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**Performance of Dry Sown Rice Under Lowland to Different
Weed Management Practices**

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ABSTRACT

The field experiment was conducted to find out an effective method of weed control in dry sown rice under lowland conditions during *kharif*, 2004. Hand weeding twice at 20 and 30 DAS (T_2) was found to be superior to the rest of treatments, the pre emergence herbicides viz. butachlor @ 1.5 kg a.i ha⁻¹ (PRE), pretilachlor @ 0.75 kg a.i. ha⁻¹ and pyrazosulfuron ethyl @ 20 g a.i. ha⁻¹ supplemented with hand weeding 20 DAS were found superior to their supplementation with hand weeding 40 DAS, herbicide combination of butachlor @ 1.5 kg a.i ha⁻¹ (PRE) + 2,4-D Na salt @ 0.8 kg a.i ha⁻¹ (POST) at 20 DAS and herbicides applied alone in reducing the weed density and dry matter. Among all the treatments pretilachlor @ 0.75 kg a.i ha⁻¹ (PRE) and pyrazosulfuron ethyl @ 20 g a.i ha⁻¹ (PRE) when supplemented with one had weeding at 20 DAS was found superior to their supplementation with hand weeding at 40 DAS in reducing the weed growth and recording higher growth parameters with high yield attributes next to hand weeding twice.

Key words : Dry Sown Rice, Weed Management.

**Study of Open Sub Surface Drainage System in Reclamation of
Salt Affected and Water Logged Soils of Mutluru Channel
Command in Krishna Western Delta of Andhra Pradesh**

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ABSTRACT

A study was conducted in the farmers fields of drainage pilot area located in pathareddy palem village under Mutluru channel command of Krishna Western Delta, Guntur District to evaluate the performance of Open Subsurface Drainage system (OSSD) for improving the grain yield of Rice under saline and water logged conditions for three consecutive seasons starting from Kharif,2005. The grain yield increased from 2.2 t/ha to 4.5t/ha over a period of three years indicating an over all increase of 104% due to installation of OSSD. The cropping intensity and non saline area were also increased to 100-153% and 6-40% respectively.

Key words : Cropping intensity, Soil salinity and Water logging

**Principal Component and Cluster Analyses in Desi chickpea
(*Cicer arietinum* L.)**

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ABSTRACT

Forty genotypes of *Desi* chickpea were evaluated to study genetic divergence by using principal component analysis and cluster analysis. These genotypes were grouped into 7 clusters. Principal component analysis identified five principal components with eigen values more than one which contributed 92.14 per cent of the cumulative variance. The genotypes selected from the above analysis were K-850, ICC

927, ICC -7425, SAKI 9516, DCP 92-3, and L-550 which appear to be desirable for inclusion in crossing programme aimed for improvement of *Desi* chickpea

Key words : Cluster Analysis, *Desi* Chickpea, Genetic Divergence, Principal Component Analysis.

Comparison of Different Stability Parameters in Blackgram [*Vigna mungo* (L.) Hepper]

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ABSTRACT

The study of different stability parameters in blackgram genotypes in six environments indicated that stability parameters like Wricke's (1962) ecovalence, mean variance due to genotypes-environment interaction of Plaisted and Peterson (1959), variance or information of ranks over environments and Shukla's stability variance gave similar results to that of the deviation from regression (S^2_d) of Eberhart and Russell (1966), whose calculation is cumbersome. All these methods indicated more stable genotypes like 1 (AKU-7), 6 (PBG-1), 7 (PBG-107) for plant height; 1 (AKU-7), 3 (T-9), 8 (MBG-162) for number of primary branches per plant; 2 (LBG-752), 5 (LBG-17), 11 (LBG-623) for number of pods per plant; 2 (LBG-752), 5 (LBG-17), 4 (LBG-20) for 1000 seed weight; 2 (LBG-752), 4 (LBG-20), 12 (LBG-645) for seed yield per plant; 5 (LBG-17), 10 (LBG-648), 11 (LBG-623) for yield kg/plot over environments.

Key words : Blackgram, Stability.

Comparison of Different Stability Parameters in Greengram [*Vigna radiata* (L.) Wilczek]

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ABSTRACT

The study of different stability parameters involving twelve mungbean genotypes in six 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 like LGG 407, LGG 450 and MGG 295 for number of clusters per plant; PDM 54, MGG 351 and MGG 295 for number of pods per plant; LGG 407, MGG 347 and LGG 450 for seed yield per plant; LGG 460, ML 267 and MGG 341 for protein content over environments.

Key words : Greengram, Mungbean, Stability .

Combining Ability Analysis of Yield Traits in Greengram Under Late Rice Fallows

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ABSTRACT

A line X tester in greengram under late fallows situation indicated for both gca and sca were equally important for most of the traits under considerations including yield per plant. Among the lines Pusa-9672 and among the testers LGG - 407 were good general combiners for yield per plant in addition to other yield contributing traits . Among the cross combinations LGG - 460x LGG- 407 , MGG-341x LGG-407 , Pusa-9672xWGG-2 , Pusa-9672 X TARM-21 , Pusa-9672xLGG-440 and LocalxLGG-440 showed good specific

combining ability for most of the traits in desired direction, combined with high mean values for seed yield per plant. These cross combinations should be suggested in breeding programmes involving cyclic hybridization to isolates transgressive segregates in the further generations for the development of superior cultivars suitable for late rice fallows situation under Pennar delta of Andhra Pradesh.

Key words : Combining Ability, Greengram, LXT Design Late Rice Follows.

Correlation and Path Analyses over Environments in Soybean **[*Glycine max* (L.) Merrill]**

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ABSTRACT

Twelve soybean genotypes were evaluated in three different environment (3 sowing dates). Correlation and path coefficient analyses revealed that number of pods per plant, biological yield per plant and harvest index were positively correlated with seed yield per plant in all three environments at both levels. Days to maturity showed significant positive association with seed yield per plant in all the three environments at genotypic level only. Path coefficient analysis showed direct positive contribution of number of pods per plant, biological yield per plant and harvest index in all the three environments. These traits deserve special emphasis in selection for improvement of seed yield in soybean.

Key words : Correlation, Path Analysis, Soybean.

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

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ABSTRACT

Genetic diversity in sixty three genotypes of cotton (*Gossypium hirsutum* L.) assessed using Mahalanobis D^2 statistic. The genotypes were grouped into eight clusters. Fiber length, fiber strength, boll weight and uniformity ratio contributed maximum towards genetic divergence. The genotypes of clusters V and II can be utilized in the breeding programme to develop heterotic hybrids. All the five principal components showed eigen values more than 1 and they together explained 93.91% of the variability.

Key words : Cluster analysis, Cotton, Genetic Diversity, Mahalanobis' D^2 statistic, Principal Component analysis.

Characterization of Cotton Germplasm using IBPGR Descriptors

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ABSTRACT

One of the problems in germplasm collection is uncharacterization for common germplasm descriptors. A systematic study was conducted to characterize the sixty cotton germplasm lines using IBPGR descriptors at Agricultural College, Bapatla, India. The data was collected on days to 50 per cent flowering, stem, leaf, flower, boll and quality parameters. Variability was observed for twenty two parameters out of twenty nine descriptors studied. The descriptors are helpful in breeding for multiple disease resistant cultivars and improving the fiber quality characteristics.

Key words : Characterization, Cotton, Descriptors, IBPGR.

Correlation and Path Coefficient Analyses in Cotton (*Gossypium hirsutum* L.)

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ABSTRACT

Correlation and path coefficient analyses were carried out in 60 genotypes of cotton that were collected from all the three cotton growing zones of India for different agronomical and fibre quality traits. The correlation studies revealed that plant height, number of sympodia per plant, number bolls per plant, boll weight, seed index, lint index, micronaire, uniformity ratio, elongation and lint yield per plant had significant positive association with seed cotton yield per plant. The path coefficient analysis revealed that plant height, days to 50% flowering, number of monopodia per plant, number of bolls per plant, seed index, lint index, uniformity ratio and lint yield per plant exerted direct positive effect on seed cotton yield per plant. Selection based on these attributes may be helpful in evolving high yielding varieties of upland cotton.

Key words : Cotton, Correlation and Path Analysis.

Insect Pest Control Potentiality of some Commercially Available Detergents

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ABSTRACT

Pest control potentiality of four commercial detergents namely, Surf Excel, Sunlight, Rin Advanced and Ezee, each at three concentrations (1.0, 0.5 and 0.1%), against citrus psylla (*Diaphorina citri* Kaw.), taro aphid (*Aphis gossypii* Glov.) and black ant (*Camponotus compressus* Fabr.) was studied in the department of Agril. Entomology, Bidhan Chandra Krishi Viswavidyalaya. All the treatments with the detergents except 0.1% concentration of Surf Excel and Rin Advanced provided 84.80 – 98.23% reduction in psyllid population up to 7 days after treatment. Ezee and Surf Excel @ 1.0 and 0.5%, Sunlight @ 1.0 and 0.1% and Rin Advanced @ 1.0% resulted in 79.31 – 97.40% population reduction of the aphid up to the same period. The detergents caused total mortality of the ant within 1 hr of treatment. Surf Excel @ 1.0% and sunlight @ 1.0 and 0.5% caused mild to moderate level of burning on swamp taro leaves after 48 – 72 hr of treatment.

Key words : Detergents, Pest, Potentiality.

Screening of Blackgram Genotypes against Thrips (*Scirtothrips Dorsalis*) and Spotted Pod Borer [*Maruca Vitrata* (Geyer)].

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ABSTRACT

Blackgram entries (16) in Preliminary Varietal Trial were screened for three years, 2004, 2005 & 2006 in rabi season to evaluate their reaction against *Scirtothrips dorsalis* and *Maruca vitrata* (Geyer) at Agricultural Research Station, Madhira, Khammam district. Pooled results of thrips incidence and percent pod damage due to *Maruca* over three years were computed. Based on their performance, the entries, MBG 223 (7.97%) & MBG 222 (10.26%) were found to be resistant and MBG 225 (22.54 %) was susceptible and remaining entries were moderately susceptible to *Maruca* damage. The entries, MBG 221, MBG 223 & MBG 217 recorded higher yields 782, 755 & 705 Kg ha⁻¹ respectively, whereas the entry MBG 229 (467) recorded poor yield compared to the check varieties LBG 623 (614) & LBG 20 (668 Kg ha⁻¹).

Key words : Blackgram, Genotypes, *Maruca*, Screening, Thrips.

Seasonal Incidence of Spotted Pod Borer [*Maruca Vitrata* (Geyer); Pyralidae; Lepidoptera] on Blackgram.

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ABSTRACT

Field experiment was conducted to study the seasonal incidence of spotted pod borer, *Maruca vitrata* (Geyer) (Pyralidae: Lepidoptera) on blackgram at Agricultural College Farm, Bapatla during rabi 2007-08. The larval incidence of *M. vitrata* started during the third week of December (15.12.2007) i.e. at the early flowering stage of the crop (30 days after sowing) and reached the peak level (37 larvae per 50 plants) during the second week of January (12.01.08) coinciding with the maximum flowering stage of the crop. The pest has disappeared by the maturity stage of blackgram. Among the biotic and abiotic factors, minimum temperature was significant and negatively correlated ($r = -0.5551$) with larval incidence of *M. vitrata* while the morning relative humidity was significant and positively correlated ($r = 0.7235$). The biotic and abiotic factors together were able to cause the variation in the larval incidence of *M. vitrata* to the extent of 94.90 per cent ($r^2 = 0.9490$) among which morning relative humidity was able to cause significant ($b = 2.699$) variation in the larval incidence of *M. vitrata*.

Key words : Blackgram, *Maruca vitrata*, Spotted pod borer, Seasonal incidence.

Effect of Foliar Application of Growth Regulators and Nutrients on Growth and Yield in Soybean (*Glycine max* L)

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ABSTRACT

An experiment was conducted in FRBD (Factorial Randomised Block DE sign) to know the effect of growth regulators and nutrients on growth and yield in soybean at Agricultural College farm, Bapatla during rabi 2005-06. The result revealed that maximum plant height (46.74 cm), no. of leaves per plant (14.6), no. of nodes per plant (9.01), no. of branches per plant (9.41), stem dry weight (6.63 g), leaf dry weight (5.37), pod dry weight (19.37g) total dry weight (25.65 g), leaf area per plant (783.73 cm²), net assimilation rate, relative growth rate (90.00 mg g⁻¹ d⁻¹) and seed yield (24.72 q ha⁻¹) has resulted with Triacantanol @ 1mL L⁻¹ followed by SA @ 50 ppm and NAA @ 10 ppm.

Key words : Growth regulators and nutrients, Growth, yield, Soybean.

Effect of Growth Regulators and Nutrients on Physiological and Biochemical Parameters in Blackgram

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ABSTRACT

An experiment was conducted during rabi 2005-06 to know the effect of growth regulators and nutrients i.e. GA₃, NAA, KNO₃, Urea, SA, and Triacantanol on physiological and biochemical parameters of blackgram at Agricultural college Farm, Bapatla. The variety used for this study was LBG-623. Treatment KNO₃ @ 1 % significantly increased the total dry matter production, leaf area, leaf area index, AGR, CGR, RGR and NAR values. Biochemical parameters such as total chlorophyll content, NR activity and protein content were recorded maximum with KNO₃ @ 1 % treatment.

Key words : Blackgram, Growth regulators, Physiological and Biochemical Parameters.

***In Vitro* Evaluation of Fungicides, Botanicals and Biocontrol Agents Against *Colletotrichum Dematium* Causing Blight in Chickpea (*Cicer arietenum* L.)**

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ABSTRACT

Five systemic and five non systemic fungicides, six botanicals and six biocontrol agents were tested on growth inhibition of *Colletotrichum dematium*. Among systemic fungicides SAAF at 0.025% completely inhibited the growth of *Colletotrichum dematium* followed by Carbendazim. Out of five non systemic fungicides Mancozeb at 0.2% completely inhibited fungal growth. Out of six botanicals tested, *Polyalthia longifolia* inhibited 38.55% of mycelial growth of *Colletotrichum dematium* at 10.0% concentration and out of six biocontrol agents *Trichoderma koningii* inhibited growth of *Colletotrichum dematium* upto 53.00%.

Key words : Blight, Botanicals, Chickpea, *Colletotrichum dematium*, Growth inhibition.

Studies on Effect of Mulching on Growth, Yield and quality of Watermelon cv. Sugar Baby

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ABSTRACT

A field experiment was conducted to know the effect of mulches viz., transparent plastic mulch, paddy straw mulch and soil mulch on growth, yield and quality of water melon C V. Sugar baby under South Gujarat conditions during summer season 1997 at Agricultural Experimental Station, Gujarat Agricultural University, Paria. Observations were recorded for days for germination, per cent germination, soil temperature, length of main axis, number of primary branches per plant, node number on which first female flower appeared, number of fruits per vine, fruit weight, total soluble solids and fruit yield per hectare. The results revealed that all the mulching treatments differed significantly for all the characters under study. The transparent plastic mulch showed significantly higher per cent of seed germination (97%) in minimum number of days (5.9), higher length of main axis (229 cm) and more number of primary branches per plant (7.83) and it also maintained high soil temperature. Besides, transparent plastic mulch also increased number of fruits per vine (3.01), fruit weight (2.8kg) and fruit yield per hectare (231 q). The TSS was not influenced by mulching treatment. The results indicated that use of transparent plastic mulch was the best for getting early, uniform and higher per cent of germination in watermelon.

Key words : Growth, Mulching, Paddy Straw Mulch, Soil mulch, Sugar baby and Transparent Plastic Mulch.

Effect of Different Gauges of Polythene Bags with Different Ventilation Levels on the Shelf Life of Kakrol (*Momordica dioica* Roxb.) Fruits

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ABSTRACT

The studies on the effect of different gauges of polythene bags (200 and 300 gauge) with different ventilation levels (0%, 0.5%, 0.75% and 1%) on the shelf life of kakrol fruits revealed that zero per cent ventilation recorded lowest physiological loss in weight irrespective of gauges. While the spoilage

percentage was lower at 0.5 per cent ventilation irrespective of gauges. The TSS, titrable acidity, ascorbic acid content, reducing sugars and organoleptic score were higher at 0.5 per cent ventilation with 200 gauge polythene bags followed by 300 gauge polythene bags. There was gradual increase in physiological loss in weight and spoilage percentage with increase in days of storage. The titrable acidity, ascorbic acid content, reducing sugars and organoleptic score decreased with increase in days of storage. Whereas, TSS increased in the initial days of storage but at later stages decreased TSS.

Key words : Kakrol, Polythene gauges, Shelf life, Ventilation.

Feasibility Study to Convert Existing Unutilized Tobacco Barns for Drying Chillies

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ABSTRACT

Currently there is a need for large scale artificial drying system using hot air to overcome quality issues, cyclone threats and sometimes to dry storm affected chilli crop. Guntur and Prakasam districts in Andhra Pradesh have large number of unutilized tobacco barns due to decline in tobacco cropping area. These areas have been mostly replaced by chilli which has a post harvest problem of drying. Experiments were conducted in Dharanikota village of Amaravathi Mandal in Guntur district of Andhra Pradesh to investigate feasibility of converting existing tobacco barns to dry chillies. It has been found that 11 to 11.5 quintals of ripe chillies can be loaded in the existing tobacco barns to dry chillies depending upon the size of the barn, initial moisture content and type of chilli. Galvanized iron (G.I) wire mesh trays of size 1.05 x 0.75 x 0.075 m were found to be suitable to hold chillies on the existing tiers of the barn. The drying time required to dry chillies was found to be 48 to 50 hours in comparison to 19 days in the open yard method of drying.

Key words : Barn, Chillies, Drying.

Assessment of Coastal Aquifer Properties and Depth-wise Water Quality with use of State-of-art Multi-electrode Imaging Techniques

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ABSTRACT

Even as the inland aquifers are suffering from the maladies of over exploitation of ground water by way of unscrupulous pumping, the coastal aquifers encounter the danger of sea water intrusion and saline water upconing. Fresh water skimming is the only alternative in coastal zones to stabilize crop production. The aquifer properties and depth-wise water quality need to be assessed to harvest the shallow depth fresh water in coastal sands. Using the multi-electrode imaging survey, layer-wise 2D- resistivity images were obtained upto a depth of 12m for 24 locations of Bapatla coastal area. Based on the image data, for all the locations, depth-wise groundwater quality assessed using the laboratory relationship ($Y = 25.624 X^{-0.9448}$, where X is the salinity of groundwater in dS/m and Y is the resistivity of water sample in sands in ohms-m) developed. For agricultural productivity, one can tap the existing shallow depth fresh water or marginal waters only without the upconing of saline waters for which, suitable extraction structures such as improved skimming techniques or pumping strategy are to be planned.

Key words : Multi-electrode imaging, Resistivity, Salinity

Trends in Fertilizer Consumption in Guntur District and Andhra Pradesh

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ABSTRACT

The nitrogen consumption in Andhra Pradesh in 1985-86 was 5,68,900 tones and it was increased to 15,22,090 tones 2005-06 where as in Guntur district ,it increased from 78,120 in 1985-86 to 1,30,675 tones in 2005-06 . In Andhra Pradesh , the Phosphorus consumption increased from 2,42,800 tones in 1985-86 to 6,90,100 tones in 2005-06 and it was increased from 44,055 tones in 1985-86 to 63,165 tones in 2005-06 in the district . The consumption of Potassium in Andhra Pradesh increased from 76,500 tones in 1985-86 to 3,40,360 tones in 2005-06 ,while it increased from 15,166 tones in 1985-86 to 27,988 tones in 2005-06 in the district . The compound growth rates for Nitrogen, Phosphorous , and potassium in Andhra Pradesh were 3.36 percent, 3.90 percent and 6.99 percent respectively and it was found to be 1.356 percent , 1.943 percent and 2.883 percent respectively in Guntur district .

Key words : Consumption

A Study on preferences towards Agri Enterprises of Agri. School Students of Marathwada Region

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ABSTRACT

Agriculture is a traditional occupation of rural people and also fundamental livelihood of Indians. Present study was undertaken at Agricultural School, Nanded. School students were supposed to be the primary concern in agriculture sector for entrepreneurship development. Present study highlights the overall outlook, role and perception of agricultural school students about the agriculture as an enterprise. Seventy five percent students joined school for getting job and 39 percent students for enterprise. It is further reported that 75 percent students will work on their own field activities like helping the supervision, cleaning the field, spraying, harvesting, fodder cutting and bringing etc. So it is desirable to involve school students in different extension activities, transfer of technology programmes as they are grass- root level worker for imparting training and disseminating the innovations in agricultural field.

Key words : Agriculture, Entrepreneurship, Role, Student.

Relationship between Personal, Psychological and Communication Characteristics of Researchers and their Perceived Feed Back effectiveness of Extensionists

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ABSTRACT

Forty per cent of the researchers perceived that the feedback effectiveness of extensionists was medium. Correlation Coefficient analysis revealed that out of 11 variables only six viz., empathy, job commitment, role awareness, communicative initiative,communicative responsiveness and interaction of researchers with extensionists were found to have significant positive relationship with their perceived feedback effectiveness. Multiple regression analysis revealed that all eleven independent variables selected explained 52.00 per cent variation in dependent variable.

Key words : Characteristics of Researchers, Effectiveness of Extensionists.

Development of Sustainability index of Sugarcane cultivation and its measurement

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ABSTRACT

The study was conducted in Visakhapatnam district of Andhra Pradesh where highest acreage under sugarcane cultivation in the state with a sample of 240 farmers. The scale to measure the sustainability was developed with 11 components of Sugarcane cultivation and sustainability was measured separately for rainfed and irrigated farmers. The results indicated that the irrigated farmers able to maintain more sustainability than rainfed farmers.

Key words : Sugarcane Cultivation, Sustainability index.

Research Note

Genetic Variability and Heritability Analysis for Yield and Quality Attributes in Rice (*Oryza sativa* L.)

D Mohana Krishna, D M Reddy, K H P Reddy and P Sudhakar

Yield Component Analysis in Diverse Rice Cultures

P Vidhu Francis , M T Kanakamany and G Gayathri

Character Association and Path Analyses in American cotton (*Gossypium hirsutum* L.)

Ch Mallikarjuna Rao and S Rajamani

Screening of Rice Cultivars in the Coastal Saline Soils of Krishna District of Andhra Pradesh

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