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Effect of Tillage and Other Agronomic Methods of Weed Management on Yield of Rainfed Cotton

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ABSTRACT

Field experiments were conducted during *kharif* seasons of 2002 and 2003 at Regional Agricultural Research Station, Lam to assess the impact of tillage and other agronomic practices in rainfed cotton. Intercultivation / intercropping practices significantly influenced the density and dry weight of weeds and seed cotton yield. Among the treatments, bidirectional intercultivation done three times at 15 days interval significantly reduced weed growth and increased the seed cotton yield. Further, weed growth and seed cotton yields were not significantly influenced by tillage methods in both the years.

Key words: Tillage, Weed Management

Genetic Divergence in Rice Based on Grain Quality Traits

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ABSTRACT

In the present study an attempt has been made to find out the degree and nature of genetic divergence among a set of fifty rice genotypes based on six-grain quality traits during Kharif 2003. Based on the multivariable analysis, the fifty genotypes were grouped into seven clusters. The magnitude of D^2 values indicated the presence of considerable diversity in the material studied. G T score, amylose content and L/B ratio considerably contributed to genetic divergence. Based on genetic divergence, it is suggested to choose parents from divergent clusters i.e., from cluster III (Co 41, Jaya, MTU 1061, MTU 9993, Mahsuri) and cluster VII (Taroari Basmati) to get more heterotic combinations.

Key words: Genetic Divergence, G T score, Grain quality

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

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ABSTRACT

In a study of 38 diverse soybean genotypes, wider genetic variability with high heritability and high genetic advance was observed for plant height, pods per plant and seed yield per plant indicating additive gene action in controlling the expression of these characters. Correlation studies indicated that seed yield was positively correlated with pods per plant, harvest index and biological yield per plant. Path analysis revealed selection for the characters viz., pods per plant, biological yield per plants and harvest index will have positive direct influence on seed yield per plant.

Key words: Soybean, Correlation, Path Analysis

Correlation and Path Analyses for Seed Yield and Yield Contributing Characters in Pigeonpea [*Cajanus cajan* (L.) Millsp]

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ABSTRACT

In thirty genotypes of pigeonpea grown during *kharif* 2005-2006 correlation studies indicated the number of pods per plant, number of secondary branches per plant, harvest index and drymatter per plant have significant positive association with seed yield per plant. Path analysis studies revealed that the harvest index had a high positive direct effect on seed yield per plant. In addition, characters like drymatter per plant, seeds per pod, primary branches exerted positive direct effect. Hence, emphasis should be given on these characters while breeding for seed yield in pigeonpea.

Key words: Pigeonpea, Correlation and Path analysis

Correlation and Path Analyses for Seed Yield and Yield Contributing Characters in Greengram [*Vigna radiata* (L.)Wilczek]

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ABSTRACT

Genetic association among 40 genotypes of greengram was carried out for 11 characters,. Estimate of correlation revealed the preponderance of genotypic values over the phenotypic ones. The correlation study revealed that the high positive correlation values obtained for plant height, number of clusters per plant and protent content and significant inter-correlations existing among themselves revealed that these characters may be considered for improvement of yield. path analysis revealed number of culusters per plant recorded the highest direct effect on seed yield followed by protein content and days to maturity, while number of seeds per pod showed negative direct effect on seed yield.

Key words: Greengram, Correlation, Path Analysis

Restriction Selection Indices in VMEC Group of Genotypes of Finger Millet [*Eleusine coracana*(L.) Gaertn.]

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ABSTRACT

Thirty diverse genotypes of finger millet obtained from local Agricultural Research Station (ARS), Vizianagaram (VMEC) were grown in two consecutive seasons ie. *Kharif* 2005 and *rabi* 2005-06. The restricted selection indices using single case restriction of each character at a time was studied. During both the seasons, single restriction cases of days to 50% flowering, fingers per ear, yield per plant, 1000 seed weight and protein % gave highest genetic advance values.

Key words: Restricted Selection Indices, Finger Millet

Genetic Divergence in Blackgram [*Vigna mungo* (L.) Hepper] Using D² Statistic and Principal Component Analysis

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ABSTRACT

Genetic divergence in 40 genotypes of blackgram [*Vigna mungo* (L.) Hepper] belonging to different eco-geographical regions was studied using Mahalanobis' D² statistic, cluster analysis and principal component analysis (PCA). On the basis of these clustering methods 8 and 7 clusters were obtained for Mahalanobis' D² statistic and cluster analyses respectively. Divergence studies indicated that geographical diversity is always not necessarily associated with the genetic diversity. Hence, selection of parents for hybridization should be based more on genetic diversity rather than geographic diversity. Clusters per plant contributed maximum towards divergence in D² analysis. Principal component analysis identified three principal components with eigen values more than one which contributed 77.14 per cent of cumulative variance. The genotypes selected from the above analyses were LBG-709, IPU-891, OBG-11, IPU-4, MBG-207, MBG-229 and CKM, which appear to be desirable for inclusion in crossing programme aimed for improvement of yield in blackgram.

Key words: Blackgram, Genetic Diversity, D² statistic, Cluster Analysis, Principal component Analysis

Character Association and Path Analyses in Frenchbean (*Phaseolus vulgaris* L.)

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ABSTRACT

A study was undertaken with 33 Frenchbean genotypes to study character association and path analyses for 14 quantitative characters. Number of pods per plant, number of seeds per pod, 100-seed weight, pod yield per plant and harvest index were found to have positive association with seed yield. Days to maturity had highest positive direct effect on seed yield followed by number of pods per plant, pod girth, 100 seed weight, leaf area, harvest index and protein content.

Key words: Frenchbean, Character Association, Path Analysis

Correlation and Path Analyses for Yield and Yield Component Traits in Cotton (*Gossypium hirsutum* L.)

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ABSTRACT

Correlation studies made with parents, F₁'s of 8x8 diallel crosses (method-1, model-1) in upland Cotton (*Gossypium hirsutum* L.) revealed that seed cotton yield has positive significant correlation with number of sympodia per plant, number of bolls per plant and lint yield per plant both at genotypic and phenotypic levels. Plant height, boll weight and ginning outturn showed positive association with seed cotton

yield per plant at genotypic level only. Path coefficient analysis revealed that plant height, number of bolls per plant, 100 seed cotton weight, seed index and lint yield per plant exhibited positive direct contribution towards seed cotton yield per plant. While bundle strength, lint index, uniformity ratio, fiber quality index and count strength product exhibited negative direct effects.

Key words: Cotton, Correlation Analysis, Path Coefficient Analysis

Correlation and Path Analyses in Chilli (*Capsicum annuum* L.)

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ABSTRACT

In sixty diverse genotypes of chilli grown during *kharif* 2005, correlation studies indicated number of fruits per plant, number of branches per plant, plant height, 1000-seed weight, oleoresin content, 100-dry pod weight were found to have significant positive association with dry fruit yield per plant. Path analysis studies revealed that the number of fruits per plant had a high positive direct effect on dry fruit yield per plant. Days to maturity, 100-dry pod weight, number of branches and plant height exerted positive direct effect on dry fruit yield and be considered while breeding for improved dry fruit yield in chilli.

Key words: Chilli, Correlation and Path analysis

Genetic Effect of Dwarfing Genes on Yield and Yield Contributing Traits in Bread Wheat (*Triticum aestivum* L.)

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ABSTRACT

Norin 10 based dwarfing genes (*Rht₁* and *Rht₂*) have been widely exploited for increasing the grain yield in bread wheat (*Triticum aestivum* L.) by improving partitioning of assimilates to grain. Eight semi-dwarf wheat genotypes having either *Rht₁* or *Rht₂* dwarfing genes were compared with a tall control khafi (*rht*) having no dwarfing genes and were evaluated at Rajshahi University, Bangladesh for yield and yield contributing traits. Significant differences for grain yield and yield components were observed in these genotypes showing the effects of dwarfing genes. Genotypes Seri 82(*Rht₁*) and Kanchan (*Rht₂*) had medium plant height of 75.73 and 72.22 cm respectively, highest number of tillers/plant (7.33 and 7.67), highest number of spikes/plant (6.33 and 6.67) which resulted the highest grain yield per plant. The dwarfing genes not only provided lodging tolerance but also pleiotropically affected high yield by allowing more tillers to survive. Number of tillers/plant and number spikes/plant showed very strong positive correlation with grain yield per plant. Kheri(*rht*) with highest plant height (95.17cm), reduced number of tillers/plant (4.00) and spikes/plant (3.67) has the lowest grain yield per plant (3.85g)

Key words: Wheat (*Triticum aestivum* L.), Semi-dwarfing Genes, Grain Yield

Validation of New Approach to Assess Environmental Influence on Expression of Yield Attributing Characters in Mungbean [*Vigna radiata* (L.) Wilczek]

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ABSTRACT

To highlight the role of environment in expression of inherent association of yield attributing characters, comparison between genotypic, phenotypic and environmental correlations and heritability for each of the character pairs was done in twenty mungbean genotypes following the formula suggested by Kole, (1983). The phenotypic and genotypic correlations were in quite agreement with each other for majority of character pairs. Three categories of estimates for genotypic, phenotypic and environmental correlations were noted. If the genotypic and phenotypic correlations were positive and environmental correlations were negative then r_e/r_g was less than $H_1 H_2$. Majority of the pair combinations indicated genotypic correlation values more than the phenotypic values. Here, the value obtained from r_e/r_g was less than $\frac{1-H_1 H_2}{(1-H_1)(1-H_2)}$. In this case, r_e/r_g was greater than the above expression involving the heritability estimates.

Key words: Heritability, Character Association

Effect of Zinc on Rice in Rice-Blackgram Cropping System in Saline Soils

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ABSTRACT

A field experiment was conducted during *kharif* and *rabi* 2002-2003, in a coastal saline soil to study the effect of various levels of Zn (0, 12.5, 25 and 50 kg ha⁻¹) on yield, nutrient concentration and nutrient uptake in rice crop. Graded levels of zinc significantly increased the dry matter production at harvest in both grain and straw of rice crop. Application of 50 kg ZnSO₄ ha⁻¹ to saline soils led to early flowering (Fifty per cent) in *kharif* rice by eight days. The treatment receiving 50 kg ZnSO₄ ha⁻¹ showed significantly highest grain yield (5519 kg ha⁻¹) while those receiving 25 and 12.5 kg ZnSO₄ ha⁻¹ were at par with each other.

Key words: Rice, Zinc Nutrition, Saline Soils

Effect of Rhizobium and PSB on Growth and Yield of Groundnut (*Arachis hypogaea* L.)

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ABSTRACT

A field experiment was conducted to evaluate the effect of method of *Rhizobium* and PSB application with different rates of chemical fertilizers and FYM on groundnut crop. The results revealed that integrated application of *Rhizobium*, PSB, chemical fertilizers and FYM resulted in significant dry matter production, 100-pod weight, 100-kernel weight, shelling percentage, pod yield and haulm yield than application of *Rhizobium*, and PSB with either chemical fertilizers or with FYM, alone. PSB performed equally well as seed treatment, soil application or application along with FYM, irrespective of influencing yield and yield parameters.

Key words: *Rhizobium*, Phosphorus Solubilising Bacteria, Groundnut

Effect of Manure and Fertilizers on Soil Available N, P and K Status During the Growth Stages of Rainfed Groundnut

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ABSTRACT

Experimental results indicated that a available nitrogen, phosphorous and potassium in the soil significantly varied with the treatments. The available nitrogen was maximum at flowering stage due to application of FYM than N alone. Phosphorous availability was maximum with NPK + gypsum + Zn sO₄ and increased from initial to flowering stage. The maximum a available K content in the soil was increased during flowering except in control and NP treatment . the availability NPK was higher at flowering stage and thereafter decreased from maturity.

Key words: Manure, Fertilizers, Major Nutrients, Growth Stages, Groundnut

Survey on Nodulation Pattern and Mineral Nitrogen Levels in Rice fallow Balck gram Areas in Guntur District

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ABSTRACT

A survey was conducted to study the nodulation pattern and mineral nitrogen levels in the soils of rice-fallow blackgram growing areas in Guntur district. The study indicated a wide variation in blackgram nodulation depending on different soil conditions. Number of nodules per plant varied from 4.0-23.75 and the dry weight of nodules ranged from 7.0-76.0 mg per plant. Mineral nitrogen in soils ranged from 63.7 to 91.0 ppm and was found to be high at flowering stage compared to harvestign stage.

Key words: Rice Fallow Blackgram, Nodulation of Rhizobium, Mineral Nitrogen

Efficacy of Some Eco-friendly and conventional Insecticidal Treatments Against *Lipaphis erysimi* (Kalt.) Infesting Cauliflower

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ABSTRACT

A field study was conducted with sixteen treatments replicated thrice to evaluate the efficacy of certain new insecticides and eco-friendly chemicals and the joint toxicity of the insecticides with *B.t.* and lufenuron at half of the concentrations against *Lipaphis erysimi* (Kalt.) on cauliflower at the Agricultural College Farm, Bapatla during rabi, 2003-04. Profenophos 0.05 per cent was found to be the most effective among all the treatments. In general, the conventional insecticides were found better when compared to the combination treatments in suppressing the aphid population. The overall mean efficacy of the treatments in the descending order was profenophos 0.05 per cent > lufenuron 0.005 per cent + profenophos 0.025 per cent > thiodicarb 0.075 per cent > lufenuron 0.005 per cent + thiodicarb 0.0375 per cent > *B.t.* 0.1 per cent + profenophos 0.025 per cent > *B.t.* 0.1 per cent + thiodicarb 0.0375 per cent > lufenuron 0.005 per cent + neem oil 0.5 per cent > neem oil 1 per cent > lufenuron 0.01 per cent > *B.t.* 0.1 per cent + neem oil 0.5 per cent > lufenuron 0.005 per cent + spinosad 0.0075 per cent > *B.t.* 0.1 per cent + lufenuron 0.005 per cent > spinosad 0.015 per cent > *B.t.* 0.2 per cent > *B.t.* 0.1 per cent + spinosad 0.0075 per cent.

Key words: *Lipaphis erysimi*, Cauliflower, Spinosad, Lufenuron, Thiodicarb, Profenophos.

Effect of *Calotropis gigantea* R. Br. on the Digestive Enzymes of *Helicoverpa armigera* (Hub.) and *Spodoptera litura* (Fab.) (Noctuidae: Lepidoptera)

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ABSTRACT

The effect of botanical toxin from *Calotropis gigantea* R. Br. belonging to the family Asclepiadaceae on digestive enzymes viz., protease, amylase and lipase in *H. armigera* and *S.litura* were evaluated. *C. gigantea*, leaf and flower extract had a significant effect on digestive enzyme production. The leaf and flower extract drastically reduced the enzyme production in treated larva of test insect, which were fed with a treated diet containing *C. gigantea* leaf and flower extract at 5 per cent as compared to control.

Key words: *Calotropis*, *Helicoverpa*, *Spodoptera*

Efficacy of Conventional and Biorational Insecticides Against Sucking Pests and Leaf Miner Infesting Pumpkin

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ABSTRACT

Field studies were conducted to evaluate certain insecticides against sucking complex and leaf miner. The evaluation of insecticides revealed that 0.05 per cent chlorpyrifos and 0.054 per cent monocrotophos were highly effective against both aphids and whiteflies, where as monocrotophos, chlorpyrifos and Nimbecidine were the most effective against leaf miner.

Key words: Efficacy of Insecticides, Biorational, Sucking Complex, Leaf Miner, Pumpkin

Efficacy of Certain Insecticides Against Shoot and Fruit Borer [*Earias vitella* (Fabricius)] on Okra

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ABSTRACT

Studies on efficacy of certain insecticides alone and in combination with novaluron and delfin (*B.t.* formulation) against okra shoot and fruit borer *Earias vitella* (Fabricius) revealed that dichlorvos + novaluron and dichlorvos + delfin were the most effective treatments in reducing the fruit infestation as well as in giving higher yields other treatments novaluron + spinosad and delfin + spinosad are also found effective in fruit borer suppression and recorded better yields.

Key words: Okra Shoot and Fruit borer, *Earias vitella*, Chemical Control

Isolation of Seed Mycoflora From Sesamum Varieties

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ABSTRACT

Seeds of five sesamum varieties collected from Agricultural Research Station, Yellamanchili, Visakhapatnam district, Andhra Pradesh were used for isolation of seed mycoflora by standard blotter paper and agar plate methods. Ten fungi were isolated from both the methods. Agar plate method was found superior to standard blotter method. The fungi isolated were *Alternaria* sp., *Aspergillus flavus*, *Aspergillus niger*, *Aspergillus terreus*, *Curvularia* sp., *Fusarium* sp., *Penicillium* sp., *Rhizoctonia* sp., and *Sclerotium* sp. Surface sterilization of seed with 1% sodium hypochlorite reduced the quantity of mycoflora.

Key words: Isolation, Seed Mycoflora, Fungal Species, Sesamum

Stem Rot Caused By *Sclerotium hydrophilum* Sacc, In Rice

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ABSTRACT

Paddy seeds collected from stem rot affected plants and also healthy plants, on artificial inoculation with the culture of *Sclerotium hydrophilum* Sacc have reproduced the disease indicating the pathogen is carried in association with the seed. Seedlings raised in pots incorporated either with the infected plant debris or inoculum have developed the disease indicating that the disease is also soilborne in nature. Four weeds like, *Dinbra arabica*, *Echinochloa colonum*, *Panicum javanicum* and *Eleusine aegyptiaca* have shown the stem rot symptoms on artificial inoculation, which might act as collateral hosts for the fungus. Studies revealed that the disease might occur either from seeds, soil or other graminaceous hosts.

Key words : *Sclerotium hydrophilum*, Paddy Seed, Weeds

Response of Cut Flowers of Tuberose to Floral Preservatives and Packing Material on Qualitative Parameters

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ABSTRACT

The rose variety, 'Hyderabad Double' was grown in the kharif season during 2003 and 2004 on a vertisol at the Agricultural Research Institute, Rajendranagar. The cut flowers were preserved in different vase solutions and also evaluated to standardize a suitable packing material to increase their shelf life. The results showed that sucrose 2% + Ag NO₃ 25ppm was the best floral preservative to increase the vase life of the spikes and increase the percentage of open flowers significantly. The vase life was also significantly improved with a higher percentage of open flowers by preserving the spikes of tuberose in vase solutions containing 2% sucrose + Co Cl 100 ppm and sucrose 2% + Na O Cl 100 pm. The polypropylene or polythene sleeves were the ideal packing material to be stored for 24 or 48 hours in fiber board boxes. to improve the vase life and percentage opening of flower.

key words: Tuberose, Floral Preservatives, Vase Life, Packing Material, Storage Duration

A Survey of the Mineral Leaf Nutrient Status of Kagzi Lime Orchards in Bikaner District of Rajasthan

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ABSTRACT

The evaluation of leaf samples of Kagzi lime indicated deficiencies of nitrogen, potassium, manganese and zinc in the orchards. The phosphorous, iron and copper contents in the leaves were found optimum. Nitrogen content has significant and positive correlations with Mn, Cu and Zn. The phosphorous content had significant and positive correlation with K and Fe. The significant positive correlations between Fe and Mn and Cu; also Mn and Cu; and also between Cu and Zn were observed.

key words: Leaf Nutrient Status, Kagzi Lime

Functioning of Micro-watersheds A Case Analysis

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ABSTRACT

The thrust of Indian agriculture in the post-green revolution period is an enhancement of agricultural productivity through sustainable practices. To achieve this end, one of the major initiatives undertaken by the government of India was the implementation of a national level project/programme for the development of rainfed areas through the watershed approach. Case analysis on the present study revealed that the selected ten micro-watersheds were functioning satisfactorily in Prakasam district scoring reasonable achievement in agriculture, forestry, engineering and community organisation sectors.

Key words: Micro-watersheds

Profile of the Scientists of Acharya N.G. Ranga Agricultural University

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ABSTRACT

This study has focused to analyze the profile of Acharya N. G. Ranga Agricultural University Scientists. A sample of 150 Scientists was selected from all the colleges, research stations and extension centers of the university. The selected personal and psychological variables were age, academic qualifications, job experience, salary per month, cadre in the organization, attitude towards work, job involvement, perception of work load, professional perception, achievement motivation, self confidence, present level of aspiration and future level of aspiration. Majority of the scientists belonged to middle aged group, majority of them Ph. D. degree holders, most of them were in assistant professor cadre, they felt that the salary was average, majority of them had average job experience. Regarding rest of the selected psychological variables, majority of them had shown average trend in the perception.

Key words : Profile, Scientists

Correlation and Regression Studies on Adoption of Improved Rapeseed and Mustard Production Technology

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ABSTRACT

An investigation was undertaken to study the role of socioeconomic factors in adoption of improved cultivation practices in rapeseed and mustard. The study revealed that aged and economically sound farmers with big land holding and access to more contact with extension agencies exhibited increased adoption of improved varieties. Adoption of time of sowing had positive correlation with extension contact, knowledge and attitude. As regards the seed treatment and spacing, land holding, extension contact, knowledge and attitude had positive correlation with their adoption. On the other hand, the age had inverse relationship with adoption of seed treatment and spacing of rapeseed and mustard.

Key words : Rapeseed and Mustard, Adoption, Production Technology

Community Movement for Sustainable Development - A Case Study of Village Development Boards in Nagaland

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ABSTRACT

There is a paradigm shift in rural development policies in recent years from totalitarian approach to decentralized approach for transmitting the feelings and opinions of the people to the planning authority. The experiences of countries like-China, North Korea, South Korea, Japan, Taiwan, Israel etc., bear the fact that community participation has played the key role in rural transformation. Nagaland, situated in the extreme North-eastern part of India, has evolved a new approach to rural development through formation of Village Development Boards since 1980 wherein Community Movement is playing a greater role in the process of decentralization planning for the upliftment of rural villages. In this paper a thought-provoking study has been made to assess the role of Village Development Boards through community movement for sustainable development with overall impact on the quality of life of the village people, which has greater relevance in the context of advanced process of globalization.

Key words: Village Development Board, Community Movement.

Research Note

Effect of Organically Bound Micronutrients on Growth and Yield of Rice

K M Dakshina Murthy S P Palaniappan, S Chelliah and A Upendra Rao

Effect of Organic Meal, Farm Yard Manure and Phosphorus Sources on Rhizosphere Microflora of Groundnut

Mercy George, S Senthil and R Surendra Gopal

Synergism of Insecticides with Tri-phenyl Phosphate

V Surekha Devi, T Madhumathi and P Arjuna Rao

Variability, Heritability and Genetic Advance in Ridge Gourd [*Luffa acutangula* (Roxb.) L.]

J Ratna Prabha, T Padmalatha, C Ravi Sankar and V Srinivasa Rao

Performance of Ajowan [*Trachyspermum ammi* (L.) Sprague] in Andhra Pradesh

N.Hari Pradada Rao

Prioritization of Water Management Interventions in Krishna-Western Delta of Andhra Pradesh

B Mukunda Rao, K N Ravi Kumar, T V Satyanarayana, D Srinivas and G Subba Rao

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