

## **Zinc Management Strategy To Increase Growth and Seed Yield of Kabuli Chickpea (*Cicer kabulium* L.)**

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### **ABSTRACT**

A field experiment was conducted during *rabi* 2007-08 on clay loam soil to study the effect of soil and foliar application of zinc sulphate on growth and seed yield of *kabuli* chickpea. The results revealed that all the growth parameters, yield attributes, seed and haulm yields of *kabuli* chickpea were significantly increased with increasing levels of soil application and foliar application of zinc. The highest seed yield was recorded with the application of 25 kg ZnSO<sub>4</sub> ha<sup>-1</sup> in combination with 0.5% ZnSO<sub>4</sub> spray twice. Higher dose of zinc (37.5 kg ZnSO<sub>4</sub> ha<sup>-1</sup>) showed a declining trend in seed yield and other characters studied.

**Key words :** Growth, Kabuli chickpea, Seed yield, Zinc.

## **Genetic Divergence in Introgressed Lines of Cotton**

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### **ABSTRACT**

In order to assess the divergence among sixty two introgressed lines developed through wild species of *Gossypium* at different Cotton Research Centres across the country and four local checks in American Cotton, Mahalanobis D<sup>2</sup> statistic was applied. The study revealed the existence of considerable amount of diversity. These genotypes were grouped into six clusters. Clusters I, V, III and II had 40, 11, 7 and 4 genotypes respectively. Cluster VI had three genotypes while cluster IV had one genotype only. The genotypes falling in cluster V had the maximum divergence followed by cluster VI and cluster II. Maximum inter cluster distance was observed between cluster II and cluster VI and genotypes included in these clusters had maximum divergence. The cluster VI exhibited high mean values for most of the traits. The character bundle strength contributed maximum (42.05%) to the divergence followed by 2.5% span length (17.90%) and seed cotton yield per plant (9.09%).

**Key words :** Cotton, Divergence, Introgressed lines.

## **Phenotypic Stability Analysis in Foxtail Millet for Quality Characters**

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### **ABSTRACT**

Twenty Italian millet genotypes were evaluated for three quality characters over 16 environments (8 sowing dates with 2 fertility levels). The analysis of variance of Eberhart and Russell indicated that  $G \times E$  interaction was significant for all 3 characters under study and that genotypes differed significantly. Among the AMMI component first four IPCA axis were explained most of the portion of  $G \times E$  interaction than other IPCA axis for the three characters under study. The ANOVA indicated non-significant  $G \times E$  interaction for carotene content and ANOVA of (Eberhart and Russell, 1966) indicated non-significant  $G \times E$  (linear) interaction for calcium content, when tested against pooled deviation. As per AMMI analysis the IPCA<sub>1</sub> significantly contributed to protein content, calcium content and carotene content while IPCA<sub>2</sub> contributed significantly to  $G \times E$  interaction for protein content, calcium content and carotene content. This brings out clearly the advantage of AMMI ANOVA in bringing out  $G \times E$  interaction through IPCA<sub>1</sub>, which gets combined with error in the other two ANOVA and points out the utility of AMMI models in studying the significant  $G \times E$  interaction and identifying stable genotypes for characters which so undetected in the earlier analysis. According to AMMI analyses the genotypes like GS 444 and GS 480 (for protein content); most of the genotypes (for calcium content); GS 445, GS 450 and PRD (for carotene content) are more stable because they are having IPCA score near zero that is they show less interaction with environments. According to Eberhart and Russell the genotypes like GS 488 and KDR (for protein content); GS 489, GS 463 and GS 479 (for calcium content) and GS 462 and GS 479 (carotene content) showed desirable performance.

**Key words :** AMMI, Foxtail millet, Stability.

## **Genetic Divergence and Variability Studies for Yield and Yield Component Traits in Safflower**

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### **ABSTRACT**

An experiment was conducted with 60 genotypes of safflower to assess variability, heritability, genetic advance, direct and indirect effects of different characters on seed yield and genetic diversity. Wide variability was observed for seed yield and other yield attributes. High phenotypic and genotypic coefficients of variation were found for number of seeds per capitulum followed by seed yield. The high heritability with high genetic advance as per cent of mean for seed yield, plant height and test weight revealed that these characters were controlled by additive gene action. The genotypes were grouped into nine clusters and seed yield contributed maximum towards genetic divergence followed by plant height and number of seeds per capitulum. The intra cluster distance ranged from 124.26 (cluster V) to 21.05 (cluster III). The maximum inter cluster distance was observed between clusters VII and IX followed by clusters IV and IX and clusters VII and VIII.

**Key words :** Genetic divergence, Safflower, Variability.

## **Studies on Genetic Variability in Sunflower**

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### **ABSTRACT**

Sunflower genotypes consisting of 11 parents and their derived 30 single cross hybrids along with three checks were evaluated and were differed significantly for all the traits. The range of variation was maximum for number of seeds head<sup>-1</sup> followed by plant height and seed yield per plant. The traits analysed were less influenced by environment except seed yield per plant. Low heritability coupled with high genetic advance as per cent of mean was observed for seed yield per plant due.

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

## **Character Association and Selection Indices in Sesame**

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### **ABSTRACT**

Investigations on extent of character association, path coefficient analysis and selection indices were conducted in sesame during *kharif* 2008 and *rabi* 2008-09. Correlation studies showed that, the seed yield per plant had significant positive association with days to 50% flowering, number of primaries, capsules per plant, seeds per capsule and oil content. Path coefficient analysis revealed that seeds per capsule, capsules per plant and oil content had high positive direct effect on seed yield per plant. Selection indices studies by using discriminant function technique revealed that the function including number of seeds per capsules as one of the components recorded high expected genetic advance and relative efficiency. The index which includes all the ten characters were showed maximum genetic advance and relative efficiency suggesting that simultaneous selection for all these characters would be better over straight selection for seed yield.

**Key words :** Correlation, Genetic Advance, Path Coefficient Analysis, Selection indices, Sesame.

## **Correlation and Path Coefficient Analyses in Rice**

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### **ABSTRACT**

Thirty five genotypes of rice, were studied to understand the association among the growth, yield and grain quality characters in rice in pursuit of developing highly potential rice genotypes with good grain quality. The path coefficient analysis was also carried out to understand direct and indirect effects of the rest of the traits on yield to develop efficient selection indices. The results of phenotypic and genotypic correlation analysis revealed that days to 50% flowering, panicle length (cm), number of filled grains panicle<sup>-1</sup>, test weight (g), harvest index (%) and kernel breadth (mm) were significantly and positively correlated with grain yield (kg plot<sup>-1</sup>). Path analysis indicated that days to 50% flowering, panicle length (cm), test weight (g) and kernel length (mm) had positive direct effect on yield signifying the importance of these traits in improvement of grain yield (kg plot<sup>-1</sup>).

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

# **Combining Ability Analysis for Seed Cotton Yield and Fibre Quality in Inter-specific Hybrids of Cotton** **(*G. hirsutum* L. x *G. barbadense* L.)**

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## **ABSTRACT**

Combining ability analysis using line x tester design was conducted on 54 hybrids developed by crossing 6 lines and 9 testers. Based on estimates of *gca* effects, ACH 703 E in lines and RHC B 001 among testers were detected as good general combiners. It was found that monopodia per plant, syonpodia per plant, number of bolls per plant, 2.5% span length, fibre elongation and seed cotton yield per plant were predominantly controlled by additive gene action. Among the cross combinations, 0892 B X CCB 5 was found to be better based on their *per se* performance and positive *sca* effects for seed cotton yield per plant. For good fibre quality parameters CNH 120 MB X DB 11 was better.

**Key words :** Cotton, General and Specific Combining Ability, Inter-specific Crosses, Line x Tester Analysis

# **Soil and Land Resources Evaluation for Major Crops of Chanvelly Village for Village Level Planning -A Methodological Approach**

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## **ABSTRACT**

In the present study eight representative pedons were selected based on topography from various physiographic units identified in Chanvelly village of Ranga Reddy district in Andhra Pradesh. The soils were shallow to very deep (30-110+ cm), reddish brown to very dark greyish brown ( 5 YR – 10YR), well to poorly drained, neutral to slightly saline ( 7.2 to 8.40), low to high in organic carbon (0.31 to 0.81 %), low to medium in CEC (12 – 45.1 c mol (p+) per kg, moderately to high base saturated and sandy loam to clayey with variation in relation to physiography. The surface soils were low to medium in available nitrogen (128.4 to 298.2 kg ha<sup>-1</sup>), low to medium in available phosphorous (9.1 to 28.6 kg ha<sup>-1</sup>), low to high in available potassium (108 to 291.3 kg ha<sup>-1</sup>), low to medium in available sulphur (5.0 to 15.0 mg per kg) and low to medium in available zinc (0.32 to 0.86 mg per kg). Based on morphological, physical, physico-chemical, chemical and meteorological data, according to revisions of US Soil Taxonomy revealed that pedon 1 of uplands and pedon 3 and 4 of midlands were classified as order Alfisols. Where as, pedon 2 of uplands classified as Entisol. The pedons 5 and 6 of midlands and pedons 7 and 8 of low lands classified in the order Inceptisols. Land capability classification was done based on the inherent soil characteristics, external land features and environmental factors. There are two land capability classes in the study area, *viz.*, III and IV and four sub classes, *viz.*, III<sub>sf</sub> and IV<sub>w</sub>, IV<sub>s</sub> and IV<sub>st</sub>. The physiographic units of study area matched with the suitability for important crops like paddy, chili, cabbage, tomato, cotton and redgram crops. Major soil constraints for crop production are slope, erosion, depth, texture, coarse fragments, drainage, organic carbon, soil reaction and calcium carbonate. Considering these constraints recommendations were suggested in the way to achieve sustainable yields and also to maintain the soil health without deterioration of future generations.

**Key words :** Land use Planning, Soil characterization, Soil classification, Soil taxonomy, Suitability evaluation

**Effect of Integrated Phosphorus Management on Dry matter  
Production, Secondary and Micronutrient uptake of French bean  
(*Phaseolus vulgaris* L.) in Alfisols of Tirupati**

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**ABSTRACT**

A field experiment was conducted in *rabi* season of 2006, to study the effect of integrated use of inorganic fertilizers coupled with organic manures and phosphate solubilizing bacteria on drymatter production, uptake of Ca, Mg, S, Fe, Mn, Zn and Cu in French bean at different growth stages of the crop in alfisols (*Typic Haplustalf*) of Tirupati. The results revealed that applications of 80 per cent of recommended dose of fertilizers along with 20 per cent phosphorous through poultry manure and phosphate solubilizing bacteria @ 25 kg ha<sup>-1</sup> recorded highest uptake of Ca, Mg, S, Fe, Mn, Zn and Cu at different growth stages of crop.

**Key words :** Drymatter, Integrated, Phosphorus, Micronutrient.

**Nutrient Status of Rice (*Oryza sativa* L.) Growing Soils in  
Various Mandals of Nellore district in Andhra Pradesh**

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**ABSTRACT**

A survey was undertaken to study the nutrient status of rice growing soils in various mandals of Nellore district in Andhra Pradesh. The analysis of the soils revealed that the texture of the soils varied from sandy clay loam to clay, neutral to strongly alkaline in reaction, non-saline, low to medium in organic carbon and available nitrogen and medium to high in available P and K. The available Ca, Mg, S, Fe, Mn and Cu were found to be above their respective critical limits in all the soils. However, 8.66 per cent samples were deficient in available Zn. Simple correlation studies revealed that N, P, K, Ca, Mg and S were positively and significantly correlated with organic carbon. Available K and Cu were positively and significantly correlated with soil pH while available P and Ca were negatively and significantly correlated with soil pH. However, available P was negatively and significantly correlated with clay content.

**Key words :** Rice soils, Macronutrients, Micronutrients.

## **Effect of Long Term Application of Manure and Fertilizers on Soil Available Secondary Nutrients in Alfisol of Groundnut**

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### **ABSTRACT**

The status of nutrients- their depletion and build-up in soil and crop productivity after thirty years (1981-2010) of intensive cropping were studied under continuous use of various inorganic fertilizers and organic manure in an Alfisol. Results showed that application of NPK (20:10:25 kg ha<sup>-1</sup>) + gypsum +ZnSO<sub>4</sub> resulted in pod yield of 828 kg ha<sup>-1</sup> of pod while FYM treatment plot produced 774 kg ha<sup>-1</sup> of pod yield. However the fertility of soil appears to be adversely affected due to the imbalanced use of macronutrients. The secondary nutrient calcium was applied through Lime or gypsum. Thus, the balanced use of fertilizers continuously either alone or in combination with organic manure is necessary for sustaining soil fertility and productivity of crops.

**Key words :** Groundnut, Long term fertilization, Secondary nutrients.

## **Delineation of Nutrient Status in Bt Cotton Growing Soils of Kurnool District in Andhra Pradesh**

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### **ABSTRACT**

TA survey was undertaken to delineate the nutrient status in Bt cotton growing soils in Kurnool district of Andhra Pradesh. The analysis of the soils revealed that the texture of the soils varied from sandy clay loam to clay, neutral to strongly alkaline in reaction, non-saline, medium to high in organic carbon, medium in available nitrogen and high in available P and K. The available Ca, Mg, S, Fe, Mn, Zn and Cu were found to be above their respective critical limits in all the soils. However, 53.33 per cent samples were deficient in available B in Alfisols .

**Key words :** Bt cotton soils, Macronutrients, Micronutrients, Soil orders.

## **Toxicity of Certain Novel Insecticides Against Chilli Thrips, *Scirtothrips dorsalis* (Hood) in Andhra Pradesh**

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### **ABSTRACT**

Novel insecticides with different modes of action was evaluated for their efficacy against chilli thrips, *S.dorsalis*. Based on LC<sub>50</sub> values the order of efficacy was spinosad > pymetrozine > diafenthiuron > imidacloprid > fipronil > clothianidin > vertimec > indoxacarb > chlorfenapyr > flubendiamide > emamectin benzoate. Spinosad, pymetrozine, diafenthiuron, imidacloprid and fipronil were highly effective and proved very successful in suppression of resistance.

**Key words :** Novel insecticides, Resistance management, Toxicity.

## **Field Evaluation of Greengram (*Vigna radiata* L.) OVT Entries Against Major Insect Pests in Kharif Season.**

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### **ABSTRACT**

Twelve greengram entries and two released varieties as check were screened for three years, 2004, 2005 & 2006 in *kharif* (June-Sept) season to know their reaction against early crop stage pests like galerucid fleabeetle<sup>-1</sup>, thrips, *S. exigua* (from two leaf stage), mites, *S. litura* (vegetative) and Maruca (reproductive) at Agricultural Research Station, Madhira, Khammam district. Based on their performance over three years, all the entries found to be tolerant to fleabeetle; lesser thrips population was recorded in the entries, MGG 362 (7.8), MGG 359 (8.6) and MGG 365 (8.7). Except the entries, MGG 362 (13.6), MGG 366 (13.0) and MGG 348 (15.5), remaining entries were tolerant to mite. Heavy incidence of Maruca with 9.6-49.1% pod damage was noticed in the year 2004 but not in 2005 and 2006 rainy seasons. The entries, MGG 366 (9.6%) and MGG 364 (10.6%) found to be tolerant and the entries MGG 356 (49.1%), MGG 363(43.9%), MGG 362(42.6%), MGG361 (41.2%) MGG 357(40.5%) were highly susceptible to Maruca pod damage. Though the entry MGG 357 (570 & 659 Kg ha<sup>-1</sup>) susceptible to Maruca, it recorded significantly higher yield with 13.5% avoidable losses and lower yields were recorded in entries MGG 360, MGG 363, MGG 361 and MGG 364 when compared to the check varieties MGG 295 (529 & 614) and MGG 348 (508 & 644 Kg ha<sup>-1</sup>) both in un protected and protected conditions respectively.

**Key words :** Galerucid beetle, Greengram, Maruca, Mites,Thrips.

# **Efficacy of Fipronil 80 WDG Against Yellow stem borer, *Scirpophaga incertulas* (Walker) and Leaf folder, *Cnaphalocrocis medinalis* (Guenne) in Rice**

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## **ABSTRACT**

Field trials were conducted to evaluate the efficacy of fipronil 80 WDG at different doses against yellow stem borer, *Scirpophaga incertulas* (Walker) and leaf folder, *Cnaphalocrocis medinalis* (Guenne) in rice during *kharif* 2004 and 2005 at Warangal, Andhra Pradesh, India. Three doses of fipronil 80 WDG @ 30, 40, 50 g *a.i.* ha<sup>-1</sup>, fipronil 5 SC @ 50 g *a.i.* ha<sup>-1</sup>, monocrotophos 36 SL @ 450 g *a.i.* ha<sup>-1</sup>, chlorpyrifos 20 EC @ 300 g *a.i.* ha<sup>-1</sup> were included as insecticide treatments along with an untreated control. Fipronil 80 WDG @ 40 g *a.i.* ha<sup>-1</sup> was effective against stem borer and leaf folder in rice with 15.36% increase in yield over untreated control. Fipronil 80 WDG @ 30 g *a.i.* ha<sup>-1</sup>, monocrotophos, fipronil 5 SC were equally effective against stem borer while fipronil 80 WDG at all the three doses and fipronil 5 SC were equally effective against leaf folder.

**Key words :** Efficacy, Fipronil, Leaf folder, Rice, Stem borer.

# **Reaction of Bollgard II Genotypes Against Non-target Insects of Cotton Eco-system**

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## **ABSTRACT**

Field experiment was conducted at the Regional Agricultural Research Station, Lam to find the reaction of cotton bollgard genotypes *viz.*, Brahma BG (*Cry1Ac*), Brahma BG-II (*Cry 1Ac + Cry 2Ab*), Atal BG-II, Tulasi BG, Tulasi BG-II, along with Tulasi non-*Bt* and local variety L-788 against non-target insect pests. The lowest incidence of leafhoppers was recorded on Brahma BG (3.78 leafhoppers three leaves<sup>-1</sup>), and the highest incidence was recorded in non-*Bt* genotype L-788 (5.09 leafhoppers three leaves<sup>-1</sup>) with significant differences among the genotypes. The incidence of thrips and whiteflies were low during the season. Lower population of spiders and coccinellids were observed during the season.

**Key words :** Bollgard II genotypes, Cotton, Non-target insect pests



## **Sensitivity of *Trichoderma* Isolates to Selected Insecticides *in vitro***

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### **ABSTRACT**

Laboratory experiment was conducted to assess the Sensitivity of *Trichoderma* isolates to eleven insecticides at concentration recommended for field use by following poisoned food technique and spore germination technique. The test *Trichoderma* isolates were found highly sensitive to organochlorine compound endosulfan and organophosphates namely chlorpyrifos, quinalphos and dimethoate and insensitivity to new generation insecticides like imidacloprid, thiamethoxam, emamectin benzoate and spinosad in assimilative phase, while on spore phase all the eleven insecticides were found toxic showing varied degree of inhibition. Based on radial growth and spore germination inhibition all the eleven insecticides were categorized into dangerous, cautious and safe groups. All the three insecticides belonging to organophosphates namely chlorpyrifos, quinalphos and dimethoate were found place in dangerous category, while endosulfan, thiamethoxam, emamectin benzoate, fipronil and spinosad were found place in cautious group. Only indoxacarb and imidacloprid were found safe to the test *Trichoderma* isolates.

**Key words :** Categorization, Insecticides, Sensitivity, *Trichoderma*.

## **Effect of mid and end season moisture stress on growth, dry matter production and yield in green genotypes**

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### **ABSTRACT**

A field experiment was conducted during Rabi 2010-11 at met land farm of S.V. Agricultural college Tirupithi to study the effect of mid and end season moisture stress on growth, drymatter production and yield in green grain genotype. Results revealed that significant differences were observed between moisture stress treatments, genotypes and their interaction with regard to the plant height, days to 50% flower, leaf area, root, leaf, stem, pod, and total dry matter production and yield and yield components. Among the genotypes, WGG-37 and MGG-357 maintained high leaf area, drymatter accurlation, yield and yield component under irrigated and moisture stress conditions. Plant height and days to 50% flowering were more affected due to mid stress compared to end stress (45-60 DAS). Whereas the effect of end stress on leaf area and dry matter production and it portioning, yield and yield component was more accut compared to mid stress (stress imposed at 30-45DAS).

**Key words :** Dry matter, End season stress, Greengrain , Mid season stress, Yield.

## **Probability Analysis of Rainfall at Semi Arid Area of Chandrabanda, Raichur District, Karnataka**

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### **ABSTRACT**

Daily rainfall data were obtained from the rain gauge station of Chandrabanda and were analyzed for fitting one day maximum rainfall, maximum monthly and annual rainfall data, using different distributions like Normal, Log-normal, Gumbel and Log-Pearson III to determine the best fit distribution, which will be very much useful for design of any water harvesting and soil conservation structures. From the rainfall analysis over the study area, the Log-normal (0.16), and Log-Pearson type III (0.17) distributions are identified for the reliable estimation of one day maximum rainfall with minimum D-index. From the result Log-normal (0.21) and Log-Pearson type III (0.26) distributions are identified for the consistent estimation of maximum monthly rainfall with minimum D-index. For annual rainfall estimation all four distributions namely Normal (0.17), Log-Pearson type III (0.20), Gumbel (0.26) and Log-normal (0.27) distributions are recognized with minimum D-index. However, from the study Log-Pearson type III and Log-normal distributions are the fitting distributions for all one day maximum, maximum monthly and annual rainfall analysis for the study area.

**Key words :** D-index; Gumbel; Log-normal; Log-Pearson type III; and Normal.

## **Mapping of Soil Salinity and $p^H$ For Pathareddy Palem Pilot Area of Krishna Western Delta**

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### **ABSTRACT**

Soil salinization is a major form of land degradation in agricultural areas, where information on the extent and magnitude of soil salinity is needed for better planning and implementation of effective soil reclamation programs. Areas affected by salinization in Pathareddy Palem pilot area under Mutlur command area in Krishna Western Delta were studied using data obtained from Soil Science Division, APWAM, Bapatla. The main objectives of the study are to identify the areas affected with salinity in Pathareddy Palem in Mutlur command area, Krishna Western Delta and to draw soil salinity ( $1.6-61.3 \text{ dS m}^{-1}$ ,  $0.94-43.2 \text{ dS m}^{-1}$ ) and  $p^H$  ( $6.7-8.4$ ,  $6.7-8.3$ ) maps using Surfer 7.0 software for the years 2005 and 2006 respectively.

**Key words :** Electrical conductivity, Salinity,  $p^H$ , Surfer.

## **Design of RBC Flume for Water Measurement in Field Channels of Low Discharges**

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### **ABSTRACT**

Water is the most valuable asset of irrigated agriculture. Accurate measurement of irrigation water permits more intelligent use of this valuable natural resource. A new style of portable flow measuring flume (RBC) is designed for furrows and unlined canals. These flumes are relatively easy to install and operate. They are long throated flumes and broad crested weirs requiring very little head loss for satisfactory operation. This article presents the design procedure of a RBC flume using advanced software model namely Winflume based on trial and error procedure till the design requirement is attained. Once the design is made, the fabrication could be done with the help of local workshops using low cost materials either by GI sheets or fiber plates. For the study, the design was made for a discharge range of 3-8 lps.

**Key words :** Field channels, RBC flume, Water measurement

## **Modification and Performance Evaluation of ANGRAU Power Weeder Developed by FIM Scheme for Paddy under SRI Cultivation**

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### **ABSTRACT**

Weed control is a major problem in System of Rice Intensification (SRI) cultivation. The field capacity of the present available weeders is less, which involves drudgery while operating and more time in field because of to and fro motion of the weeders. ANGRAU FIM developed a power weeder, which has higher field capacity and field efficiency. However, the ANGRAU FIM developed power weeder has less working width and does not have depth control provision. To solve this problem and to increase the weeding efficiency of the ANGRAU FIM power weeder it was modified at College of Agricultural Engineering Bapatla. The field performance was evaluated and compared with the performance of a cono weeder. The field capacity of the modified power weeder was found to be 0.0349 ha h<sup>-1</sup> with a field efficiency of 79.74% at an average working depth of 4.8 cm. The field capacity of the cono weeder was found to be 0.0145 ha h<sup>-1</sup> with a field efficiency of 73.03% at an average working depth of 3.1cm. Weeding efficiency was 84.58% and 68.97% respectively for power weeder and cono weeder. The plant damage by power weeder and cono weeder was 3.61% and 2.03% respectul. The cost of operation of the power weeder is 42.5% more than the cost of operation of the cono weeder.

**Key words :** Cono weeder, Power Weeder, SRI cultivation

# **Development of Linear Programming Model For Crop Water Planning To Maximize Benefit During Deficit Years in Appapuram Channel Command of Krishna Western Delta – A Case Study**

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## **ABSTRACT**

The computer simulation model CROPWAT was applied to estimate crop water requirement in Appapuram Channel Command under Krishna Western Delta in Andhra Pradesh for the years 2000 to 2010. In the model, the Penman – Monteith method for evapotranspiration calculation was used. It was estimated that the gross water requirement for Appapuram Channel Command area to irrigate 8880 ha registered and 4000 ha unregistered ayacut during kharif season and maize 4000 ha during rabi to be 82.68 M.cum. The canal operation plan was prepared for estimated gross water requirement for different scenario. Linear Programme was developed to maximize benefit during deficit years.

**Key words :** Actual evapotranspiration, Available soil water index, Crop coefficients, CROPWAT, Potential evapotranspiration, Relative yield ratio.

# **Performance Evaluation of Subsurface Drainage System at Appikalta Drainage Pilot Area in Krishna Western Delta Using ‘Drainmod’**

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522 101

## **ABSTRACT**

Irrigation induced problems of water logging and salinity are noticed in many canal commands in India. Pilot studies conducted in some of these command areas demonstrated the potential of subsurface drainage for the control of salinity and water logging and the improvement of agricultural productivity.. In this study, DRAINMOD model was used to evaluate the performance of subsurface drainage system near Appikatla in Krishna Western Delta. Data collected from a subsurface drained experimental field located geographically at about 15° 28' N latitude and 80° 28' E longitude near Appikatla village in the Krishna Western Delta in Andhra Pradesh. The subsurface drainage system consists of two sub-fields with drains installed at two different spacing's of 30 and 60 m. The model was calibrated by using observed data from the pilot area (7.5 ha) considering an equivalent drain spacing of 50 m during the period from 2004 to 2006 and validated using the observed data from 2007 to 2009. The model predicted variables like drain flow, soil salinity and relative yields of paddy crop were in good agreement with observed data as indicated by good statistical model performance measures (Nash-Sutcliffe model efficiency) EF of 0.57, 0.72 and 0.30 and Coefficient of correlation(R) of 0.88, 0.90 and 1.00 during calibration period and EF of 0.90, 0.64 and -0.42 and R of 0.99, 1.00 and 0.99 during the validation period.

**Key words :** Calibration, Drain flow, Drainmod, Relative yields, Soil salinity, Validation

## **Prospects of Increasing Income Through Optimum Production Pattern: A Linear Programming Approach**

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### **ABSTRACT**

The present study "Optimum production pattern for farmers in Obulavaripalli mandal 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 :** Linear Programming Model, Optimum Plans, Rational Resource Allocation.

## **Impact of Front Line Demonstrations and Trainings on Knowledge Levels of Brinjal Growers With Respect to IPM Practices**

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### **ABSTRACT**

The study was conducted in two adopted villages of Krishi Vigyan Kendra, Undi in West Godavari district to assess the knowledge levels of brinjal growers before and after implementation of Front Line Demonstrations (FLDs) and trainings and to measure the knowledge gain of brinjal growers with respect to Integrated Pest Management (IPM) practices of brinjal crop. More than half of the brinjal growers after implementation of FLDs and trainings had medium level of knowledge of recommended IPM practices of brinjal followed by high (34.00%) and low (6.00%) level of Knowledge. There was a significant difference between 'before' and 'after' implementation of FLDs and trainings on knowledge level of recommended IPM practices. It was also observed that majority of the brinjal growers had medium level (54.00%) of knowledge gain about IPM practices.

**Key words :** Brinjal, Front Line demonstrations, Impact, IPM, Knowledge, Trainings,

# **Information and Communication Technology (ICT) Utilisation Pattern by the Post-Graduate Students of Acharya N. G. Ranga Agricultural University**

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## **ABSTRACT**

An exploratory study was conducted with computer and internet applications of ICT. A total of 120 Post-graduate students were sampled for the study. 97.50 per cent of the PG students had their e-mail addresses, 49.17 per cent and 61.67 per cent accessed computer and internet at their hostels respectively, cent percent used google search engine, little more than two third used compact discs (69.17%) to store the data typed in computer or that collected from internet, cent percent of the respondents used Microsoft word for thesis related works, 97.50 per cent used power point slides to present seminars, little less than one fourth of the respondents used Microsoft excel to analyse research data, 94.17 per cent used e-mail to exchange personal information while, world wide web was used to get latest and detailed information on a topic (81.67%). More than half of the respondents expressed satisfaction with the ICT facilities provided by the university.

**Key words :** Computers, ICT, Internet, Post-Graduate, Students.

# **Relationship between Profile Characteristics and Career Preferences of Undergraduate Agricultural Students of S.V.Agricultural College, Tirupati**

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## **ABSTRACT**

The primary aim of Agricultural universities is to prepare Agricultural Graduates for serving farming community. The present research was carried out to study the career preferences of Agricultural Graduates of S.V. Agricultural College, Tirupati. The total sample for the study constituted 60 boys and 60 girl students. It was observed that education of respondents, education of the parents, occupation of parents, rural urban background, parents income, achievement motivation, OGPA, participation in extra curricular activities and mass media exposure showed significant and positive relationship with their career preferences.

**Key words :** Agricultural students, Career preferences, Profile characteristics

**Effect of Sequential Application of Herbicides on Nutrient Uptake by Wet Seeded Rice and its Associated Weeds**

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**Key words :** Nutrient uptake, Sequential application, Wet seeded rice.

**Management of Cotton Leafhopper, *Amrasca biguttula biguttula* with Insecticides**

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**Key words :** Amrasca biguttula biguttula, Cotton leafhopper, Management .

**Effect of Host Age and Inoculum Concentration on Disease Severity of Purple Blotch of Onion Caused by *Alternaria porri***

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**Key words :** Alternaria porri, Host age, Inoculum concentration, Onion

**Profile of Self-employed Rural Women in Visakhapatnam District of Andhra Pradesh**

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**Key words :** Achievement motivation, Aspiration, Profile, Self employment, Self confidence

**A Study on Knowledge and Adoption Levels of Opinion Leaders and Their Followers**

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**Key words :** Adoption Levels, Knowledge, Opinion Leaders.