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**Effect of Nitrogen Levels and Schedule on Yield, Yield Attributes and Quality of Bt Cotton Hybrids**

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**ABSTRACT**

A field experiment was conducted during the *Kharif* season of 2006-07 to study the nitrogen management in Bt cotton hybrids under rainfed conditions at the Agricultural Research Station, Adilabad. Bt cotton hybrid RCH-2 accumulated significantly larger dry matter than Bunny. The dry matter production reduced with every increment of additional N from 92 to 150 kg ha<sup>-1</sup>. The split application of N at different times was not significant. The yield attributes of Bt cotton hybrids such as plant height number of bolls per plant and number of branches per plant were responsive to increase in the level of N. The split application of N at 25,55,85 and 115 DAS of the crop was best schedule to maximize the production of sympodial branches per plant and number of bolls per plant. Bt cotton yield increased significantly with the increase in nitrogen levels upto 150 kg N ha<sup>-1</sup>. Ginning percentage and halolength significantly improved by the application of high level of fertilizer at 120 kg N ha<sup>-1</sup>, which was found to be optimum.

**Key words** : Nitrogen Levels, Nitrogen Schedules, Quality, Yield

**Phenotypic Stability Analysis in Blackgram  
[*Vigna mungo* (L.) Hepper] Using Eberhart and Russell  
and AMMI Models**

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**ABSTRACT**

Twelve blackgram genotypes were evaluated for several characters over six environments (3 sowing dates with 2 fertility levels). The analysis of variance of Eberhart and Russell (1966) indicated that GXE (linear) was significant for characters viz., days to maturity, pod length, number of seeds per pod and seed yield per plant under study and that genotypes differed significantly. AMMI is a useful tool for interpreting genotype x environment interaction in multi-environment trials. Among the AMMI components first four IPCA axes were explained most of the portion of G X E interaction than other IPCA axis for the five characters under study. According to AMMI analysis the genotypes like the genotypes 1 and 6 (plant height); 5, 11, 12 and 8 (number of pods per plant); 5, 9 and 10 (number of seeds per pod); 2, 5 and 3 (for 1000 seed weight); 1, 3 and 7 (seed yield per plant); 12, 5 and 3 (protein content) are more stable because they are having IPCA score near zero i.e. they show less interaction with environments. According to Eberhart and Russell the genotypes like 6 and 7 (plant height); 2, 4 and 10 (number of pods per plant); 6 and 7 (number of seeds per pod); 4, 5, 11 and 12 (1000 seed weight); 6 and 10 (seed yield per plant); 4, 5, 9 and 10 (protein content) showed desirable performance.

**Key words** : AMMI, Blackgram, Stability

**Phenotypic Stability Analysis in Greengram [*Vigna radiata* (L.)  
Wilczek] Using Eberhart and Russell and AMMI Models**

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### **ABSTRACT**

Twelve genotypes of greengram [*Vigna radiata* (L.) Wilczek] were studied under six environments for nine characters to assess the stability, using Eberhart and Russell (1966) and AMMI methods. Based on pooled ANOVA genotypes showed significant differences for all characters under study except thousand seed weight when tested against both pooled error and pooled deviation. The GXE (linear) was significant for characters viz., plant height, number of pods per plant, seed yield per plant and protein content. While the non-linear component of interaction was predominant for all characters except for days to maturity and plant height. The magnitude of non-linear component of interaction was higher than linear component for most of the traits under study. AMMI model explained 98.43% of the total genotype environment interaction component for number of clusters per plant, 95.48% of total genotype- environment interaction component for number of pods per plant, 93.73% of the total genotype- environment interaction component for 1000 seed weight, 98.65% of total genotype environment interaction component for seed yield per plant and 99.04% of the total genotype- environment interaction component for protein content. Based on both AMMI and Eberhart and Russell (1966) model genotypes LGG 407 and LGG 450 for seed yield per plant; MGG 295 and MGG 351 for number of clusters per plant and number of pods per plant; genotype MGG 341 for 1000 seed weight and genotypes MGG 341 and ML 267 for protein content were identified as stable genotypes.

**Key words** : AMMI, Greengram, Mungbean, Stability

## **Character Association and Interrelationship of Yield and Quality Attributes in Rice (*Oryza sativa* L.)**

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### **ABSTRACT**

Forty eight genotypes of rice were evaluated for fourteen yield and quality attributes to assess character association among themselves. The correlation analysis indicated that grain yield was significantly associated with number of grains per panicle, days to 50 per cent flowering, days to maturity, number of effective tillers per plant, harvest index, panicle length and 1000-grain weight. Path coefficient analysis revealed that days to 50 per cent flowering, number of effective tillers per plant, number of grains per panicle, plant height, harvest index and 1000-grain weight had positive direct effect on grain yield. Hence, selection on these traits could be suggested to bring simultaneous improvement of yield and quality.

**Key words** : Character Association, Path Analysis, Quality, Rice, Yield

## **Genetic Association and Path Analyses for Yield and Yield Components in Greengram under Late Rice Fallows**

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### **ABSTRACT**

Correlation and path coefficient estimates for yield and yield components were analysed using five lines, four testers and their twenty cross combinations under late rice fallow situation. Genotypic and phenotypic correlation studies showed higher magnitude of genotypic correlations than the phenotypic correlation coefficients between the traits, indicating strong inherent association between different traits. Yield per plant was positively and significantly correlated with days to 50 % flowering, days to maturity, plant height, pods per plant, seeds per pod, 100 seed weight, seed protein and shoot dry weight. The path coefficient studies revealed that shoot dry weight had maximum direct positive effect on seed yield followed by pods per plant, seeds per pod, days to maturity and 100 seed weight. The indirect effect of the characters viz., shoot dry weight, pods per plant, seeds per pod and 100 seed weight were positive. Hence, while

applying selection pressure emphasis should be given to shoot dry weight, pods per plant, 100 seed weight and seeds per pod in order to improve the seed yield in greengram under late rice fallow system.

**Key words :** Genetic Associations, Greengram, Late Rice Fallows, Path Analysis

## **Comparison of Different Stability Parameters in Soybean [*Glycine max* (L.) Merrill]**

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### **ABSTRACT**

The Study of different stability parameters involving twelve soybean genotypes in three environments indicated that stability parameters like Wricke's (1962) ecovalence, mean variance due to genotype-environment interaction of Plaisted and Peterson (1959) and variance of ranks over environments gave similar results to that of the deviation from regression ( $S^2_d$ ) of Eberhart and Russell (1966) and Shukla's stability variance whose calculation is cumbersome. All these methods indicated more stable genotypes, JS 93-05, RKS 18 and JS 95-60 for number of pods per plant, MRSB 345, JS 335 and LSb 36 for protein content, LSb 1, LSb 13 and LSb 36 for oil content and JS 93-05, JS 95-60 and RKS 18 for seed yield per plant over environments.

**Key words :** Soybean, Stability

## **Genetic Divergence in Upland Cotton (*Gossypium hirsutum* L.)**

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### **ABSTRACT**

Sixty genotypes of upland cotton (*Gossypium hirsutum* L.) collected from different geographic regions were subjected to Mahalanobis'  $D^2$  statistic, cluster analysis and principal component analysis. On the basis of clustering methods, fourteen and eight clusters were obtained for Mahalanobis'  $D^2$  statistic and cluster analysis, respectively. In PCA, six principal components were identified. The first six principal components with eigen values more than one contributed 78.21 per cent towards the total variability in cotton. The principal component analysis (PCA) enabled loading of similar type of variables on a common principal component

**Key words :** Cotton,  $D^2$  analysis, Cluster Analysis, Principal Component Analysis.

## **Combining Ability Analysis of Yield and Yield Components in Pigeonpea [*Cajanus cajan* (L.) Millsp.]**

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### **ABSTRACT**

An attempt was made to develop early duration high yielding hybrids and to study the genetics of various characters in pigeonpea. Three lines and twenty one early duration testers were selected for the study. The characters viz., days to fifty per cent flowering, days to maturity, plant height, branches per plant and pods per plant were controlled by additive gene action, while the traits viz., clusters per plant, seeds/pod, pod length, 100 seed weight and seed yield per plant were controlled by non-additive gene action. The hybrid combinations viz., ms CO5 x ICPAL 83027, ms CO5 x ICPL 83024, msCO5 X ICPL

87105 and ms CO5 x ICPL 87 were the best performing early duration high yielding hybrids, which can be exploited commercially.

**Key words :** Gene Action, Hybrids, Pigeonpea

## **Character Association and Path Coefficient Analyses in Sesame**

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### **ABSTRACT**

Investigations on extent of character association and path coefficient analysis were conducted in sesamum during *khari*, 2007. Correlation studies showed that, the seed yield per plant had significant positive association with days to 50% flowering, days to maturity, number of primaries, number of secondaries, capsules per plant, seeds per capsule, 1000-seed weight and oil content. Path coefficient analysis revealed that seeds per capsule, capsules per plant, 1000-seed weight and oil content had high positive direct effect on seed yield per plant.

**Key words :** Correlation, Path Coefficient Analysis, Sesame

## **Effect of Integrated Use of Organic Manures, Bio-fertilizers with Inorganic Nitrogenous Fertilizer on Growth and Yield of Medicinal Coleus (*Coleus forskohlii* Briq.)**

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### **ABSTRACT**

A field experiment was conducted on medicinal coleus (*Coleus forskohlii* Briq.) (K-8) at Herbal Garden, Rajendranagar, Hyderabad on a fine loamy, mixed hyperthermic, Typic Haplustept soil during *Khari* 2005-06 to study the effect of organic manures (different doses of castor cake, FYM), bio-fertilizers (*Azospirillum*, *Phosphorous Solubilizing Bacteria*) and inorganic nitrogenous fertilizer (different levels). Conjunctive use of 50% RDN (20 kg N ha<sup>-1</sup>) with organic manures (FYM@2.5 t ha<sup>-1</sup> + Castor Cake @ 0.25 t ha<sup>-1</sup>) and bio-fertilizers (T<sub>12</sub>) has resulted in the highest fresh tuber yield (121.91 t ha<sup>-1</sup>), dry tuber yield (21.59 q ha<sup>-1</sup>) at harvest and dry matter production at different growth stages and at harvest.

**Key words :** Azospirillum, Castor Cake, FYM, Phosphorous Solubilizing Bacteria

## **Biology and Predatory Potential of *Coranus* sp on Diamondback Moth, *Plutella xylostella* (L.)**

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### **ABSTRACT**

Biology and predatory potential of *Coranus* sp on diamondback moth was studied under laboratory conditions. The egg and five nymphal instars duration of *Coranus* sp was 6.64, 5.3, 4.94, 6.43, 6.23 and 9.7 days, respectively. Adult male and female longevity was 57.43 and 96.86 days, respectively. Fecundity was 156.14 eggs. A mean of 5.4, 7.25, 9.35, 11.5, 12.85 and 12.93 larvae were consumed per day by first, second, third, fourth, fifth instar nymph and adult, respectively.

**Key words :** *Coranus* sp, Diamondback Moth and Predatory

## **Screening of Jowar Germplasm Against Stemborer (*Chilo partellus* Swinhoe.) and Aphid (*Rhopalosiphum maidis* Fitch.)**

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### **ABSTRACT**

Eighty sorghum germplasm lines were screened during early *rabi* season, 2004, 2005 and 2006 to evaluate their reaction against stem borer and aphids at Agricultural Research Station, Madhira, Khammam district. Mean per cent deadheart and aphid incidence were computed. Based on their performance over three years, the germplasm viz., EP 19 (10.57%), EP 36 (3.47 %) and EP 28 (10.38 %) were shown tolerance and recorded higher yields 2994, 2605 and 2450 Kg ha<sup>-1</sup> respectively, whereas SEVS 1, SEVS 6, EP 44, SEVS 2, EP 111 and EP 118 were susceptible to both the pests.

**Key words :** Aphid, Germplasm, Sorghum, Stemborer.

## **Bio-efficacy of Imidacloprid 17.8%, a Novel Insecticide Against Rice Planthoppers (BPH & WBPH) and its Natural Enemies**

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### **ABSTRACT**

Imidacloprid 17.8%SL, a novel insecticide formulation at five concentrations viz., 10g.a.i/ha, 15g.a.i/ha, 20g.a.i/ha, 25g.a.i/ha and 30g.a.i/ha in comparison with monocrotophos 36SC were field evaluated against mixed population of planthoppers viz., brown planthopper (*Nilaparvata lugens* Stal.) and white-backed planthopper (*Sogatella furcifera* Horvath) in rice under irrigated conditions. The results indicated that the test product, imidacloprid 17.8%SL at four concentrations viz., @15, 20, 25 and 30g.a.i/ha were more effective and significantly superior in efficacy as compared to the check insecticide, monocrotophos 36SL @ 500g.a.i/ha. It also indicates that imidacloprid 17.8%SL is specific to target pest and eco-friendly to natural enemies viz., spiders and mirid bugs. The present studies conclude that the management of rice planthoppers through imidacloprid 17.8 %SL @ 20g.a.i /ha can be recommended as economical as well as eco-friendly.

**Key words :** Bioefficacy, Mirid Bugs, Rice Planthoppers (BPH/WBPH), Spiders

## **Relevance of Bio-intensive IPM for Upland Crops in Andhra Pradesh**

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### **ABSTRACT**

The bio-intensive IPM demonstrations conducted in Guntur district of Andhra Pradesh on cotton, pigeonpea, chickpea and blackgram during three cropping seasons from 1999 – 2002 revealed that the IPM plots recorded less boll damage/pod damage, received less number of sprays and registered high yields and net returns compared to non-IPM plots. The activity of natural enemies population in cotton IPM fields were higher than non-IPM fields. The input cost on plant protection was substantially reduced in IPM demonstrations. The cost-benefit ratio of cotton (1:2.87), pigeonpea (1:3.01), chickpea (1:2.92) and blackgram (1:5.58) were higher in IPM plots compared to non-IPM plots.

**Key words :** Blackgram, Chickpea, Cotton, IPM, Pigeonpea

# **Pathogenicity of *Nomuraea rileyi* Against Larval Instars of *Spodoptera litura* (Fabricius) Reared on Different Host Crops**

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## **ABSTRACT**

The pathogenicity tests of *Nomuraea rileyi* against II, III and IV instar larvae of *Spodoptera litura* (Fabricius) reared on three different host crops viz., castor, groundnut and tomato were carried out. *N. rileyi* infected larvae died by exhibiting the characteristic symptoms like slightly raised head and anterior portion of body and firmly adhering the posterior portion to the substrate i.e. food material with prolegs. After infection and death with *N. rileyi* the larval body was observed to be covered with white mycelial mat and later entire body became olive green due to sporulation. With respect to individual instars, as the concentration of *N. rileyi* decreased, the larval mortality showed positive correlation. The larval mortality was also in negative association with age of the larvae. Relatively higher mortality were obtained when treated, larvae were fed with castor leaves than groundnut and tomato and cent per cent death was recorded in II instar at higher concentrations.

**Key words :** Host Crops, Larval Mortality, *Nomuraea rileyi*, Pathogenicity, *Spodoptera litura*

# **Chlorophyll Content and Seed Yield of Blackgram Genotypes**

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## **ABSTRACT**

A field experiment was conducted during Rabi 2007-08 to study the chlorophyll content and seed yield of blackgram genotypes which revealed that among the blackgram genotypes, LBG 735 recorded maximum chlorophyll a, chlorophyll b, total chlorophyll, SPAD Chlorophyll Meter Reading (SCMR), seed yield and yield components compared to other genotypes WBG 26 recorded the lowest values for the above parameters.

**Key words :** Blackgram, Chlorophyll Content, SCMR, Seed Yield

# **Effect of Curing and Preservation of Aonla During Storage at Ambient Temperature**

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## **ABSTRACT**

The present investigation was conducted during 2003-04 with the objective of studying the effect of curing and preservation of aonla storage at ambient temperature on TSS, PH, ascorbic acid, total sugars, non-reducing sugars, organoleptic compounds and its economics. Maximum quantity of TSS (72.11%), ascorbic acid ( 96.62 mg/100g) and total sugars( 67.88%) were found in treatment of aonla with salt+turmeric+ centrifuging ( $C_2T_1F_1$ ). Highest amount of non-reducing sugars was observed in treatment of aonla with salt+turmeric +with out centrifuging ( $C_2T_1F_0$ ). A declining trend was observed in the organoleptic rating in all the treatments during storage. Treatment of salt+turmeric+centrifuging ( $C_2T_1F_1$ ) showed maximum score (7.00), while treatment of salt+without turmeric +without centrifuging ( $C_1T_0F_0$ ) (5.84) showed minimum score. The treatment with salt+ turmeric+centrifuging ( $C_1T_1F_1$ ) proved most economical (1: 1.06) as compared to others.

**Key words :** Aonla, Curing, Preservation

## **Effect of Chemicals and Temperatures on Breaking Seed Dormancy in Kakrol (*Momordica dioica* Roxb.)**

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### **ABSTRACT**

The studies on the effect of different chemicals on breaking seed dormancy in kakrol seeds revealed that among the different chemicals and their concentrations, the seeds treated with GA<sub>3</sub> 100 ppm gave early and higher percentage of germination, seedling length, seedling girth, vigour index and percentage of establishment in polythene bags. Between two temperatures, controlled temperature (30°C) recorded the higher percentage of germination (51.55), seedling length (14.87 cm), seedling girth (0.69 cm), vigour index (771.30) and percentage establishment in polythene bags (83.41). The interaction between chemicals x temperatures revealed that GA<sub>3</sub> 100 ppm + controlled temperature (30°C) recorded early germination (11.44 days) and significantly higher percentage of germination (70.64), seedling length (16.50 cm), vigour index (1165.33) and percentage of establishment in polythene bags (93.33).

**Key words :** Chemicals, Kakrol, Seed dormancy

## **Optimization of Process Parameters to Dry Different Hybrids and Varieties of Chillies in Barns**

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### **ABSTRACT**

Experiments were conducted to establish optimum parameters to dry different varieties and hybrids of chillies in unutilized tobacco barns. Drying time required to reduce moisture from about 233.3 to 12.1% (d.b) varied depending upon whether the chilli is hybrid (thick pericarp type, eg. Wonder Hot, Indam-5) or variety (medium to thin pericarp type, eg. LCA-334). The hybrids require about 48 to 50 hours to dry whereas the varieties require about 38 to 40 hours. The temperatures ranging initially at 50°C to a final value of about 55°C were found to be appropriate to dry chillies. The percentage discolored pods were found to be only 0.5 to 2.5% in barn dried produce in comparison to 10 to 15% in open yard sun drying. The open yard sun drying takes 16 to 21 days in comparison to barn drying method. It has been observed that time, temperature and ventilator operation regimes are important to get good quality uniform dried produce. The operation schedules of bottom and top ventilators were optimized for both chilli hybrids and varieties.

**Key words :** Barns, Chillies, Drying, Process Parameters.

## **Hypsometric Analysis of Selected Subwatersheds of Ag2 Watershed in Krishna River Subcatchment**

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### **ABSTRACT**

Hypsometric analysis aims at developing a relationship between horizontal cross section area of the subwatershed and its elevation in a dimensionless form. In the present study hypsometric curve is obtained by plotting the relative area ( $a/A$ ) along the abscissa and relative height ( $h/H$ ) along the ordinate. The hypsometric integral is obtained from the hypsometric curve and is equivalent to the ratio of area under the curve to the area of the entire square formed by covering it. It is expressed in percentage units and is obtained from the percentage hypsometric curve by measuring the area under the curve. The hypsometric integral of 11 subwatersheds i.e., Ag2k, Ag2m, Ag2n, Ag2p, Ag2q, Ag2s, Ag2t and Ag2w were found to be 0.413, 0.50, 0.532, 0.485, 0.461, 0.531, 0.55 and 0.469. The eight subwatersheds have hypsometric integral value in the range of 0.413 to 0.582 and accordingly have geological stage of development of equilibrium (mature stage). These 8 subwatersheds were susceptible to less erosion. The hypsometric integral of Ag2r, Ag2u

and Ag2v were found to be 0.628, 0.918 and 0.772. The 3 subwatersheds have hypsometric integral value in the range of 0.628 to 0.918 and accordingly have geological stage of development of inequilibrium (young stage). These three subwatersheds were susceptible to severe erosion.

**Key words** : Geologic Stage, Hypsometric Analysis, Subwatershed.

## **Water Use Efficiency of Paddy Crop under Narsapur Canal Irrigation System**

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### **ABSTRACT**

The study on the water use efficiency at farm level in Narasapur canal irrigation system in West Godavari district of Andhra Pradesh. The study revealed that the irrigation intensity and cropping intensity were more in the large sized farms. The Cobb-Douglas production function was used to analyse the water use efficiency. The analysis revealed that there exists scope for correction in usage of canal water for paddy crop for better productivity.

**Key words** : Irrigation, Paddy, Rice, Water Use

## **Direct and Indirect Relationship of Farmers' Personal, Psychological and Communication Characteristics and Their Perceived Communication Effectiveness of Extensionists**

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### **ABSTRACT**

About forty two per cent of the farmers perceived that the communication effectiveness of extensionists was medium. Majority of the farmers were middle aged, functionally literate, small farmers, with high farming experience, untrained. Somewhat satisfied with extension services, had high innovativeness, high scientific orientation, high economic motivation, medium communicative initiative, high communicative responsiveness and low interaction with extensionists. Path analysis revealed that farmer-extensionists interaction and farming experience had the highest direct effect while communicative responsiveness and innovativeness had the highest total indirect effect on farmers perceived communication effectiveness.

**Key words** : Farmers, Extensionists

## **Efficacy of Gramasiri Programme with Regard to Nutritional Status of Pre-school Children**

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### **ABSTRACT**

A Study to know the effect of Gramasiri programme on nutritional status of pre-school children (0-3 years) in Guntur district was carried out in 8 villages (4 Gramasiri and 4 Non-gramasiri villages) selected randomly, belonging to Bapatla Mandal. The results of the study revealed that, the mean heights and weights of Gramasiri children were higher than Non-gramasiri children. The mean weight/age and height/age (as percentage of standard) measurements of Gramasiri children were significantly greater than Non-gramasiri children. But the mean weight/height percentage of standard of Non-gramasiri children were found to be higher than Gramasiri children.



**Key words** : Children, Gramasiri, Nutrition

## **Profile Characteristics of the Farmers in the Adopted and Non-adopted Villages of Krishi Vigyan Kendra, Amadalavalasa in Srikakulam**

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### **ABSTRACT**

A study was conducted to assess the difference between the profile characteristics of the farmers in the adopted and non-adopted villages of KVK. Results revealed that there was a significant difference between the farmers of adopted and non-adopted villages regarding mass media exposure, extension contact, risk orientation, economic orientation, achievement motivation and innovativeness except the education and landholding.

**Key words** : Adopted Village, Farmers, Krishi Vigyan Kendra, Non-adopted Village, Profile Characteristics

## **Research Note**

### **Effect of Salt Stress on Germination and Seedling Growth of Rice Cultivars**

M Sudharani and V Jayalakshmi

### **Variability and Character Association in Chilli (*Capsicum annuum* L.)**

P Kiran Kumar, V Chenga Reddy, M Lal Ahamed, V Srinivasa Rao, K V Siva Reddy and C Panduranga Rao

### **Characterization of Salt Affected Soils in Visakhapatnam District of North-Coastal Andhra Pradesh**

P Jamuna

### **Evaluation of Chickpea (*Cicer arietinum* L.) Genotypes Against Blight Caused by *Colletotrichum dematium***

Ch Varaprasada Rao and Y D Narayana

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