and *per se* for six traits *viz.*, number of tillers plant⁻¹, panicle weight, number of filled grains panicle⁻¹, test weight, root/shoot ratio and Na⁺ / K⁺ ratio. Further, CSRC(S) 5-2-2-5 was also found to be promising for six traits *viz.*, number of tillers plant⁻¹, number of filled grains panicle⁻¹, spikelet fertility, test weight, low visual salt injury and low yield reduction. Hence, these parents could be exploited for development of salt tolerant high yielding varieties.

Key words : Combining ability, Rice, Saline soils.

Selection Strategy for Improvement of Yield and Quality Through Genetic Variability Parameters and Trait Association Studies in Rice (*Oryza Sativa* L.)

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ABSTRACT

Thirty two genotypes of rice were evaluated for fourteen quantitative characters to assess the genetic variability and character association among themselves. Genotypic and phenotypic coefficients of variation were high for plant height and harvest index. High heritability accompanied by high genetic advance for days to 50 % flowering, days to maturity, number of effective tillers per plant, plant height, number of grains per panicle, harvest index, kernel L/B ratio, 1000-grain weight and grain yield per plant indicated the predominance of additive gene action for the expression of these characters. Grain yield per plant was found to be positively and significantly correlated with harvest index, number of grains per panicle, panicle length, days to maturity, days to 50 % flowering and plant height. Path analysis revealed high positive direct effects of days to maturity and harvest index on the grain yield per plant, indicating the possibility of yield improvement through direct selection of these traits.

Key words : Correlation, Path analysis, Rice, Variability.

Correlation and Path Coefficient Analysis in Sesame (*Sesamum Indicum* L.)

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ABSTRACT

Fourteen parents were crossed in half-diallel fashion to generate 91 F₁s and were evaluated in four environments *viz.*, Bapatla (*kharif*), Bapatla (*rabi*), Peddapuram (*kharif*) and Peddapuram (*rabi*). The studies of character association on pooled basis revealed highest contribution was made by number of capsules/plant towards seed yield per plant. Only days to 50% flowering was found to be negatively associated at genotypic level. A higher positive direct effect was recorded by number of capsules/plant towards seed yield per plant at both phenotypic and genotypic levels. The present correlation and path coefficient analysis studies on the whole adds to the established complementary relationship of plant height, number of primary branches, number of secondary branches, number of seeds/capsule and number of capsules/plant towards high seed yield in sesame.

Key words : Analysis in sesame, Correlation, Path coefficient.

Heterosis Studies in Single Cross Hybrids of Maize (*Zea mays* L.) for Yield and Yield Attributing Traits under Rice Fallow System

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ABSTRACT

In the present investigation, forty five F₁ single cross hybrids developed through crossing ten inbred lines in a half diallel fashion were evaluated under *rice fallow* situation. Maximum heterosis was obtained for yield which ranged from 37.89 (CM 210 × BML 6) to 202.12 (CM 120 × CM 131) per cent. The hybrids CM 120 × CM 131, CM 131 × BML 10 and CM 120 × BML 13 showed highest heterobeltiosis for grain yield per plant and also showed higher heterobeltiosis for plant height, ear girth, number of kernels per row and 100- kernel weight coupled with high *per se* performance. Hence, these crosses could be exploited to a maximum extent in future heterosis breeding programmes to improve the yield under *rice fallow* system.

Key words : Heterosis, Rice fallow maize.

Detection of Gene Action Through Generation Mean Analysis for Yield and Yield attributes in Sunflower (*Helianthus annus* L.)

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ABSTRACT

The study on gene effects for eight quantitative traits viz., days to 50% flowering, plant height, head diameter, filled seeds per head, seed yield per plant, 100 seed weight, oil content and oil yield per plant in sunflower was studied by employing generation mean analysis. The results revealed that day to 50% flowering, plant height, head diameter, filled seeds per head, 100 seed weight and oil content characters were governed by dominance and epistatic gene interactions. It clearly indicated that traits can be exploited through heterosis breeding as well to break the gene constellation and release of free variability, biparental mating design can be used. However in cross PFMS 400 A x GP 9-1-163-8 and IMSWGA x GP9-163-8 for days to 50% flowering, where in ARM 245 A x 856 R (plant height), IMS WGA x GP 9-1-163-8 (seed yield) and IMS WGA x GP 9-1-163-8 and PET 2-7-1 A x ARM 239 (oil yield) additive gene action is found to be significant. These traits can be improved through simple selection processes in passing generations to accumulate the positive alleles to develop in the form of inbred. In the present study gene action differed cross wise and also character to character. Since the parents involved were differing, thus the gene action controlled the traits also differ significantly.

Key words : Additive, Epistasis, Generation mean, Gene effects, Joint scaling.

Estimation of Heterosis and Inbreeding Depression in crosses derived from Grain Sorghum × Sweet Sorghum [*Sorghum bicolor* (L.) Moench]

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ABSTRACT

An investigation on heterosis and inbreeding depression was carried out in four crosses for fresh stalk yield, juice yield and its attributing traits in Sweet sorghum [*Sorghum bicolor* (L.) Moench]. High heterosis coupled with low inbreeding depression was observed for stem girth in two crosses viz., 27 B × SSV 84 and ICSB 38 × SSV 74 while significant mid parent heterosis coupled with low inbreeding depression for stem girth, brix per cent, total soluble sugars and bioethanol yield was recorded in 296 B × URJA cross indicating additive and additive × additive gene action in the genetic control of these traits. Contrary to this in all four crosses, high heterosis coupled with high inbreeding depression was noticed for total biomass, fresh stalk yield, grain yield, juice yield and sugar yield indicating non-additive gene action in their genetic control. Maximum heterosis was recorded for sugar yield followed by juice yield and fresh stalk yield.

Key words : Additive, Inbreeding depression, Heterosis, Non additive gene action, Sweet sorghum.

Study of Comparison of Different Stability Parameters in Sesamum (*Sesamum indicum* L.)

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ABSTRACT

The study of different stability parameters in sesamum genotypes over 6 environments indicated that stability parameters like Wricke's (1962) ecovalence, mean variance due to genotype-environment interaction of Plaisted and Peterson (1959) and variance or information of ranks over environments gave similar results to that of the deviation from regression (S^2d) of Eberhart and Russell (1966). The genotypes, YLM 106 (number of seeds per capsule and number of capsules per plant), YLM 82 (number of seeds per capsule, oil content and 1000 seed weight), YLM 17 (seed yield per plant) and Madhavi (1000 seed weight and oil content) showed stable performance over environments.

Key words : Regression model, Sesamum, Stability.

Rapid *in-vitro* propagation of Tomato (*Solanum lycopersicum*) via cotyledonary leaf explants

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ABSTRACT

Tomato (*Solanum lycopersicum* L.) cv. PKM-1 cotyledonary leaf explants were cultured on MS basal medium supplemented with various concentrations of BAP, Kinetin, Zeatin, IAA and IBA. Among the various plant growth regulators combinations tried the best shoot regeneration was obtained when MS medium was supplemented with BAP 1.5 mg/L + Kinetin 1.0 mg/L and the best root regeneration was obtained when MS medium was supplemented with Kinetin 1.0 mg/L. Higher plantlet survival (86%) was obtained in soilrite mixture and 9.6 days has been taken for acclimatization.

Key words : BAP, IAA, Tomato, *in-vitro* cultures, Kinetin and Zeatin.

Genetic Variability and Divergence Studies under Organic Fertilizer Management in Rice (*Oryza sativa* L.)

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ABSTRACT

Thirty two diverse rice genotypes were evaluated for fourteen yield and quality characters under organic fertilizer management in order to assess the genetic variability, heritability and genetic diversity. The magnitude of difference between PCV and GCV was relatively low for all the traits. Higher PCV, GCV, heritability and genetic advance as per cent of mean were recorded for grain yield per plant, number of effective tillers per plant, plant height and number of grains per panicle which indicated the preponderance of additive gene action for these traits in the organic fertilizer management. Based on genetic diversity studies the thirty two genotypes were grouped into six clusters by using Tocher's method. Cluster II had highest number of genotypes (fourteen). Based on inter-cluster distances, the crosses between PR-106 × Accession no. 11103 (cluster V × cluster VI), Plutikambani × Accession no. 11103 (cluster IV × cluster VI), BPT 5204 × Accession no. 11103 (cluster II × cluster VI), NLR-145 × Accession no. 11103 (cluster II × cluster VI), Triguna × Accession no. 11103 (cluster II × cluster VI) and Velluthachera × PR-106 (cluster III × cluster V) could be suggested for the exploitation of transgressive segregants for both yield as well as quality under organic fertilizer management.

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

Soil-site Suitability for Commonly Grown Crops in Srikalahasthi Mandal of Chittoor District, Andhra Pradesh

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ABSTRACT

Survey was undertaken in Srikalahasthi mandal of Chittoor district to evaluate the suitability of soils for rice, groundnut, sugarcane, sorghum and chickpea crops. The soil belongs to Entisols, Inceptisols and Alfisols. The major limitations in pedons 1 (Typic Ustipsamments) were pH and organic carbon. Pedon 2 (Vertic Haplustepts) and pedon 4 (Typic Haplustepts) showed wetness, texture, pH (except for pedon 2) and organic carbon as limitations. Pedon 5 (Typic Haplustalfs), pedon 6 (Typic Ustifluvents) and pedon 7 (Typic Haplustepts) exhibited wetness, texture, pH and organic carbon as the limitations. Pedons 3 (Typic Ustorthents) had wetness, texture, CaCO₃, depth, pH and organic carbon as the major limitations. The limitation levels of the land characteristics varied from crop to crop. The suitability classes can be improved if the correctable limitations (soil fertility characteristics) were altered through soil amelioration measures.

Key words: Crop suitability, Land evaluation Limitations.

Growth, Yield attributes and Yield of *Bt* Cotton as Influenced by Phosphorus levels, PSB and FYM

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ABSTRACT

A field experiment was conducted to study the response of *Bt* cotton to phosphorus levels, phosphorus solubilising bacteria (PSB) and farmyard manure (FYM) on a clay loam soil at Agricultural College Farm, Bapatla during *kharij*, 2011. Highest biomass, boll number and yield were recorded by the integrated treatment that received RDP+PSB+FYM followed by RDP+FYM and RDP+PSB with an increase of 32, 25 and 8 per cent in seed cotton yield, respectively over only inorganic treatment. The treatment that received 50% RDP+PSB+FYM was at par with application of RDP in seed cotton production.

Key words : Biomass, seed cotton yield and integrated nutrient management.

Sorption of Pendimethalin on Soils of Andhra Pradesh

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ABSTRACT

Adsorption desorption of pendimethalin in soils was studied by Batch equilibrium technique at five different initial concentrations of pendimethalin. Adsorption isotherms were conformed to the Freundlich equation. The desorption process exhibited pronounced hysteresis in all the soils, which was more prominent when desorption was carried out at higher concentration of herbicide and the percent cumulative desorption was high in soils with low organic carbon content. The values of Freundlich constant, K_f were ranged from 0.28 to 2.83 for pendimethalin, The Freundlich constants K_f and n increased with increasing initial concentration of adsorbed herbicide thus confirming the irreversible nature of the adsorption of pendimethalin of these soils. The per cent cumulative desorption was high in soils with low organic carbon content. Freundlich ' K_f ' values which indicate the extent of binding of herbicide to the soil constituents were positively and significantly correlated with organic carbon ($r = 0.94^{**}$), clay content ($r = 0.91^{**}$) and clay + OC ($r = 0.92^{**}$).

Key words : Freundlich Constants, Hysteresis, Pendimethalin, Sorption.

Characterization and Classification of Rice Growing Soils of Southern Telangana Region of Andhra Pradesh

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ABSTRACT

Ten representative pedons from rice-growing soils of southern Telangana region were characterized and classified. The results showed that the soils were sandy loam to clay in texture with low permeability. The soils were neutral to slightly alkaline in reaction, low to high in organic carbon, mixed in mineralogy and moderately deep to deep. Bulk density increased with depth and values ranged from 1.26 to 1.81 Mg m⁻³. Water retentions at 33 kPa and 1500 kPa of soils ranged from 7.9 to 38.7 % and 2.2 to 22.1 %, respectively. Cation exchange capacity and soil pH followed no definite distribution pattern with depth. The available N was low to medium and available P and K were low to high. The available N, P and K decreased with depth. Based on soil characteristics, the soils of Chevella (P1), Thandur (P4), Shadnagar (P5), Palem (P6) and Narayanpuram (P9) were classified as Alfisols, soils of Ibrahimpatnam (P3), Jadcharla (P7) and Suryapeta (P8) were grouped under Inceptisols, soils of Gollapally (P10) were classified as Entisols and soils of Rajendranagar (P2) were grayed under Vertisols.

Key words : Characterization, Classification, Rice-growing soils.

Effect of Integrated Nutrient Management on the Status of Micronutrients in Long term Rice-rice Cropping System of Andhra Pradesh

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ABSTRACT

Soil micronutrient status was assessed under integrated nutrient management in long term rice-rice cropping system in Alfisols of southern Telangana zone of Andhra Pradesh for two consecutive years during 2005-06 and 06-07. The availability of micronutrients viz, Zn, Cu, Fe and Mn did not show distinct trend of improvement by the application of different levels of NPK through the fertilizers as compared to control. However, the availability of Zn and Cu enhanced significantly through the addition of FYM or *glyricidia* along with chemical fertilizers as compared to the entire nutrient supplements only through the fertilizers. The soil available Fe was in general on par due to the application of fertilizers alone or in combination with organic sources. The available Mn was not influenced by any treatment.

Key words : Alfisols, Integrated Nutrient Management, Soil micronutrients.

Evaluation of Newer Insecticides Against Sucking Pests In Blackgram

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ABSTRACT

A field experiment was conducted to evaluate the efficacy of newer insecticides against sucking pests in blackgram during rabi 2011-12 at RARS, Lam, Guntur, Andhra Pradesh. Among the different insecticides tested as foliar sprays, spiromesifen 240 SC 0.096% was most effective against whiteflies followed by buprofezin 10 EC @ 0.01% and acetamiprid 20 SP 0.004% in blackgram. While, Spinosad 45 SC @ 0.0135% was found promising followed by fipronil 5 SC @ 0.005% against thrips. Among the neonicotinoids, thiacloprid 21.7 SC 0.027 % was found effective against both thrips and whiteflies. The seed yield and B:C ratio were highest from experimental plots treated with spiromesifen 240 SC 0.096% (1188 kg/ha) followed by buprofezin 10 EC @ 0.01% (1146 kg/ha) and spinosad 45 SC @ 0.0135% (1104 kg/ha).

Key words : Blackgram, Foliar application, Insecticides, Thrips, Whiteflies.

Influence of Organic and Inorganic Sources of Nutrients on the Incidence of Sucking Pests of Eggplant (*Solanum melongena* Linn.) and their Natural Enemies

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ABSTRACT

The relative influence of organic and inorganic sources of nutrients on the incidence of sucking pests was studied during 2008-09. Treatments *viz.*, Neemcake 50% (@125 kg/ha) + RDF 50 % (NPK @ 50-30-30 Kg/ha), vermicompost 50% (@1500 kg/ha) + RDF 50 % (NPK @ 50-30-30 Kg/ha) and FYM 50% (@10000 kg/ha) + RDF 50 % (NPK @ 50-30-30 Kg/ha) recorded significantly lower population of sucking pests. The overall influence of various treatments revealed that the higher number of coccinellids per plant were recorded in the experimental plots applied with neemcake 50% + RDF 50% (6.49), vermicompost 50% + RDF 50% (5.73) and FYM 50%+RDF 50% (4.94) respectively compared to control plot (2.37). Whereas the higher spider populations were recorded in the plots applied with neemcake 50% + RDF 50% (6.96 spiders/plant).

Key words : *Amrasca biguttula biguttula*, *Bemisia tabaci*, Coccinellids, Spiders.

Field Reaction of Certain Rice Cultures Against Brown Planthopper (BPH), *Nilaparvata lugens* Stal^o

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ABSTRACT

Eighteen medium and ten long duration rice cultures along with resistant check, Ptb 33 and susceptible check, TN1 were mass screened both under greenhouse and field conditions for their reaction against brown planthopper (BPH), *Nilaparvata lugens* Stal^o at Andhra Pradesh Rice Research Institute and Regional Agricultural Research Institute, Maruteru, West Godavari district, Andhra Pradesh during the period 2010 to 2011. The differential reaction of rice cultures to brown planthopper indicated that fourteen rice cultures from greenhouse and thirteen rice cultures from field studies were found to be resistant to BPH. Among the resistant rice cultures, BM 71 and the resistant check, Ptb 33 was highly resistant with a damage score of '1'. The rice cultures viz., M 401 and L 406 with a damage score of '3' categorized as resistant and the rice cultures viz., L 407 (damage score 3.3), M 406 (damage score 3.67), M 404 (damage score 4.0), M 391 (damage score 4.33), M damage score 405 (damage score 4.34), L 405 (damage score 4.34) M 392 (damage score 4.67), L 400 (damage score 4.67), and L 403 (damage score 5.0) with a damage score in between 3.0 to 5.0 have been designated as moderately resistant.

Key words : *Nilaparvata lugens* (BPH), Rice, Screening.

Influence of Weather Parameters on Seasonal Incidence of Citrus Leaf Miner (*Phyllocnistis citrella* Stainton) in Sweet Orange cv. Sathgudi

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ABSTRACT

Seasonal activity of the citrus leaf miner, *Phyllocnistis citrella* Stainton was investigated during 2009 and 2010 in Sweet Orange at Citrus Research Station, Tirupati, Andhra Pradesh. The leaf miner activity was noticed throughout the year with peak infestation during winter (September to January) months and low or nil damage in peak summer (April, May) months. Peak infestation of *P.citrella* was recorded as 38.4% and 35.4% during the months of December and October in 2009 and 2010 respectively. During the entire study period leaf damage caused by *P.citrella* ranged between 0.3 to 38.4%. Correlation studies of the pest incidence with meteorological data from 2001-2010 indicated that pest damage was positively correlated with both morning (RH1) and evening (RH2) relative humidity ($r = 0.561207$ and 0.436502) and negatively correlated with minimum temperature ($r = -0.62829$) and wind velocity ($r = -0.51968$). Regression analysis resulted that about 79% contribution of observed variation in pest infestation is due to the biotic (existing pest activity on available new flush) and abiotic factors (Temperature, Relative humidity and wind velocity) together.

Key words : Citrus leaf miner, Meteorological data, Seasonal abundance.

Determination of Mechanism of Insecticide Resistance Through Synergist, *s's's'*- tributyl phosphorotrithioate (DEF) in *Spodoptera litura* (Fab.) in Cotton

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ABSTRACT

In the present study the synergist, *s's's'*- tributyl phosphorotrithioate (DEF) was tested with conventional insecticides to know their synergistic effect on resistant Guntur strain of *Spodoptera litura* during *kharif* 2007-08 and 2008-09. Results revealed with synergistic factors of 2.85 and 2.90 at LD₅₀ and 3.32 and 3.13 at LD₉₀, during *kharif* 2007-08 and 2008-09, respectively with chlorpyrifos. The corresponding synergistic values for quinalphos were 2.86 and 2.95 at LD₅₀ and 3.42 and 3.34 at LD₉₀ level. The synergistic factors for endosulfan were 1.19 and 1.43 at LD₅₀ and 1.19 and 2.87 at LD₉₀ level and the corresponding synergistic factors were 2.65 and 3.66 at LD₅₀ and 2.47 and 3.74 at LD₉₀ level for cypermethrin while these values were 2.18 and 3.27 at LD₅₀ and 2.14 and 2.90 at LD₉₀ level for methomyl. The level of resistance to chlorpyrifos, quinalphos, endosulfan, cypermethrin and methomyl were brought down significantly with DEF.

Key words : Insecticide resistance, *Spodoptera litura*, *s's's'*- tributyl phosphorotrithioate.

Effect of Brassinosteroids on Growth Analysis and Yield of Blackgram (*Vigna mungo*. L).

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ABSTRACT

A field experiment was conducted to study the effect of brassinosteroids on growth analysis and yield of blackgram at Agricultural College Farm, Bapatla during *kharif* 2011-12. The treatments comprised of foliar spray of 28-homobrassinolide @ 0.025 ppm, 0.05 ppm, 0.075 ppm, 0.1 ppm at vegetative, pod development and vegetative + pod development stages. Besides these, water spray was maintained in RBD with three replications. Application of 28-homobrassinolide @ 0.1 ppm at vegetative + pod development stage resulted maximum increase in SLW and LAI (14 and 82.5 per cent) than control. It also resulted in highest increase of AGR, CGR, RGR, NAR at the rate of 110, 139, 24.2 and 61.4 per cent respectively, indicating its positive impact with accumulation of drymatter and leaf area. Foliar spray of 28-homobrassinolide significantly increased the yield especially in the sprays at both stages. Harvest index was high with the two sprays compared to alone sprays at vegetative or pod development stage. However spray of 28-homobrassinolide @ 0.1 ppm at vegetative + pod development stage recorded the highest net returns of Rs. 38,235.17 and B-C ratio (1:2.68) and proved superior to the rest of the treatments.

Key words : Blackgram, Brassinosteroids (BR), Yield, Growth, 28-homobrassinolide (HBL), Total Drymatter.

Bananas Grown in Salt Affected Soil Impairs Fruit Development in Susceptible Cultivars

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ABSTRACT

Problem soils primarily affect plant growth through root either directly or indirectly with combination of osmotic and ionic stress. Banana is sensitive to salinity effect. Banana fruit development studies were undertaken in four banana genotypes, Saba (ABB), Ney Poovan (AB), Nendran (AAB) and Robusta (AAA) in salt affected soil (pH 8.1 and EC_{1:2.5} = 3.1). The study revealed that, the tolerant genotype Saba, could maintain the fruit development. The conversion of sugars into starch was not affected in the fruit. The salt susceptible banana cultivars Nendran and Robusta could not produce normal fruit development as it suffered from poor conversion of sugars into starch in the pulp. The Saba genotype seems to be effectively excluding the sodium salt at root or cellular level to maintain physiological functions of the plant.

Key words : Banana cultivars, Fruit growth, Ney Poovan, Robusta, Saba, Salt.

Effect of Soda Oil Dip Method of Raisin making on Recovery and Keeping Quality of Seedless Grape Varieties

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ABSTRACT

Seven commercial varieties of grapes were evaluated to study the effect of soda oil dip method of raisin making on recovery and keeping quality of seedless grape varieties. The raisins prepared from these varieties contained 13.61 to 16.23 per cent moisture, 56.23 to 79.36° Brix (T.S.S), 2.09 to 3.13 per cent acidity, 18.82 to 24.88 mg/ 100g ascorbic acid, 58.75 to 66.57 total sugars and 56.33 to 62.81 reducing sugars. The sensory score out of 5 for overall acceptability ranged from 1.76 to 3.95. Among these cultivars, Manik Chaman followed by Thompson seedless and A18/3 were found to be superior to others in raisin making on recovery and keeping quality by soda oil dip method.

Key words : Raisins, Dip method, Seedless grape, Varieties.

Studies on Genetic Variability, Heritability And Genetic Advance Of Different Vegetable Cowpea (*Vigna Unguiculata* L. Walp) Varieties In Coastal Andhra Pradesh

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ABSTRACT

The genetic variability study was carried out with nine vegetable cowpea varieties. Genotypic and Phenotypic coefficient of variation, heritability and Genetic advance as per cent of mean were estimated for fifteen characters. High estimates of genetic variability coupled with high heritability and genetic advance were observed for plant height, number of primary branches, number of leaves, dry matter accumulation, pod length, pods per plant, mean pod weight, and pod yield per plant and these characters would be of useful criteria for selection. Days to first flowering, days to 50 per cent flowering and days to first picking showed moderate genetic advance and variability. Least genetic advance and variability were observed for Crop duration. All the characters except days to first picking showed high heritability.

Key words : Cowpea, Genetic variability, Genetic advance, Heritability.

Impact Analysis of Andhra Pradesh Water Management Project on livelihood of Farmers in Pilot Area of Musilipedu Southern zone of Andhra Pradesh

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ABSTRACT

Andhra Pradesh Water Management Project has come into operation since November, 2003 for a period of five years i.e up to October 2008 and extended up to October 2010 located at Regional Agricultural Research Station, Tirupati as a Network center to address irrigation water management in tank ayacut supported with bore wells. To implement "Operational Research", the Musilipedu tank ayacut (Musilipedu Village) in Yerpedu mandal of Chittoor district was identified. The impact of the project was scientifically evaluated and statistical analysed in terms of Socio-economic conditions, water use efficiency etc., in the pilot area. The statistical analysis revealed that the increased literacy status helped the APWAM project in effective dissemination of technologies related to water and land productivity enhancement in pilot areas. There was an overall increase in the per capita availability of land from 1.08 ha in 2005 to 1.29 ha in 2010. The land value was also increased due to the increased land productivity after the installation of lock gates to the tank, slush repairs, rehabilitation of supply channel and use of less water technologies. Similarly the net benefit per ha.mm of water increased from 4.6 kg in 2005 to 6.8kg in 2009 and the benefit-cost ratio was increased from 1.53 to 1.71 for rice crop. The statistical hypothesis based on t-test, the effect of Vishnu puddler on water saving in low land transplanted rice is showed significant difference when compared to farmers practice. The awareness and perception capacity of farmers on water and land management technologies was increased significantly with the capacity building programmes of APWAM Project in pilot areas.

Key words : Benefit-cost ratio, Operational Research, Socio-economic conditions, t-test, Water and land productivity,

Normalized Difference Vegetation Index (NDVI) Changes around Godavari River Basin in Andhra Pradesh

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ABSTRACT

Extracting and identifying vegetation from satellite images plays a major role in Remote Sensing. Estimating land cover by interpretation of remote sensing imagery involves Normalized Difference Vegetation Index (NDVI), an indicator that shows vegetation cover. The aim of the present research work is to detect the vegetation changes around Godavari River Basin in Andhra Pradesh from 1992 to 2007. For the present study, two satellite images of Landsat-4 (TM) and Landsat-7 (ETM+) with spatial resolutions of 28m and 15m were used to prepare the land use land cover changes. The satellite images were classified into four classes namely water bodies, barren rock, moderate vegetation and dense forest. The study revealed that, moderate vegetation was increased from 50 to 55% and dense forest was decreased from 31 to 27%.

Key words : Change Detection, Godavari River Basin, NDVI, Remote Sensing.

Some Studies on Drying Characteristics of Tomato Slices

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ABSTRACT

The drying characteristics of tomato slices were studied by using polyhouse dryer, solar cabinet dryer and open sun drying. Dried tomato powder characteristics were studied. The ripened tomato of local variety were taken and cut into slices of 8 mm thick. The pretreatment was given by dipping the tomato slices into 10% salt solution and 5% KMS. The pretreated samples were placed in polyhouse dryer, solar cabinet dryer and open sun drying for drying of tomato slices. The dried slices were fed manually to Willey mill for making powder. Tomato powder was analyzed to lycopene content, reducing sugars, ascorbic acid, TSS, pH and total carbohydrates. The time taken for polyhouse drying is 65 h whereas solar cabinet and open sun drying was 90 h and 110 h respectively. Comparing different methods of drying, solar cabinet dried sample contain high amount of vitamin C, TSS, reducing sugars and carbohydrates as compared to other methods. The tomato powder in solar cabinet dryer may be considered as a better quality product for human consumption.

Key words : Open sun drying, Polyhouse, Solar cabinet Dryer, Tomato slices, Tomato powder.

Performance of Self-Help Groups and Joint Liability Groups in Microcredit Funding

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ABSTRACT

The present study was undertaken in Kadapa and Kurnool districts of Andhra Pradesh with a view to know the performance of SHGs and MFIs in providing financial services to the poor. The study was carried out through collection of data by adopting interview method and simple tabular analysis. The results of the study revealed that self-help groups and joint liability groups achieved their goal of reaching the weaker sections of the population and providing the financial services needed by the poor.

Key words : Joint liability groups, Microfinance, Self-help groups.

Resource Productivity and Allocative Efficiency of Tobacco in Prakasam District of Andhra Pradesh.

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ABSTRACT

This study was conducted to estimate cost and net revenue from tobacco in Prakasam District during 2003-04. The study was conducted in two mandals and six villages were purposively selected from Prakasam district of Andhra Pradesh. A total of 42 respondents were randomly selected from the above six villages. Who were interviewed through a well-designed questionnaire. The Cobb- Douglas production function model was chosen to estimate the resource productivity and returns to scale. Increasing returns to scale prevailed in the study area and also gives signal of higher input use efficiency. MVP to OC ratio was less than unity for inputs like human labour, fertilizers and pesticides indicating excessive use. So there is a tremendous scope for reorganization of resources for curtail the inputs to obtaining maximum profits.

Key words : Allocative, Resource Productivity.

Optimum Crop Mix for Farmers of Kadapa District, Andhra Pradesh

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ABSTRACT

The present study "Optimum crop mix for farmers of Kadapa district, Andhra Pradesh" was undertaken to examine the possibilities and prospects of increasing income through rational allocation of resources under different capital and technological environments. The study was carried out through collection of data by adopting interview method and linear programming technique was used to develop optimum plans for small and large farmers of the study area. The results of the study brought out that there was sub-optimal allocation of resources in the existing plans of small and large farms. The optimal plans indicated the possibilities of increasing income even under existing technology with limited available owned funds. The income was increased further through relaxation of credit and adoption of recommended technology.

Key words : Crop mix, Farmers, Optimum.

Relationship with Profile Characteristics of farmers and their Extent of use of ICTs

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ABSTRACT

The study revealed that majority (65.83%) of the respondents belonged to medium extent of use, followed by low (21.67%) and high (12.50%). The relationship between profile characteristics and extent of use of ICTs by the farmers indicated that computed r-value of education, farming experience, information seeking behaviour, extension contact, economic status, achievement motivation, scientific orientation and innovativeness were positively correlated with extent of use of ICTs and the association was found significant at 1 per cent level of probability. While age, land holding and socio-political participation showed non-significant relation with extent of use of ICTs.

Key words : ICTs use, Farmers, Profile, Relationship.

A Study on Sociometry in Dissemination of Agricultural Information

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ABSTRACT

The study was conducted during 2011-2012 in the adopted village of Agricultural college, Naira, Srikakulam District of Acharya N. G. Ranga Agricultural University, Andhra Pradesh. Sociometry was applied to probe the key communicators in dissemination of agricultural information. Sixty (60) farmers were sampled for the study. The respondents were asked from whom they seek advice or suggestion in matters related to agriculture in general. Their responses were noted and key communicators were identified and diagrammatically depicted using target sociogram technique proposed by Northway, 1940. Sociometric score, Percentage and Cumulative Percentage were calculated. Seven (07) key communicators were identified by the sample respondents. Three (03) key communicators were grouped under low communicators category, followed by two each in medium and high communicator categories. Two high communicators with cumulative percentages 100.00 and 78.89 occupied the central circle indicating the power of influence with respect to dissemination of agricultural information. Two medium communicators with cumulative percentages 61.11 and 38.89 occupied the second circle from the centre. Three low communicators with cumulative percentages 22.50, 10.56 and 0.83 occupied the third circle from the centre.

Key words : Key communicator, Sociometry, Sociogram.

Factors Associated with the Attitude of Entrepreneurs towards Vermicompost Technology

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ABSTRACT

The present study was conducted in Guntur district of Andhra Pradesh. The investigation was done to assess the factors associated with attitude of the entrepreneurs towards vermicompost technology. Ex-post facto research design was followed and a total number of 60 entrepreneurs were approached personally by the investigator for collection of relevant data and facts. The results showed that education, occupation, experience in vermicompost preparation, training received, economic orientation, market orientation, innovativeness, risk orientation and achievement motivation were found to have association with the attitude of the entrepreneurs whereas age, social participation, land holding, family size did not show any association with the attitude of the entrepreneurs.

Key words : Attitude, Entrepreneur, Profile, Relationship, Vermicompost.

Commercial Floriculture: A High Value Enterprise

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ABSTRACT

The Study conducted in Dharmapuri District on Floriculture revealed that a good profit was the major facilitator followed by earning money daily for flower cultivation. Flowers like Rose, Chrysanthemum, Gladiolus, Tuberose, Crossandra, foliage filler crops like asparagus, cut flowers varieties are largely under cultivation. Labour scarcity, lack of water and continuous care were emerged as major constraints in cultivation. Direct sale to flower point at Bangalore to flower agents of near by towns and evening markets were the major mode of flower disposal. Insufficient market knowledge, lack of institutional finance, price fluctuation and lack of storage facilities were the constraints in marketing of flowers as stated by the respondents.

Key words : Commercial, Floriculture, Value enterprise.

Perception of Farmers on Information Provided Through Information boards in Adopted Villages and Their Information Source Utilization Pattern

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ABSTRACT

The investigation was conducted in Prakasam District of Andhra Pradesh during the year 2011-12 to study the perception of the farmers on agricultural information provided through information boards and their sources of agricultural information. Almost equal (46.67 and 43.33%) per cent of the farmers had medium and high perception levels; where as only ten per cent of the farmers were found in low perception group. Majority of the farmers perceived that information provided to them is need based, timely, complete, clear, useful, practically feasible, reduced unnecessary costs, gives them right solution, easy to understand and upgrades their knowledge. Further it was also found that their credible sources of information were friends/neighbors, progressive farmers, dealers, television, newspaper, Krishi Vigyan Kendra and village leaders.

Key words : Information boards, Information sources, KVK, Perception.

Willingness to Pay for Extension Services Among the Grape Growers of Ranga Reddy District in Andhra Pradesh

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ABSTRACT

A study was conducted among the Grape growers to know their willingness for paid extension services. For the purpose of study sixty farmers were selected from six villages of three mandals in Ranga Reddy district of Andhra Pradesh state. Greater proportion of the respondents had high and medium categories of land holdings, innovativeness, achievement motivation, decision making ability, information seeking behaviour, deferred gratification, rationality, scientific orientation, economic orientation, value orientation, market orientation, management orientation, knowledge on enterprise and willingness to pay for extension services. The variables innovativeness, achievement motivation, decision making ability, information seeking behaviour, deferred gratification, rationality, scientific orientation, economic orientation, value orientation, market orientation, management orientation, knowledge on enterprise showed positive correlation with the willingness to pay for extension services.

Key words : Achievement Motivation, Decision Making, Extension, Innovativeness.

Effect of Various Weather Parameters on Initiation and Spread of Tikka Leaf Spot Disease in Groundnut

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Key words : Groundnut, effect of various weather parameters and tikka leaf spot disease.

Screening of Trombay Blackgram Varieties for their Resistance against Pulse beetle, *Callosobruchus maculatus* (F.) under Ambient Conditions

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Key words : Blackgram varieties, Resistance, Pulse beetle, *Callosobruchus maculatus*

Problems Encountered and Suggestions Given By Sugarcane Farmers In North Coastal Districts Of Andhrapradesh

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Key words : Problems, Sugarcane farmers, Suggestions.