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Productivity, Quality and Economics of Bt Cotton Hybrids as Influenced by Planting Density

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ABSTRACT

A field experiment carried out during Kharif, 2006-07 at Agricultural College Farm, Bapatla revealed that Bt cotton hybrids (RCH-20 Bt, Mallika Bt, Bunny Bt) recorded significantly higher seed cotton yield over Bunny non-Bt hybrid. Mallika Bt and Bunny Bt hybrids recorded significantly higher seed cotton yield hectare⁻¹ over RCH-20 Bt and Bunny non-Bt. The highest plant density of 37,037 plants ha⁻¹ recorded the highest seed cotton yield ha⁻¹, gross returns, net returns and BCR. The quality parameters viz., ginning percentage, 2.5% span length and fibre strength were not significantly influenced by either cotton hybrids or plant densities. Mallika Bt with the plant density of 37,037 plants ha⁻¹ gave the highest yield, net returns and B:C ratio than the remaining treatment combinations of Bt cotton hybrids and plant densities.

Key words : Bt Cotton Hybrids, Economics, Plant Density, Productivity, Quality.

Crop Diversification With Ricebean-Based Intercropping Systems For Maximising Productivity, Profitability and Energy Use Efficiency in Rainfed Upland

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ABSTRACT

A field experiment was conducted at the Central Research Station, Orissa University of Agriculture and Technology, Bhubaneswar during *kharif* seasons of 2007 and 2008 to study the performance of ricebean-based intercropping systems in rainfed upland. The soil was well drained loamy sand in texture with acidic reaction (pH - 5.6), low in available N (230.4 kg ha⁻¹), medium in available P (14.6 kg ha⁻¹) and K (164.2 kg ha⁻¹). The experiment comprised of 10 treatments laid out in a randomized block design with 3 replications. The treatments were ricebean (sole), maize (sole), arhar (sole), sorghum (sole), ricebean + maize (2:1), ricebean + maize (4:2), ricebean + arhar (2:1), ricebean + arhar (4:2), ricebean + sorghum (2:1), ricebean + sorghum (4:2). The growth parameters, yield attributes and yield of sole crop of ricebean were significantly higher than ricebean grown in association with maize/arhar/sorghum. Performance of ricebean in association with arhar at 4:2 row ratio was better compared to its association with other crops irrespective of row ratios. The rice bean yield under ricebean + arhar (4:2) was 23.6 % less than sole ricebean (11.52 q ha⁻¹). However, considering the intercropping system as a whole, ricebean + arhar (4:2) excelled all other treatments in terms of system productivity (19.15 q ricebean equivalent yield), land equivalent ratio (1.36), net return (Rs.20,037 ha⁻¹) and energy use efficiency (13.93 q/MJ x 10³). The productivity, net return and energy use efficiency under ricebean + arhar (4:2) were 66.2, 121.8 and 56.3% more than sole ricebean, respectively.

Key words : Intercropping system, Sole crop, System productivity, Row ratio.

Studies on Genetic Variability, Correlation and Path Coefficient Analyses in Rice Under Saline Conditions

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ABSTRACT

A field experiment was conducted using fifty six saline tolerant rice genotypes during *khariif* – 2008 to study the extent of variability and relation ship among yield and yield component characters under saline conditions at Machilipatnam, Andhra Pradesh. Coefficients of variation were high for number of grains per panicle and grain yield per plant. The characters number of grains per panicle and 100 seed weight had high heritability with high to moderate genetic advance as percentage of mean. The character 100 seed weight had positive association with plant height, number of grains per panicle and grain yield per plant. Plant height showed positive direct effect and positive association with grain yield. Number of grains per panicle had positive direct effect, which was approximately to its correlation coefficient with grain yield.

Key words : Correlations, Path Analysis, Rice, Saline, Variability.

Multivariate Analyses in Castor (*Ricinus communis* L.)

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ABSTRACT

Fifty four genotypes of castor representing the broad spectrum of variation were assessed for genetic divergence for twenty eight characters using Mahalanobis' D^2 statistic, cluster analysis and principal component analysis. On the basis of these three clustering methods nine and eight clusters were obtained for D^2 statistic and principal component analysis respectively.

Key words : Castor, Cluster analysis, D^2 analysis, Principal Component Analysis

Genetic Causes of Heterosis for Fruit Yield in Okra (*Abelmoschus esculentus* (L) Moench)

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ABSTRACT

In the present investigation the genetic causes of heterosis in okra was elucidated by using (7 x 7) diallele analysis. It was found out that combining ability is important for the observed heterosis and not the gene distribution. The direct and reciprocal cross combinations of Pusa A4 x Punjab Padmini, Varsha Uphar x Punjab Padmini, Pusa A4 x EMS 8 and the cross Parbhani Kranti x Punjab Padmini and Pusa A4 x Parbhani Kranti which portrayed high mean and commercial heterosis were endowed with significant *sca* effects and had both or atleast one of the parents with significant *gca* effects.

Key words : *Gca* and *sca* effects, Gene Distribution, Genetic Diversity, Heterosis.

Genetic Variability, Character Association and Path Coefficient Analysis in *Gossypium hirsutum*

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ABSTRACT

Sixty genotypes of cotton (*Gossypium hirsutum* L.) of diverse origin were studied for their genetic variability, character association and path analysis. Wider variability was observed for number of monopodia plant⁻¹, plant height, number of bolls plant⁻¹ and seed cotton yield plant⁻¹ among 15 characters studied. High heritability coupled with high genetic advance was observed for plant height, number of monopodia plant⁻¹, number of bolls plant⁻¹, boll weight, lint index and seed cotton yield plant⁻¹. The correlation and path coefficient analyses together indicated that number of monopodia plant⁻¹, number of bolls plant⁻¹, boll weight and ginning out turn had significant positive association with seed cotton yield plant⁻¹ and these traits may be given due weightage in selection programme for crop improvement.

Key words : Cotton, Correlation, Path Analysis.

Correlation and Path Coefficient Analyses in CMS Lines for Floral and Morphological Traits in Rice (*Oryza sativa* L.)

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ABSTRACT

Correlation and path coefficient analyses were done using floral and morphological traits in 15 cytoplasmic male sterile lines of rice. Correlation studies revealed that outcrossing percentage had positive and significant association with panicle exertion percentage, angle of floret opening, flag leaf angle, duration of floret opening, stigma length, anther length and stigma exertion percentage. While, path analysis indicated that panicle exertion percentage, angle of floret opening, flag leaf angle, floret opening duration, stigma length, anther length and stigma exertion per cent had positive direct effect on outcrossing percentage.

Key words : Correlation, CMS lines, Hybrid Rice, Path Coefficient.

Survey on Fertility Status of Cashew Gardens in Coastal Districts of Andhra Pradesh

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ABSTRACT

Thirty six soil samples were collected from coastal districts of Andhra Pradesh, from different depths (0-15, 15-30 and 30-45 cms) of ten- year old cashewnut plantations and were analyzed adopting standard procedures during 2006. In general these soils were nearer to neutral and slightly alkaline in reaction and free from salt stress. Available N, P, K, S, Ca, Mg, Mn, Zn and Fe ranged from 141.23 to 384.36 kg ha⁻¹, 13.29 to 28.12 kg ha⁻¹, 144.42 to 189.80 kg ha⁻¹, 10.46 to 25.12 ppm, 1.71 to 2.45 [cmol (P⁺) kg⁻¹], 0.06 to 0.84 (cmol (P⁺) kg⁻¹), 5.42 to 13.25 ppm, 1.03 to 1.37ppm and 3.77 to 9.24 ppm, respectively. The availability of all the nutrient contents decreased with increasing depth of soil.

Key words : Cashew, Soil nutrients

Response of Brinjal to different levels of Drip Irrigation with and without Mulch on Growth, Yield and Water Use Efficiency

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ABSTRACT

The combination of drip irrigation with plastic mulch enables better plant micro climate and contributes to higher yields. Field experiment was carried out at Precision Farming Development Centre (PFDC), College of Agriculture, Rajendranagar, Hyderabad on a sandy loam soil having adequate drainage during *Kharif*- 2004, 2005 and 2008 to evaluate the response of different levels of irrigation with and without black LDPE mulch film. Brinjal crop irrigated with drip at 0.80 PE (Pan Evaporation) combined with plastic mulch (T_6) recorded the highest benefit cost ratio which was recorded 47.59 % more yield than the conventional method of irrigation and it was recorded the better Water Use Efficiency than the conventional method of irrigation as 2.92 t/ha-cm. Hence treatment drip irrigation at 0.8 PE with plastic mulch can be recommended.

Key words : Brinjal, Drip irrigation, Plastic mulching.

Design and Cost Economics of Rooftop Rainwater Harvesting System for College and Hostel Buildings of CAE Campus, Bapatla

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ABSTRACT

Water is a life-blood of the environment and it is a limited universal solvent, which is essential for all forms of growth and development of human, animal and plants to sustaining the basic need for their economic activities. However, water is a renewable resource which is gift from nature because of its availability in space and time and is limited by climate and hydrological condition. Hence an attempt is made to design and evaluate the cost economics of roof top harvesting system. The total rooftop surface area of College building and UG boys' hostel building were 1061.9 m² and 608.74 m² respectively. The total cost for the installation of the rooftop rainwater harvesting structure for College and UG boy's hostel buildings were Rs. 55385.18 and Rs. 33241.14 respectively. The benefit cost ratio for the installation of the rooftop rainwater harvesting structure for College and UG boy's hostel buildings were 1.58 and 1.50. The Net present worth for the installation of the rooftop rainwater harvesting structure for College and UG boy's hostel buildings were Rs. 73283.39 and Rs. 38604.56. The Payback period for the installation of the rooftop rainwater harvesting structure for College and boys' hostel buildings were 0.58 and 0.51.

Key Words: Cost economics, Rooftop surface area, Rooftop rainwater harvesting system.

Personal, Situational and Socio-Economic Characteristics of Cotton Growers in Distress Areas of Andhra Pradesh

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ABSTRACT

Cotton was considered as 'white gold' in the initial years of its introduction. Later, failure of the same was attributed to suicides of farmers. An attempt has been made in this study to look in detail the personal, situational and socio-economic profile of cotton farmers in distress areas of Guntur and Warangal districts, where in considerable number of farmers suicides had occurred. About 46 per cent of the respondents belong to small farmers category are below 35 years where as about 41 per cent of the big farmers category are middle aged (36-50 years). Majority of the respondents had primary to high school education. Great majority (more than 80 %) of the respondents have the occupation of agriculture + labour. Nuclear family is predominant among the respondents contributing to more than 80 percent of the respondents. About 68 per cent of the small farmers and 28 per cent of the big farmers incurred losses. Majority had more than 10 years of farming experience. No abnormalities were found with regard to the situational and socio-economic characteristics of the respondents. There is no striking feature (except losses realized by 49 per cent of the farmers and the negative mean income with small farmers and resulting indebtedness) which can be attributed as an important reason for the suicides in the study area.

Key words : Cotton, Growers, Situational, Socio-economic.

Levels of Alienation of Cotton Growers in Distress Areas: A Micro Study in Guntur and Warangal Districts of Andhra Pradesh

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ABSTRACT

The Ministry of Agriculture & Co-operation, Govt. of India reported that 11782 farmers have committed suicides in the country during last five years. Most of these suicides have been reported from cotton growing areas of Maharashtra, Andhra Pradesh, Karnataka and Punjab and other states. In this context, an attempt has been made in this study to look at the alienation of cotton growers. The study was conducted in Guntur and Warangal districts of AP considered as major cotton growing areas during 2007. The alienation was measured on four variables i.e., powerlessness, meaninglessness, isolation and self estrangement. The findings reveal that majority of the respondents are moderate to high in economic and socio-political powerlessness issues. An equal percentage of the respondents are in agreement with the statement that cotton farming is trapped in vicious circle of drought and rain. Majority agreed that isolation is felt due to engagement of each one with their own commitments and can not spend time with friends, relatives and family members. Regarding majority of the statements that reflect self-estrangement respondents are under undecided stage. This might be due to confused stage of cotton farmers because of earlier sufferings of cotton and last few years cotton is fetching good returns. Great majority (about 80 per cent) of the respondents had medium alienation followed by high (about 20 per cent) alienation. Same trend was observed among both the categories i.e., up to 2 ha and more than 2 ha refelecting that farm size does not have influence on alienation.

Key words : Alienation, Cotton, Growers.

Research Note

Optimization of Safflower (*Carthamus tinctorius* L.) Production Technology under Resource Constraints

C Sudhakar , C Sudha Rani and Patibanda A K

Performance of System of Rice Intensification (SRI) under Different Planting Geometry and Age of Seedlings

G Veeranna and P Raghu Rami Reddy

Component Analysis in Pigeonpea (*Cajanus cajan* L. Millsp)

Ch Sreelakshmi , D Shivani and C V Sameer Kumar

Effect of Genotypes and Mother Plant Nutrition on Growth and Yeild Parameters in Makoi (*Solanum nigrum* L.)

Roopashree R, Channakeshava B C, Sreeramu B S and Bhanuprakash K

Effect of Organic and Inorganic Sources of Nitrogen on Yield, Yield Attributes and Quality in Soybean-Maize Cropping System

R Uma Reddy and S Narender Reddy

**Field Screening of Certain Pigeonpea Genotypes Against Gram
Pod borer (*Helicoverpa armigera*) and Pod fly
(*Melanagromyza obtusa*)**

S Malathi

**Studies on the Bunch Preference by Coconut Eriophyid Mite
Aceria guerreronis Keifer (Acari : Eriophyidae) in Tamil Nadu**

K Balaji and A Thanga Hemavathy

**Carbohydrate Utilization and Biochemical Properties of Some
Phylloplane Bacteria**

P Kishore Varma , M Raghavendra and P Ramesh

Constraints and Suggestions Perceived by Rice FFS Farmers

N Ch Balu Naik , CH Ramesh Babu , G B M Ram Naidu and V Srinivasa Rao

**Constraints and Suggestions of the Banana Growers in Guntur
District of Andhra Pradesh**

P Sreekantha Varma, P Rambabu, Ch Ramesh Babu and V Srinivasa Rao

**Farmers Perception on Technology Attributes of Integrated Pest
Management in Brinjal**

O Sarada and G V Suneel Kumar

**Attitude of Farmers Towards The IPM Practices in Dry Land
Paddy**

D P Nagdeve and P Venkataramaiah

Assured Rainfall Estimation Through Percentiles

K Kiran Prakash, B Ravindra Reddy and R Abbaiah

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