

# **Effect of Irrigation Schedules and Nitrogen Levels on Growth and Yield of Aerobic Rice**

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## **ABSTRACT**

Aerobic rice is a new production system in which specially developed varieties are grown under unpuddled, non flooded and unsaturated soil condition. A field experiment was conducted at Agricultural Research Station, Utukur, Kadapa during *kharif*, 2009 and 2010 to study the effect of irrigation schedules and nitrogen levels on growth and yield of aerobic rice. Four irrigation schedules and three nitrogen levels were tested in split-plot design with three replications. Results revealed that irrigations scheduled once in three days interval registered significantly higher number of tillers, filled grains per panicle, test weight and grain yield as compared to other irrigation schedules during first year while there was no disparity among them in the second year due to continuous rains. Application of 160 kg N/ha was found superior than the other nitrogen levels with respect to growth, yield attributes and grain yield of aerobic rice in both the years.

**Key words :** Aerobic rice, irrigation, nitrogen levels.

# **On Farm Evaluation Of System Of Rice Intensification**

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## **ABSTRACT**

An on farm trial was conducted in farmers' fields in Guntur district during 2004-05 and 2005-06 to evaluate the performance of System of Rice Intensification (SRI) against farmers' practice to increase the rice productivity. The package of practices as recommended for SRI was adopted and the influence on crop growth, yield parameters and yield was studied. In SRI, total no. of tillers per hill increased by 119 per cent, no. of effective tillers per hill was increased by 56.67 per cent and no. of filled grains in panicle was increased by 13.30 per cent when compared to farmers' practice. The increase in no. of tillers, no. of effective tillers and no. of filled grains per panicle has resulted in the increase of grain and straw yield in SRI. An increase of 23.69 per cent in grain yield was recorded in SRI (68.28 q/ha) when compared to farmers' practice (55.20 q/ha). The straw yield was also increased by 32.03 per cent (79.35 q/ha) in SRI when compared to farmers' practice (60.10 q/ha).

**Key words :** Rice, system of rice intensification, on farm evaluation, grain and straw yield

# Effect of Sequential Application of Herbicides on Growth and Yield of Sunflower (*Helianthus annuus* L.)

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## ABSTRACT

Field experiment was conducted to study the effect of sequential application of pre- (pendimethalin @ 1 kg a.i ha<sup>-1</sup>, oxadiargyl @ 250 g a.i ha<sup>-1</sup>) and post-emergence (fenoxaprop-p-ethyl @ 60 g a.i ha<sup>-1</sup>, propaquizafop @ 60 g a.i ha<sup>-1</sup>, quizalofop-p-ethyl @ 50 g a.i ha<sup>-1</sup>) herbicides in sunflower on sandy loam soils of Southern Agro-Climatic Zone of Andhra Pradesh. The study revealed that pre-emergence application of pendimethalin @ 1 kg a.i ha<sup>-1</sup> + propaquizafop @ 60 g a.i ha<sup>-1</sup> applied at 20 DAS resulted in significantly higher seed yield and lesser density and dry weight of weeds with higher weed control efficiency compared to rest of the weed management practices. The next best treatment was the two hand weedings at 20 and 40 DAS producing higher seed yield and lesser weed density and dry weight. The reduction in seed yield of sunflower due to unchecked weed growth was 50.03 per cent compared to the best weed management practice i.e., pre-emergence application of pendimethalin @ 1 kg a.i ha<sup>-1</sup> + propaquizafop @ 60 g a.i ha<sup>-1</sup> applied at 20 DAS.

**Key words** : Sunflower, Sequential application of herbicides. Growth and Yield.

# Agronomic Efficiency of Phosphate rock Enriched FYM in Soybean (*Glycine max* (L.) Merrill) Production

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## ABSTRACT

Field experiment was carried out at the Agricultural College Farm, Bapatla, Andhra Pradesh during *rabi* 2005-06 to study the efficiency of phosphate rock enriched organic manure in soybean (*Glycine max* (L.)Merrill). The treatments consisted of six phosphate rich organic manure (PROM) treatments of incubated rock phosphate (34/74) of recommended dose (RD) and double the recommended dose (DRD) of P<sub>2</sub>O<sub>5</sub> for soybean with FYM in three ratios (1:2, 1:3 and 1:4), a normal practice of phosphorus application through SSP and a control. These were arranged in RBD and replicated thrice. Application of PROM made of DRD of P<sub>2</sub>O<sub>5</sub> in 1:4 ratio recorded the maximum plant height and produced significantly higher drymatter compared to that of PROM made of RD of P<sub>2</sub>O<sub>5</sub>. The maximum number of nodules per plant was observed with RD of P<sub>2</sub>O<sub>5</sub> through SSP closely followed by the treatments of PROM with higher proportions of FYM. Nodule dry weight was maximum with the application of PROM made of DRD of P<sub>2</sub>O<sub>5</sub> in 1:4 ratio. The number of days taken to maturity was significantly reduced by phosphorus application through PROM and SSP over no phosphorus application. Yield parameters like number of pods per plant, number of seeds per pod and grain yield were significantly higher with PROM made either with RD or DRD of P<sub>2</sub>O<sub>5</sub> in 1:4 over those of lower proportions of phosphate rock and FYM. Overall the results of the study indicated that PROM made of RD of P<sub>2</sub>O<sub>5</sub> for soybean with FYM in 1:4 proportion is as effective as application of RD of P<sub>2</sub>O<sub>5</sub> through SSP.

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

## **Restriction Selection Indices in Indian genotypes of Italian millet [*Setaria italica* (L.) Beauv]**

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### **ABSTRACT**

The restricted selection indices indicated that by restricting the quality parameters in Indian genotypes the genetic enhancement of grain yield per plant can be improved both in *kharif* and *rabi* seasons. So while aiming for genetic enhancement of yield, we have to seek a balance between yield and quality parameters as they constitute staple food of poor people.

**Key words** : Italian millet, Restriction Selection Indices

## **Variability for Cane Yield, Sugar Yield and Yield Components at Three stages of selection in Sugarcane (*Saccharum officinarum* L.)**

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### **ABSTRACT**

Moderate estimates of genotypic and phenotypic coefficients of variation coupled with high heritability and genetic advance over mean (GAM) were recorded for number of millable canes, single cane weight, cane yield and cane volume indicating the operation of additive gene action while low estimates of GCV and PCV coupled with high heritability and low GAM were observed for cane length, cane diameter and HR brix indicating the operation of non-additive gene action in seedling nursery. Moderate values of GCV and PCV coupled with high heritability and GAM for shoot population at 90 DAP, cane volume, number of millable canes per plot and CCS yield in clonal stages revealed the importance of additive gene action in inheritance of these characters. Low to moderate estimates of GCV and PCV along with low to moderate estimates of heritability and GAM for number of green leaves at 60 and 120 DAP, leaf area index at 60 and 120 DAP, brix, sucrose, purity per cent and cane diameter suggested the operation of non-additive gene action in governance of characters. Low to moderate estimates of GCV and PCV coupled with moderate to high estimates of heritability and GAM for CCS per cent, shoot population at 120, 180, 240 DAP, number of millable canes at 300 DAP, single cane weight, cane length and cane yield suggested the importance of both additive and non additive gene action for these characters. The differential modes of gene action for the characters in seedling and clonal generations could be due to differences in the estimates of GCV, PCV, heritability and GAM due to sample size and environmental variation.

**Key words** : Sugarcane, Seedling, Clonal Stages, Gene action, Genetic Parameters.

# **Genetic Variability in Pigeonpea [*Cajanus cajan* (L.) Millsp.] for Grain Yield and Its Contributing Traits.**

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## **ABSTRACT**

Forty one pigeonpea genotypes were used to study their performance, genetic variability, heritability and Genetic Advance as per cent of Mean of yield and yield contributing characters. Significant variations were observed for all the characters in all genotypes used in the experiment. High PCV coupled with high GCV was observed for number of primary branches per plant, number of secondary branches per plant, number of pods per plant and seed yield per plant. High heritability coupled with high genetic advance as per cent of mean was observed for number of primary branches per plant, number of secondary branches per plant, number of pods per plant, seed yield per plant and grain protein content.

**Key words :** Coefficient of variation, Genetic advance, Genetic advance as percent of mean, Heritability, Pigeonpea, Variability.

# **Stability Analysis For Seed Yield And Yield Components In Sesamum (*Sesamum indicum* L.)**

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## **ABSTRACT**

Stability analysis for seed yield and yield components was studied utilizing regression analysis and AMMI analysis with respect to nine traits over 10 sesamum genotypes during *kharif* 2010 and *rabi* 2010-2011. The variance for genotypes and environments was significant indicating differences among the genotypes over environments. Both linear and non-linear components of GXE interaction was significant suggesting that genotypes interacted significantly with the environments. None of the genotypes was stable for all the characters, however the genotypes YLM 17 and YLM 78 were stable for seed yield per plant. The analysis of variance exhibited that all the three sources *i.e.*, genotype main effect, environmental additive effect, GXE interaction (non-additive effects) and IPCA 1 have significant effects for days to 50% flowering, number of seeds per capsule, 1000 seed weight and seed yield per plant. In AMMI 1 biplot, the genotype YLM 66 for days to 50% flowering, VZM 5 and YLM 66 for number of seeds per capsule, YLM 80 for 1000 seed weight and YLM 66 for seed yield per plant were stable. In AMMI 2 biplot, the genotype YLM 66 for days to 50% flowering and number of seeds per capsule, YLM 17 for 1000 seed weight and seed yield per plant exhibited stable performance over environments.

**Key words :** GXE interaction, seed yield, Stability, Sesamum, AMMI .

# **Studies on Genetic Variability, Heritability and Genetic Advance in Upland Cotton**

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## **ABSTRACT**

Forty genotypes of upland cotton (*Gossypium hirsutum* L.) of diverse origin were studied to observe their genetic variability, heritability and genetic advance in yield, yield contributing and fibre quality characters along with some physiological characters. The analysis of variance revealed that sufficient variability was present in the material studied for all the 21 characters. The phenotypic coefficient of variation (PCV) was slightly higher in magnitude than genotypic coefficient of variation (GCV) for all the characters indicating the influence of environment. Higher heritability coupled with high genetic advance were observed for characters like plant height, number of sympodia plant<sup>-1</sup>, boll weight, lint index, ginning out turn, leaf area index at 120 DAS, crop growth rate at 60-120 days and seed cotton yield plant<sup>-1</sup> indicating the preponderance of additive gene action making selection effective. Seed index, uniformity ratio, micronaire, fibre elongation, specific leaf weight at 120 DAS showed high heritability and moderate genetic advance indicating presence of both additive and non-additive gene actions. The characters 2.5 % span length, relative water content at 60 DAS had shown low heritability and low genetic advance making direct selection ineffective.

**Key words** : GCV, Genetic advance, Heritability, PCV.

# **Characterization of Some Cotton Genotypes Using Ibpgr Descriptors**

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## **ABSTRACT**

Constant evaluation and characterization of the existent, yet uncharacterized germplasm is useful, and it is many times the cornerstone for the development of new and better varieties. One of the problems in germplasm collection is uncharacterization for common germplasm descriptors. A systematic study was conducted to characterize the fifty cotton germplasm lines using IBPGR descriptors at Agricultural College, Bapatla, India. The data was collected on days to 50% flowering, stem, leaf, flower, boll, and quality parameters. Variability was observed for eighteen parameters out of thirty three descriptors studied in the fifty genotypes. The descriptors are helpful in breeding for multiple disease resistant cultivars and improving the fiber quality characteristics.

**Key words** : Characterization, Cotton, Descriptors, IBPGR.

# Soil Fertility Status of Pedapuluguvaripalem Village of Guntur District, Andhra Pradesh

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## ABSTRACT

An investigation was carried out to study the fertility status of soils of Pedapuluguvaripalem village, Guntur district, Andhra Pradesh. The pH of the soils varied from 7.0 - 8.8 in surface and 8.1 to 9.2 in sub surface samples. Electrical conductivity (EC) values of 0.30 to 19.25 dS m<sup>-1</sup> were observed in different locations. The soils were found to be low to medium in organic carbon (OC) (0.08 to 0.66%), low in nitrogen (nutrient index (NI) < 1.67), medium in phosphorus (NI 1.67-2.33) and high in potassium (NI > 2.33). The soils were sufficient in available manganese, iron and copper but were deficient in zinc. (Key words: nutrient status, N, P, K, micronutrients, nutrient index).

**Key words** : Fertility status, Soil.

# Long Term Effect of Nutrient Application on Soil Chemical and Biological Properties and crop Productivity in Sorghum-Wheat Cropping Sequence on Vertisols

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## ABSTRACT

The experiment was undertaken during the year 2007-08 to study the effect of long term fertilization and manuring on soil chemical and biological properties. The dynamics of soil characteristics was studied in the ongoing long term fertilizer experiment initiated since *kharif* 1988 at Akola, Maharashtra. The experiment comprised of twelve treatments including NPK levels with and without FYM, sulphur and zinc replicated four times in randomised block design. The manure and fertilizers were given to sorghum crop every year and only fertilizers were applied to wheat crop. The soil samples from all the treatments were collected from 0-20 cm depth. The chemical and biological soil characteristics were studied. Significantly highest increase in the soil organic carbon and total nitrogen were recorded in the treatment of FYM @ 10 t ha<sup>-1</sup> + 100% NPK. The availability of N, P, K, S, soil microbial biomass carbon, soil microbial biomass nitrogen, dehydrogenase assay and productivity of sorghum and wheat were significantly increased with the integrated application of organic manure (FYM @ 10 t ha<sup>-1</sup>) and chemical fertilizer (100% NPK) over control and other fertilizer treatments in 20 years of experimentation.

**Key words** : Dehydrogenase assay, Long term effect, Soil microbial biomass carbon, Soil microbial biomass nitrogen

# **Physico-Chemical properties and Macronutrient Status of Soils in Kavali Revenue Division in Nellore District, Andhra Pradesh.**

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## **ABSTRACT**

Two hundred soil samples (100 each surface and sub-surface) collected from 18 mandals of Kavali division in Nellore district were analysed for their physico-chemical properties and available N, P and K. The data revealed that the soils were low in low organic carbon content and available nitrogen, medium to high in available phosphorus and high in available potassium. Soil pH varied from strongly acidic to strongly alkaline and non-saline to very strongly saline. The available nitrogen and phosphorus were significantly and positively correlated with the organic carbon and significantly and negatively correlation with soil pH.

**Key words** : Correlation, Macronutrients, pH .

# **Soil-site Suitability Evaluation for Commonly Growing Crops in Vadamalapeta Mandal of Chittoor district, Andhra Pradesh**

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## **ABSTRACT**

The soils of Vadamalapeta Mandal of Chittoor district, Andhra Pradesh were evaluated for their suitability to groundnut, rice and sugarcane crops. The major limitations in Typic Haplustalfs are pH, organic carbon, texture, soil depth and alkalinity. In Typic Ustifluvents pH, organic carbon, texture and alkalinity are the factors causing limitation for crop growth. Organic carbon, pH and texture are the limitations for the crop growth in Vertic Haplustepts and Typic Haplustepts. However, wetness, texture, pH, organic carbon and alkalinity are the major limitations for all the three crops in Typic Ustortents.

**Key words** : Land evaluation, Soil taxonomy, Limitations, Potentials.

# Relationship of Forms of Potassium with Its Uptake by Potato Crop in Alfisols of Andhra Pradesh

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## ABSTRACT

A field experiment was conducted on a sandy loam soil during *rabi* season of 2009-10 with four levels of potassium (0, 60, 120 and 180 kg K<sub>2</sub>O ha<sup>-1</sup>) and four levels of nitrogen (0, 60, 120 and 180 kg N ha<sup>-1</sup>). The soil samples collected at stolonisation, Tuberisation and at harvest stages of potato were analyzed for different forms of K. The simple correlation study indicated that uptake of potassium by potato haulm and roots at stolonisation did not bear relationship with all the potassium forms except water soluble K. However, exchangeable K and 1N HNO<sub>3</sub> K played a significant role in meeting K needs at tuberisation stage and at harvest. The non-exchangeable K content found to be significant at harvest stage. The potassium dynamic equilibrium following potassium fertilization shifted towards non-exchangeable K with the advancement of the crop growth.

**Key words :** Forms of K, K uptake, Potato

# Integrated Nutrient Management with Vermicompost on Yield, Quality and Uptake of Nutrients by Crops in Onion – Radish Cropping System

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## ABSTRACT

A field experiment was conducted on a sandy loam soil during *kharif* (onion) and *rabi* (radish) seasons of 2007-08 with a view to study the effect of integrated use of nitrogen (0, 60, 90 and 120 kg N ha<sup>-1</sup>) and vermicompost (0, 5 and 10 t ha<sup>-1</sup>) on performance of crops in terms of yield, quality and nutrient uptake. Among the different combinations, application of 10 t vermicompost ha<sup>-1</sup> + 120 kg N ha<sup>-1</sup> recorded significantly highest fresh bulb yields and total uptake of N, P, K and S by onion at harvest. The radish crop grown during *rabi* responded favorably to the residual and cumulative treatments. The highest root yield and total nutrient uptakes of N, P, K and S by radish at harvest was recorded in residual and cumulative treatments receiving 10 t vermicompost ha<sup>-1</sup> + 120 kg N ha<sup>-1</sup>. With regard to quality parameters of onion and radish the effect of levels of nitrogen, vermicompost and their interactions showed significant effect.

**Key words :** Nitrogen, Onion, Radish, Vermicompost



# **Effect of Abamectin and Emamectin Benzoate on Larval Period, Feeding and Weight Gain of *Spodoptera litura* (Fab.)**

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## **ABSTRACT**

Abamectin at 20-30 ppm and 800-1000 ppm, and emamectin benzoate at 0.6-1.2 ppm and 25-55 ppm significantly prolonged the larval periods *i.e.* 8.2-11.2 days in both leaf disc ingestion and topical methods of application against third instar larvae of *S. litura*. The mean feeding inhibition by abamectin against third instar larvae of *S. litura* in leaf disc ingestion method was between 6.19 to 50.81% (5 to 30 ppm) as against 2.33 to 40.33% (100 to 1000 ppm) in topical method. Whereas, for emamectin benzoate in leaf disc ingestion method it was between 6.73 to 67.00% (0.2 to 1.2 ppm) as against 5.06 to 48.68% (5 to 55ppm) in topical method. The mean reduction of larval weight for abamectin against third instar larvae of *S. litura* in leaf disc ingestion method was between 20.43 to 53.84% (5 to 30 ppm) as against 17.34 to 45.35% (100 to 1000 ppm) in topical method. Whereas for emamectin benzoate in leaf disc ingestion method it was between 25.98 to 50.95% (0.2 to 1.2 ppm) as against 20.34 to 49.46% (5 to 55 ppm) in topical method.

**Key words :** Abamectin, emamectin benzoate, *Spodoptera litura*

# **Median lethal concentrations and times of *Beauveria bassiana* (Bals.) Vuill. and *Metarhizium anisopliae* (Metsch.) Sorokin against the third instar larvae of *Spodoptera litura* (Fab.)**

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## **ABSTRACT**

The median lethal concentrations ( $LC_{50}$ ) and times ( $LC_{50}$ ) of *Beauveria bassiana* (Bals.) Vuill. and *Metarhizium anisopliae* (Metsch.) Sorokin were determined against the third instar larvae of *Spodoptera litura* (Fab.) by dipping the larvae in fungal spore suspension concentrations varying from 25 to  $125 \times 10^4$  spores/ml and 100 to  $300 \times 10^4$  spores/ml, respectively. The  $LC_{50}$  recorded with *B. bassiana* and *M. anisopliae* against the third instar larvae of *S. litura* were  $20.4 \times 10^4$  and  $9.4 \times 10^4$  spores/ml, and  $265.2 \times 10^4$  and  $98.9 \times 10^4$  spores/ml at nine and eleven days after treatment, respectively. Whereas, the  $LT_{50}$  values were ranged from 180.0 to 302.4 hours in case of *B. bassiana* and 196.8 to 256.8 hours in case of *M. anisopliae*.

**Key words :** *Beauveria bassiana*, *Metarhizium anisopliae*, *Spodoptera litur*

# Effect of Temperature, Light and Relative Humidity on Chilli Fruit Rot Infection

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## ABSTRACT

Chilli fruit rot infection was the highest when the inoculated chilli fruits with *Colletotrichum capsici* were incubated at temperature of 25°C. Temperature beyond and below 25°C caused significant reduction in both lesion size and per cent disease index (PDI). A light cycle of 18 h light followed by 6 h dark period found was optimum for chilli fruit rot development. The inoculated chilli fruits incubated at relative humidity of 95 per cent recorded the highest infection.

**Key words :** Bio-control agents, *Colletotrichum capsici* and Chilli.

# Genetic Diversity and Antagonistic Potential of *Pseudomonas fluorescens* Inhibiting Tobacco Fungal Pathogens

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## ABSTRACT

Ten isolates of *Pseudomonas fluorescens* isolated from fields of banana based cropping system were evaluated for hydrogen cyanide and siderophore production, and phosphate solubilization, antagonistic potential against fungal pathogens infecting tobacco and genetic diversity. Isolates varied in the production of antifungal and plant growth promoting substances and in their ability to inhibit growth of tobacco pathogenic fungi *Phytophthora*, *Rhizoctonia* and *Fusarium*. The isolates producing both high and low HCN showed similar type of inhibition of mycelial growth of pathogens *in vitro* indicating possible involvement of other biocontrol mechanisms. Similarity coefficients based on RAPD banding pattern among 10 isolates ranged between 0.26 and 0.78 with an average of 0.52. The clustering pattern reflected HCN producing and to some extent phosphorous solubilizing traits of the isolates. No correlation between RAPD banding pattern and antagonistic potential of isolates was found.

**Key words :** Antagonistic potential, Genetic diversity, Tobacco pathogens, *Pseudomonas fluorescens*

# **Effect of Environmental Condition, Method and Time of Grafting on Graft Success in Two Varieties of Jackfruit**

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## **ABSTRACT**

An experiment was conducted at Horticultural Research Station, Venkataramannagudem, Andhra Pradesh, India, during 2010 to find out the effect of grafting method, time of grafting and environmental conditions on graft take of two varieties of jackfruit (*Artocarpus heterophyllus* Lam.). The cultivars Singapore and Palur were grafted on jackfruit seedlings by veneer and softwood methods during the period from July 2010 to October 2010 under open and polyhouse conditions. The per cent graft take was high in polyhouse (53.32 %) than under open condition (32.01%), while veneer method of grafting recorded higher graft success (53.08%) over soft wood method (32.26%). Further, per cent graft success in cv. Singapore (47.21%) was high compared to cv. Palur (38.14%) and grafting during October recorded maximum success (51.52%) as against the lowest recorded during September (36.19%).

**Key words :** Environmental condition, Grafting

# **Studies on genotypic variability for water use efficiency and thermo tolerance in greengram genotypes under imposed moisture stress conditions.**

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## **ABSTRACT**

A field experiment was conducted at Wet land farm of S.V.Agricultural College Tirupathi to study the genotypic variability for water use efficiency and thermo tolerance in greengram during *rabi* 2010-2011. The results revealed that among the drought tolerant traits used to evaluate greengram genotypes, water use efficiency traits like specific leaf area (SLA), SPAD chlorophyll meter readings (SCMR) and high temperature tolerance traits like chlorophyll fluorescence (Fv/Fm) were significantly reduced under moisture stress conditions compared to irrigated control. However stress at both phenophases showed more or less similar reduction in values of SLA, SCMR and Fv/Fm values. A significant positive correlation between SCMR and WUE and a negative correlation between SCMR and SLA were observed and were already established as good drought tolerant traits. An inverse relationship was observed between the SLA and seed yield and SCMR and seed yield. Among the genotypes tested, MGG357 recorded moderate WUE traits SCMR, SLA and moderate temperature tolerance in terms of higher PSII activity.

**Key words :** Greengram, SCMR, Specific leaf area, Thermo tolerance, Water use efficiency

# Study on Genotypic Variability for Physiological Traits in Greengram Under Imposed Moisture Stress Conditions

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## ABSTRACT

A field experiment was conducted at Wet land farm of S.V.Agricultural College Tirupathi to study the genotypic variability for physiological traits in greengram genotypes under imposed moisture stress conditions during late *rabi* 2010-11. The results revealed that significant differences were observed between genotypes, moisture stress and their interaction regarding photosynthetic rate, transpiration and stomatal conductance in greengram genotypes. Imposition of moisture stress at flowering stage significantly reduced the photosynthetic rate, transpiration rate and stomatal conductance was reduced by 23.35%, 53.98% and 33.1% when recorded at 45 DAS where as imposition of moisture stress at pod formation and maturity stage it was decreased by 16.05%, 48.55 and 59.4% respectively in greengram genotypes. Among the genotypes tested, MGG357 recorded high photosynthetic rate at both stages of stress. WGG37, MGG360, MGG348, and MGG347 recorded moderate photosynthetic rate where as MGG 357 lowest transpiration in both moisture stress, where MGG348 was recorded highest transpiration rate in mid stress and MGG360 in end stress treatments. Among the genotypes, LGG460 recorded highest stomatal conductance during stress at flowering where as MGG 360 recorded highest stomatal conductance during pod formation and maturity stage.

**Key words :** End season moisture stress, Greengram, Mid season moisture stress, Photosynthetic rate, Transpiration rate.

# Pre-Drying Treatments and Drying of Aonla

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## ABSTRACT

Aonla is one of the most important nontraditional fruits of Indian origin, having immense potentiality for cultivation on waste land. The fruit is highly nutritive and it is one of the richest sources of vitamin C. Aonla fruit is extensively used in preparation of Ayurvedic medicine. Fresh fruits contains 80-82 % (w.b) moisture that needs to be reduced to 10% (w.b) to increase self life. Drying methods significantly affected the ascorbic acid content of dehydrated aonla product. Maximum ascorbic acid content of 858.91 mg/100g (initial) and 95.5mg/100g (after 4 months of storage) was obtained in solar dried untreated aonla product and compared to minimum in sun dried untreated aonla product. Where as in case of blanched samples maximum ascorbic acid content of 286mg/100g (initial) and 185mg/100g (after 4 months of storage) was obtained in sundried blanched product. Where as in case of oven dried blanched samples, ascorbic acid content lies between solar dried and sundried samples i.e. 254mg/100g (initial) and 188mg/100g (after 4 months) was obtained. It is found that indirect solar drying method was found to be comparatively better than direct sun drying in terms of nutritional value of dehydrated aonla product.

**Key words :** Ascorbic acid content, Blanching, Solar drying, Sun drying, Oven drying

# **Evaluation of Drip Irrigation Based on Hydraulic Parameters**

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## **ABSTRACT**

Drip irrigation is a method which minimizes the use of water and fertilizer by allowing water slowly to the roots of the plants either in to the soil surface or directly in to the root zone, through a net work of valves, pipes, tubing and emitters. AS the drip irrigation installed in large scale, in Andhra Pradesh state through APMIP (Andhra Pradesh Micro Irrigation Project) which was launched in Nov' 11<sup>th</sup>, 2003 covers an area of 4.40 lakh ha drip and 2.14 lakh ha sprinkler with total of 6.54 lakh ha up to 2010-11. As the drip systems are having many maintenance functional problems in the farmer's fields and farmers experience maintenance problems under drip irrigation, a study has been taken up to evaluate and assess the performance of these systems in the fields with banana crop of selected mandals in Guntur district. The results enlightens a brief picture about pressure, discharge and horsepower of pump set variations of the drip systems that generally occur due to design parameters.

**Key words :** Drip Irrigation, Discharge, Horse power, APMIP

# **Performance Analysis of District Central Co-operative Banks in Konkan Region of Maharashtra**

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## **ABSTRACT**

A district central co-operative bank (DCCB) is the important institutional agency for credit supply to the farmers in konkan region of Maharashtra. The study is based on secondary data obtained from four DCCBs in Konkan region, who provides the agricultural loans for the period of last 20 years from 1990-91 to 2009-10. DCCB wise and period wise compound growth rates of various performance indicators were estimated and average performance index was computed. Composite performance index was also studied for overall performance of the banks. Satisfactory performance was observed in all indicators except borrowing, loan recovery and overdues. The study revealed that, special attention of borrower's banks is needed to increase in the share capital and loan disbursement for agricultural purposes by the DCCBs. Loan disbursement should be made strictly after assessing repaying capacity of the borrowers and economic soundness of the PACS. There is a need to enhance investment of funds in Government securities and fixed deposits for transparency in financial management of the banks. The average performance index and overall performance indices analysis showed that Thane and Raigad DCCB were the strong financial institutions among the four DCCBs and remaining two DCCB requires improving their performance in future

**Key words :** Cost of management, Loan recovery Loan outstanding, Overdues, Performance indicators

# **Impact of cotton and maize Price Forecasts on Farm Income in Prakasam and Rangareddy districts of Andhra Pradesh**

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## **ABSTRACT**

ANN model was used to forecast the prices of cotton and maize based on the modal prices prevailed in Warangal and Nizamabad markets respectively. The pre-harvesting cotton and maize forecasts helped the sample farmers to take appropriate selling decision, which brought in an additional income of Rs.21,697 and Rs.8,996 per ha respectively.

**Key words :** Artificial Neural Networks (ANN), Auto Regressive Integrated Moving Average (ARIMA), Price Forecasts

# **Farmers' Willingness-To-Pay for weather based crop insurance scheme in Guntur district of Andhra Pradesh.**

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## **ABSTRACT**

This article has explored the farmers' willingness-to-pay (WTP) for weather based crop insurance scheme (WBCIS) for paddy in Guntur district of Andhra Pradesh. Double bounded dichotomous contingent valuation method was employed to elicit the farmers' WTP. Responses of farmers were used to fit the log-likelihood model using 'STATA' statistical data analysis software package. Seven factors were tested for their influence on farmers' average WTP for WBCIS. The results of analysis shown that farmer age is negatively influencing farmers' average WTP for WBCIS. Whereas farm size, farmer education, annual income and awareness about crop insurance scheme is positively influencing the farmers' average WTP for WBCIS. The access to institutional credit and farming experience have insignificant influence on average WTP. The farmers' average WTP for WBCIS for paddy crop in Guntur district of Andhra Pradesh is Rs. 1,421.77 per hectare which is 4.73% of the maximum possible compensation offered of Rs. 30,000/-.

**Key words :** Contingent Valuation, Willingness to pay, WBCIS.

# Quantification of The Benefit of Tomato Growers Due to Intervention of Corporate Retail Industry in Agricultural Marketing: A Case Study in Ranga Reddy District of Andhra Pradesh.

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## **ABSTRACT**

An empirical research was conducted in Ranga Reddy district of Andhra Pradesh to ascertain the impact of corporate retail giants on agricultural marketing and for this purpose tomato growers of Ranga Reddy district were selected and the sample was divided into two subgroups based on the dealing with the retail sector. Cost of cultivation for first group farmers was amounted to an average of Rs. 36710.55 and for small, medium and large farms it was Rs. 40028.66, Rs. 35818.09 and Rs. 34234.98 respectively. Whereas for the second group, the cost of cultivation estimated was Rs. 37734.12 and for small, medium and large farms it was Rs. 43466.55, Rs. 35236.38 and Rs. 34499.53 respectively. From the discriminant function analysis used in the study it was concluded that 'net income' had relatively higher power in discriminating these two groups followed by cost of marketing and price received per each quintal

**Key words :** Discriminant Function Analysis, Multiple Independent Variables, Single Index.

# **Aspirations of out-going B. Sc(Ag) students of Agricultural College, Naira**

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## **ABSTRACT**

A study was conducted to explore the educational, job, economic and social aspirations of out-going B. Sc(Ag) students of Agricultural College, Naira. A total of 57 students comprising 32 girls and 25 boys were studied. A little more than two third of the students aspired to study further(68.42%), while the remaining aspired to go for a job after graduation (31.58%). More than half of the students wanted to pursue post-graduation (56.14%), while 8.77 per cent wanted to continue studies till Ph. D and Agri Business Management course (3.51%). A little less than one fourth aspired to do M. Sc(Ag) in agronomy (22.81%), followed by entomology (15.79%), plant breeding (14.04%). Nearly two-fifth aspired for Junior Research Fellowship (40.35%) from Indian Council for Agricultural Research for pursuing Masters degree. Higher proportion of students aspired to work in State Department of Agriculture; followed by scientist in university, MNC, banks, civil services, practice farming, start self employment and be a job provider. Further many aspired cadre I and cadre II jobs, a monthly income of twenty thousand rupees to thirty thousand rupees. As part of social aspirations students aspired to support their parents, get social recognition, develop farmers, develop own-self, develop community and nation. Educational aspirations showed significant negative correlation with cadre aspirations. Cadre aspirations showed significant positive correlation with economic aspirations and social aspirations.

**Key words :** Aspiration, Educational, Job, Economic and Social

# **Standard Test to Measure Knowledge of Farmers About Production Recommendations of RainFed Groundnut in Chittoor District of Andhra Pradesh**

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## **ABSTRACT**

Fifty items of knowledge on production recommendations of rainfed groundnut were selected from a large number of item pool collected based on standard criteria and in consultation with Subject Matter Specialists, Master Trainers of Acharya N G Ranga Agricultural University and State Department of Agriculture, Andhra Pradesh. Finally 26 items were selected after following the statistical procedures for the construction of standard knowledge test.

**Key words :** Knowledge test, Rainfed groundnut farmers.

# **Extent of Adoption of farmers about improved mango cultivation**

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## **ABSTRACT**

The research study was conducted by personal interview with 80 farmers in Pardi and Ahwa Talukas of Valsad and Dang district of Gujarat state. It has been found that out of selected improved mango cultivation practices the extent of adoption of flowering regulation measures was 50.00 per cent. About 41.56 per cent farmers were adopting fertilizer applications, followed by plant protection measures (21.87 per cent) and selection and grading in mango (15.00 per cent). The practices like mango hybrid and fruit drop control were moderately adopted by the farmers to the extent of 11.56 per cent and 13.75 per cent respectively.

**Key words :** Cultivation, Extent of Adoption

# **Effect of Temperature, Light and pH on Growth of *Bacillus thuringiensis* Ber.**

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**Key words :** *Bacillus thuringiensis* Ber., Effect of temperature, Growth, Light and pH

# **Effect of temperature, relative humidity and light intensity on growth and sporulation of *Colletotrichum dematium* causing blight of chickpea**

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**Key Words:** *Colletotrichum dematium*, Light intensity, Relative humidity



## **Effect of Fungicides on Growth And Spore Germination Of *Alternaria Porri***

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**Key Words:** Fungicides, Spore germination

## **Profile Charectreristics Of Groundnut Farmers In Chittoor District Of Andhra Pradesh**

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**Keywords:** Profile Characteristics, Groundnut Farmers

## **Correlates of Selected Socio-Personal Characters with Understandability & Utility of Readers of Vyavasaya Panchangam**

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**Keywords:** Characters, Socio-personal, Understandability.

## **Successful and Unsuccessful Cases in System of Rice Intensification (SRI)**

**Johnson B and K Vijayaragavan**

**Key words:** SRI, successful cases, unsuccessful cases, essential principle