

The Andhra Agricultural Journal
Volume 55 (1) 2008

**Effect of Phosphate Rock Enriched FYM on Growth and Yield of
Groundnut (*Arachis hypogaea* L.)**

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ABSTRACT

A field experiment was conducted during *rabi*, 2005-06 on sandy soils of Agricultural College Farm, Bapatla to evaluate the Agronomic efficiency of phosphate rock enriched FYM in groundnut (*Arachis hypogaea* L.). Maximum crop growth, nodulation, filled pods plant⁻¹ and yield with the treatment that received PROM made of double the recommended dose (DRD) of P₂O₅ through PR and FYM in 1:4 ratio which was significantly superior to other.

Key words : FYM, Groundnut, Growth, Phosphate rock, PROM and Yield.

**Effect of Cultivars and Time of Potassium Application on Yield
Attributes, Yield, K-content and Uptake of Rice**

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ABSTRACT

A field experiment was conducted on a sandy clay loam soils of the Agricultural College Farm, Bapatla during *kharif* 2005 to evaluate the influence of cultivars and time of potassium application on yield attributes, yield, K-content and uptake of rice. Significant increase in yield attributes, yield and potassium uptake was observed with Swarna compared to other cultivars. Application of 40 kg K₂O ha⁻¹ in three splits (50% as basal + 25% at active tillering + 25% at panicle imitation) significantly increased the productive tillers, panicle weight, filled grain panicle⁻¹, test weight, grain and straw yield, K-content and uptake of rice.

Key words : Cultivars, K-content and Uptake, Potassium, Time, Yield, Yield Attributes.

**Growth and Yield of Sugarcane as affected by Planting Geometry
and Intercropping**

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ABSTRACT

A field experiment entitled "Studies on Planting Geometry and Intercropping in Sugarcane" conducted for two consecutive years during 2002-03 and 2003-04 at Regional Agricultural Research station, Anakapalle revealed that the cane yield was highest under paired row planting (M₂), which was comparable with normal row planting (M₁). The lowest cane yield was produced with wide row planting (M₃). Sole crop of sugarcane(C₆) produced the highest cane yield, which was on par with coriander (C₂) or greengram (C₃) intercropped with sugarcane. Intercropping of maize (C₁) resulted in the lowest cane yield. Sucrose content of cane at harvest, CCS and juice purity were not significantly influenced by either with planting

geometry or intercropping. The highest sugar yield was realized with paired row planting (M_2). The highest cane equivalent yield of the cropping system was noticed with paired row planting (M_2), which was comparable with normal planting (M_1). Wide row planting (M_3) resulted in the lowest cane equivalent yield. Intercropping of coriander followed by ginger (C_5) resulted in the highest cane equivalent yield, whereas, it was found the lowest with intercropping of coriander (C_2).

Key words: Intercropping, Planting geometry, Sugarcane.

Effect of Time of Sowing, Spacing and Seed Rate on Seed production Potential and Economics of Fodder Cowpea Under Rainfed Condition

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ABSTRACT

A Field experiment was conducted during *kharif* 2005 on medium deep black clay soil under rainfed condition at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad, to study the effect of time of sowing, spacing and seed rate on seed production potentiality of fodder cowpea. Sowing in June 2nd fortnight recorded significantly higher seed yield (925 kg ha^{-1}), haulm yield (4442 kg ha^{-1}) and harvest index (0.20) compared to July 1st fortnight (675 kg ha^{-1} , 4028 kg ha^{-1} and 0.16, respectively) and July 2nd fortnight (519 kg ha^{-1} , 3701 kg ha^{-1} and 0.16, respectively) sowing. The row spacing of 30 cm recorded significantly favourable growth and yield attributes, seed yield (743 kg ha^{-1}) and haulm yield (4198 kg ha^{-1}) compared to 45 cm. Seed rate had no significant influence on growth and yield of fodder cowpea. The combination of June 2nd fortnight sowing with 30 cm row spacing at 30 kg ha^{-1} seed rate recorded higher seed yield (1056 kg ha^{-1}), haulm yield 94970 kg ha^{-1}) and significantly higher net income (Rs. 28282 ha^{-1}) and benefit cost ratio (4.71).

Key words : Fodder cowpea, Seed rate, Seed yield, Sowing time, Spacing.

Evaluation of Various Cropping Systems under Canal Irrigation of Sriram Sagar Project Command

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ABSTRACT

Demonstrations on different cropping systems were conducted during 1999 - 2004 under DBM - 26 of Kakathiya canal under Sriram Sagar Project in Warangal. Cultivation of mono crops of cotton, chilli, maize-maize was the usual farmers practice in the command. These systems have produced lower yield and net returns. In maize based systems, maize - chilli recorded significantly higher maize equivalent yield (17.4 t ha^{-1}) with net returns of Rs. 59,968/- per ha^{-1} followed by maize groundnut (10.1 t ha^{-1}) with net returns of Rs. 34,022 per ha. These systems were superior to maize - maize system. Similarly, in cotton based systems, cotton- ridge gourd recorded higher cotton equivalent yield (5.27 t ha^{-1}) with net returns of Rs. 52,023 /- per ha followed by cotton - cluster bean system (5.02 t ha^{-1}). In chilli based systems, chilli - bhendi recorded higher chilli equivalent yield (4.0 t ha^{-1}) followed by chilli - ridge gourd (3.87 t/ha) with higher net returns (Rs. 50,029/- per ha^{-1}) followed by chilli - bhendi (Rs. 42,775/- per ha^{-1}). Cultivation of vegetables in these systems increased net returns and utilized the irrigation water more efficiently.

Key words: Cropping systems, Equivalent yield, Net returns.

Stability Analysis for Biomass, its Partitioning Efficiency and

Productivity in Blackgram

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ABSTRACT

Stability analysis was undertaken with sixteen genotypes along with two checks for seed yield per hectare and two of its important component traits, biomass and harvest index in blackgram. The study revealed the genotypic differences for yield but the linear and non-linear components of GxE were not significant. The linear component for biomass and linear and non-linear components for harvest index of GxE were significant. As many as eleven genotypes have given higher yield than the check (TAU-1). Ten genotypes were found better over check, and TAU-1 topped in the list for harvest index. The genotypes, 946-PLU-58 and 813-PLU-126 were high yielding and stable for biomass and harvest index. The study indicated the need for identifying the genotypes with higher biomass so that they could be used for improving productivity with increased biomass and better partitioning efficiency.

Key words: Blackgram, Biomass, Harvest Index, Stability Analysis.

Characterization and Diversity Analysis of Cytoplasmic Male Sterile lines in Sunflower (*Helianthus annuus* L.)

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ABSTRACT

Forty diverse cytoplasmic male sterile lines of sunflower were evaluated for different quantitative and quantitative traits. High phenotypic and genotypic coefficients of variation were recorded for filled seeds per plant, seed yield, total dry matter and harvest index. High heritability coupled with high genotypic advance as per cent of mean was obtained for almost all important economic traits except days to 50% flowering and days to maturity.

Key words: Characterization, Cytoplasmic male sterile lines, Sunflower.

Clay Mineralogy of Red and Black soils of Vegetable Growing area of Guntur District, Andhra Pradesh

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ABSTRACT

Studies on six soil profiles representing black and red soils of vegetable growing area of Guntur District revealed that the black soils were clay to clay loam in texture and exhibited relatively higher cation exchange and base saturation values than red soils having sandy clay to sandy loam texture. Black soils were dominated by smectite group of minerals with minor quantities of illite and kaolinite. Kaolinite was the major mineral followed by illite in red soils, which did not contain any smectite minerals.

Keywords: Black soils, Clay mineralogy, Illite, Kaolinite, Red soils, Smectite.

Effect of Fly Ash and Farm Yard Manure Application on Yield and Uptake of Nutrients by Rice Grown on Inceptisol

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ABSTRACT

A field experiment was conducted in a fine loamy mixed hyperthermic Typic Haplustept soil during *rabi*, 2004-05 to study the effect of fly ash and FYM on yield and uptake of nutrients by rice var. Tellahamsa. The grain and straw yield of rice was significantly increased with fly ash, FYM and their interactions. The highest grain (5.84 t ha⁻¹) and straw yields (7.87 t ha⁻¹) were recorded by combined application of fly ash @ 10 t ha⁻¹ and FYM @ 10 t ha⁻¹ which was on par with fly ash @ 15 t ha⁻¹ along with FYM @ 10 t ha⁻¹. Application of fly ash along with FYM has resulted in higher uptake of nutrients by rice. The fly ash level of 10 t ha⁻¹ was on par with 15 t ha⁻¹. Application of fly ash @ 10 or 15 t ha⁻¹ along with FYM have resulted in increase mean total uptake of N, P, K and Zn at harvest by 2.5, 2.3, 1.7 and 2.7 times, respectively when compared to the control (FA₀FYM₀). Similarly, FA₁₀ or FA₁₅ along with FYM₁₀ have resulted in 38, 75, 92 and 49 percentage of increase in total uptake of S, Fe, Mn and Cu at harvest, respectively.

Key words: Fly ash, FYM, Nutrients uptake, Rice, Yield.

Isolation and Development of Native Strains of *Rhizobium* and P-solubilising Bacteria for Rice Fallow Blackgram

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ABSTRACT

Isolation of native strains of *Rhizobium* and P-solubilising bacteria was done from rhizosphere soils of rice-fallow blackgram. Native Rhizobial strains of RBG 314 and RBG 301 were found promising and RBG 314 recorded the highest plant drymatter production. The PSB isolates AMT 1001 and AMT 1005 produced the higher solubilization zones. A pot experiment conducted using the combination of these isolates, indicated significant effect on dry matter production in blackgram and also indicated synergistic effects of dual inoculation of *Rhizobium* & PSB on blackgram.

Key words: Dry weight of plants, Native strains of *Rhizobium*, P-solubilising bacteria, Solubilisation zone.

Effect of Zinc on Blackgram in Rice- Blackgram Cropping System in Coastal Saline Soils

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ABSTRACT

A field experiment was conducted during kharif and rabi 2002-2003 on a saline soil, that is low in available Zn and N, medium and high in available P and K, respectively, to study the effect of various levels of Zn, method of application and residual effect of Zn on yield, nutrient concentration and nutrient uptake in blackgram. The maximum grain and hull yields of blackgram were recorded with treatment T6 (25 kg ZnSO₄ ha⁻¹ to blackgram). Foliar treatments at different stages of blackgram were also compared. The treatments T2, T3 and T4 that received ZnSO₄ through soil applications in previous crop of rice recorded low yield compared to direct application. The nutrient status of soil at the end of rice-blackgram cropping sequence indicated that the available N, P and Zn status of soil increased and that of K was found to decrease when compared with the initial soil status.

key words: Rice-blackgram cropping system, Saline soils, Zinc .

Feasibility Study of Filter material for Subsurface Drainage System: Kalipatnam Case Study

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ABSTRACT

Filter material requirement for installation of subsurface system of Kalipatnam pilot area was assessed based on the soil texture at drain depth, soil SAR, ground and irrigation water quality. Textural analysis data at the sampling points were interpreted with the help of textural class, particle size distribution curve, per cent clay, clay/silt ratio and Surfer 7.0 map for clay%. Based on the results, filter material is required for installation of subsurface system and out of the tested prediction criteria for requirement of filter material clay % mapping, clay%, textural class, , particle size distribution curve are giving good indication of filter material whereas auger hole is over estimating for these soils. Clay/silt ratio criteria of 0.5 are not fitting for these soils. Surfer 7.0 mapping of percent clay at drain depth is giving best estimate out of the tested criteria.

Key words: Auger hole, Clay/silt ratio, Filter material, Per cent clay, Texture class.

Biology of Brinjal Shoot and Fruit Borer, *Leucinodes orbonalis* Guen. under Allahabad conditions

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ABSTRACT

A laboratory experiment was conducted to study the biology and morphometrics of brinjal fruit and shoot borer at the Department of Plant Protection, Allahabad Agricultural Institute-Deemed University, Allahabad. The average incubation period of egg was 4.3 days, larva passed through five instars and total larval and pupal periods were 12.33 and 69.24 days. The pupation took place in the glass jars, soil, muslin cloth, sometimes inside the fruits and on the leaves of the plants. The adult male and female longevity were 1.82 and 3.12 days, with a total live period of 25-34 days. The pre oviposition, oviposition and post oviposition periods were 7.4 hours, 2.43 and 1.26 days respectively. The mean duration from egg to adult stage was 25.87 days. There is variability in the levels of fecundity with an average of 174 eggs/female. Morphometric data for all the stages of the instar were also recorded and presented.

Key words: Biology of *Leucinodes orbonalis*, Brinjal, Morphometrics.

Comparative β -Carotene content of *Spirulina* Strains at different days of Incubation

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ABSTRACT

Carotenoids are synthesized *de novo* by all the photosynthetic organisms and by some microorganisms. The β -carotene content was ranged from 171.1 to 231.7 ($\mu\text{g g}^{-1}$ dry weight) in different *Spirulina* strains. The four top ranked strains based on LSD grouping were Sp₄ (231.7), Sp₇ (212.8), Sp₃ (185.9) and Sp₂ (182.90 $\mu\text{g g}^{-1}$ dry weight). There was a gradual increase in β carotene accumulation with the peak observed at 15th day of incubation followed by a slow decline there after upto a period of 25th day of incubation. Strain x days of incubation interaction studies were significant and the top ranked combinations were Sp₄ at 15th day (295.6 $\mu\text{g mL}^{-1}$), 20th day (289.5 $\mu\text{g mL}^{-1}$) and at 25th day of

incubation ($282.4 \mu\text{g mL}^{-1}$). High carotenoid production by Sp_4 can be exploited as natural food colouring additive.

Key words: Carotene, Carotenoids, HPCL, *Spirulina*

Character Association and Path Coefficient Studies in Ridge Gourd (*Luffa acutangula* (Roxb.) L.)

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ABSTRACT

Yield per vine in ridge gourd was significantly and positively associated with number of fruits per plant and the node number at which first female flower appeared, fruit volume and fruit weight. Path coefficient analysis revealed that number of fruits per vine, node number, at which first female flower appeared and fruit volume were the major yield contributing characters with high direct effects on yield per vine.

Keywords: Correlation, Path analysis, Ridge gourd.

Growth Trends of Major Vegetables in Visakhapatnam District of Andhra Pradesh

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ABSTRACT

The study examined the trends in growth rates of major vegetables in Visakhapatnam district and reveals that the compound growth rates of area for Tomato and Onion were negative. Bhendi exhibited the highest growth rate in area and production where as productivity registered highest in case of Onion. It may be inferred that area is the main guiding force directing the production in Brinjal, Bhendi and Chillies. However, increase in productivity reflected through technological innovation can be used to delimit the area constraints.

Keywords: Growth Trends, Vegetables.

Energy Utilization of Rainfed Sugarcane in Srikakulam District

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ABSTRACT

The sugarcane crop is a high energy intensive crop irrespective of its rainfed cultivation. Between two groups, group II who has contract with sugar factory is more energy intensive than group I, who is practicing self cultivation. The per hectare use of energy is varied from 56124.37 MJ/ha in group I to 60513.78 MJ/ha in group II farmers. Among all sources of energy utilization, seed (29,005.18 MJ/ha in group I and 23517.10 MJ/ha in group II) is found to be major source. Among different operations transportation contributed for maximum energy utilization.

Keywords: Energy utilization, Rainfed, Sugarcane.

Establishment and Maintenance of Mango orchard by Tribal Farmers of Khammam District - An Economic Evaluation

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ABSTRACT

The total cost of maintenance of Mango orchard during the bearing period was Rs. 11391.51 per hectare. The major share was occupied by the variable cost Rs.5541.24/ha (48.64%) and share of establishment cost was Rs.891.68 (7.83%) . The per hectare net returns obtained were Rs. 35808.49. Discounted benefit cost ratio of the mango was 2.49 and this indicates mango is the most profitable crop. The high positive NPV indicates the soundness of the investment made in mango garden. The internal rate of return obtained was high than the prevailing market rate of interest indicating the favourable nature of returns.

Keywords: Mango, Orchard.

Quantitative Understanding of the Problems in Agriculture through PRA Techniques – A Case Study

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ABSTRACT

A study was conducted through application of PRA techniques to assess the problems related to farming activities in a village of West Bengal. Results revealed that the low water availability to crops and non-availability of HYV seeds were the most severe problems stated by the farmers. The magnitude values were calculated and value based index were determined to prioritize the most severe problem, which should be targeted for solving on priority. Other problems identified were unremunerative price of the produce, pests & disease incidence, pesticide inefficiency, lack of marketing facilities and non-availability of credit. Research and development works can be oriented keeping in view the identified problems for upliftment and well-being of the people at the rural settings.

Key words: Magnitude of village problems, PRA, Rank based quotient.

Cost-Return Profile of Shrimp Farming in West Godavari District of Andhra Pradesh

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ABSTRACT

The cost-return structure of shrimp aquaculture and related profitability measures are analyzed in this article to examine the economic feasibility for long-term sustainability of the culture. In view of the recent set back of brackish water prawn farming, the present study is aimed to highlight the profitability of shrimp aquaculture in West Godavari district of Andhra Pradesh. Maximum investments as well as productivity were observed in large ponds, however the net profits and other profitability parameters were in favour of medium size ponds. The medium farmers followed by large farmers emerged as technologically the advanced group, who adopted meticulously scientific culture management practices. The revival phase of shrimp culture from the recent set back was observed by the study. The highest share of total cost (82 per cent) was occupied by feeds, stocking material and fuel and electricity, which were excessively used and needs necessary readjustments. The author forecast that the shrimp culture would continue with out incurring any losses under normal favorable conditions in the study area.

Key Words: Aquaculture, Break-even output, Count, Grow out ponds, Shrimp, Stocking density.

Economic Analysis of Fresh Water Skimming Techniques in Coastal Aquifers of Andhra Pradesh

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ABSTRACT

While the inland crop production can be managed by an effective combination and conjunctive use of canals, tanks and wells, the coastal belt crop production solely depends on the fresh water aquifers levied with a limit on well pumping. Solutions through skimming techniques were considered on a regional perspective for sustenance of technologies and their operational strategies in the coastal area. Besides execution of these technologies, their economic viability and social acceptance at the farmers' level are equally important. The economic viabilities and social acceptabilities of skimming technologies were also ascertained in addition to their technical feasibilities. Impact of the improved technologies on agri-business of the farmers revealed that all the important agro-economic parameters viz., cropped area, yield levels of major crop (ground nut), land value and lease value of land were increased in the study area due to the effective implementation of the improved technologies over traditional method. To be more precise, skimming well technology with horizontal collectors recorded more benefits over shallow tube well and multi-strainer tube well farmers. The economic appraisal of the improved technologies at farmers level – using discounting techniques revealed that Collector well with horizontal collectors contributes higher benefits to the farmers followed by multi-strainer tube well and shallow tube well technologies. The study has revealed that the improved fresh water skimming techniques outlined have promising future prospects for sustaining crop production along the coastal belts.

Key words: Collector well, Discounting techniques, Multi-strainer well, Shallow tube well.

Personal, Social and Psychological Profile of the Technical Staff of Krishi Vigyan Kendras (KVKs) in Northern Karnataka

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ABSTRACT

Majority of the staff members were in the age group of thirty to fifty years having M.Sc(Ag) qualification. Majority of the respondents were found to be in medium category with respect to psychological characteristics viz., organization climate, organization stress, organization commitment, job autonomy, job stress and job satisfaction.

Key words: Job autonomy, Krishi vigyan kendra, Organization climate, Organization commitment, Profile.

Research Note

Optimum Spatial and Nutritional Requirements of *Bt* Cotton Hybrid (Mallika) under Irrigation

P Raghu Rami Reddy M Gopinath L Jalapathi Rao

Crop-Weed Competition Studies in Rice Fallow Blackgram

A S Rao

Evaluation of Chickpea Breeding lines for Yield and Drought

**Tolerance Attributes in Scarce Rainfall Zone of
Andhra Pradesh**

V Jayalakshmi, G Appa Rao and T Yellamanda Reddy

**Response of Certain Pigeonpea Entries against
Legume Pod Borer, *Helicoverpa armigera***

S Malathi, S Vanisree, K V Radhakrishna and L Jalapathi Rao

**Efficacy of Certain New Insecticides against Fruit Infestation by
Leucinodes orbonalis Guen. on Brinjal.**

V Chinna Babu Naik, P Arjuna Rao, P V Krishnayya and V Srinivasa Rao

**Effect of Plant Products against Sheath Blight of Rice
(*Oryza sativa* L.)**

P Venkateswarlu, C Subba Reddy, V M Krishna Murthy and V Rama Subba Rao

**Modified Selective Medium for Soil Population Enumeration of
Aspergillus niger, a Potential Biocontrol Agent**

A K Patibanda and B Sen

**Peyaraphuli Variety of Mango in West Bengal Deserves
Attention**

B C Mazumdar

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