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INTEGRATED MANAGEMENT OF WILT OF CHICKPEA INCITED BY *FUSARIUM OXYSPORUM* F. SP. *CICERIS*

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Abstract: Bacterial and fungal bioagents were isolated from soil sample collected from rhizosphere of healthy chickpea plant in a wilt affected field. In dual culture studies among 11 fungal isolates CPF-1 was found most effective with 88.60 per cent of inhibition and among the 24 bacterial isolates, CPB-10 showed 87.34 per cent inhibition of mycelia growth of *Fusarium oxysporum* f. sp. *ciceris*. By studying morphological and cultural characters CPF-1 was identified as *Trichoderma viridae* and CPB-10 as *Pseudomonas fluorescense*. Among different fungicides evaluated mancozeb was found compatible with both CPB-10 and CPF-1. CPB-10 and CPF-1 were also found compatible among themselves. The potential bacterial bioagent (CPB-10) and potential fungal bioagent (CPF-1), compatible fungicide mancozeb (0.2%), neem cake, vermicompost and farm yard manure was selected for integrated management of *Fusarium oxysporum* f. sp. *ciceris* under pot culture. Among the fifteen treatments imposed, treatment T12 (soil application of biocontrol agents + soil application of neem cake) was found to be superior as it recorded the least PDI of 20.46 per cent, Maximum shoot length (24.60 cm), Maximum root length (8.82cm), maximum shoot dry weight (0.30 g) and Maximum root dry weight (0.09g).

Keywords: Antagonists, Fungicidal compatible, *Fusarium oxysporum* f. sp. *Ciceris*, Integrated disease management

EVALUATION OF DIFFERENT INSECTICIDE FORMULATIONS AGAINST *APHIS GOSSYPHII* IN OKRA CROP

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Abstract: Evaluation of insecticides against sucking pest like aphid in okra crop was conducted Department of Entomology, CoA, IGKV, Raipur during *Rabi*2013-14. During *first of spraying*, the lowest aphid population was recorded (4.91/plant) against treatment T₆ and highest in T₁ (9.41/plant) within fifteen day of spraying. Whereas, the aphid population was also exhibited lowest (5.92/plant) in T₆ and treatment T₁ observed highest (9.77/plant) during *second of spraying*. The mean of first and second of spraying the aphid population (5.42 aphid/ plant) was observed minimum in foliar application of treatment T₆ i.e. spinosad 45EC @75g a.i./ ha followed by treatment T₄ i.e. emamectin benzoate 5 SG@13 g a.i./ha (6.46aphid/plant). The maximum 9.60 aphid/ plant was recorded in treatment T₁ i.e. emamectin benzoate 5 SG@8 g a.i./ha. Thus, during this period spinosad 45EC was found to be best effective treatment and which minimized the aphid population while emamectin benzoate 5 SG@8 g a.i./ha was noticed the least effective as compared to among all treatments.

Keywords: Evaluation of insecticides, Okra aphid, *Aphis gossypii*, Sucking pest of okra

EFFECT OF INTEGRATED NUTRIENT MANAGEMENT ON PRODUCTIVITY OF MAIZE

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Abstract: The field experiment was conducted during *kharif*, 2014 at the Instructional Farm of the Rajasthan College of Agriculture, Udaipur. The soil of the experimental site was sandy clay loam in texture slightly alkaline in reaction, medium in available nitrogen and phosphorus and high in potassium, sulphur and zinc. The experiment consisted of 12 treatments comprising chemical fertilizers, organic manure, and their combinations, viz., 100 % RDF + FYM at 10t ha⁻¹, 75 % RDF + FYM at 10t ha⁻¹, 50 % RDF + FYM at 10t ha⁻¹, 100 % RDF + vermicompost at 4t ha⁻¹, 75 % RDF + vermicompost at 4t ha⁻¹, 50 % RDF + vermicompost at 4t ha⁻¹, FYM at 20t ha⁻¹, vermicompost at 8t ha⁻¹, 100 % RDF, 75 % RDF, 50 % RDF, and control. These treatments were evaluated under randomized block design (RBD) with three replications. Maize cultivar (pratapmakka- 5) was taken as test crop. The results revealed that the yield of maize crop in terms of grain, stover and biological yield (2766, 7796, 10562 kg ha⁻¹) were maximum by applying 100% RDF + Vermicompost 4 t ha⁻¹ though the results were at par with those obtained by applying 100% RDF + FYM 10 t ha⁻¹.

Keywords: Vermicompost, FYM, Maize, RDF, biological yield

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EFFECT OF DISTILLERY SPENT WASH ON SUGAR CONTENT OF *STEVIA REBAUDIANA* BERTONI

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Abstract: *Stevia*, a plant of Paraguay, belongs to family Asteraceae. *Stevia rebaudiana* is a non-caloric, sweetener economically important medicinal plant used for a number of medical treatments. The plant consists of steviolosides which are 250-300 times sweeter than ordinary table sugar. The steviolosides are non-caloric and hypoglycemic. In India, distilleries are important part of industry, produce wastewater called spent wash. The distillery spent wash is rich in organic and inorganic salts that could be used as irrigation water. The present investigation has been conducted to demonstrate effect of distillery spent wash on sugar content of plant.

Keywords: *Stevia*, Sugar content, Distillery spent wash, Steviolosides

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SYNOPTIC ANALYSIS OF FABACEAE S.L. (LEGUMINOSAE) OF SOME AREAS OF DISTRICT RAJOURI (J&K), INDIA

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Abstract: The present communication deals with the documentation of members of family fabaceae from three tehsils of district Rajouri (J&K), India. A total of 51 species have been collected from the study area.

Keywords: Blotters, Fabaceae, Legume, Mimosoideae, Voucher number

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CONSTRAINTS FACED BY FISHERY COOPERATIVE SOCIETIES, SELF HELP GROUPS AND FISHERMEN GROUPS REGARDING FISH PRODUCTION IN BASTAR DISTRICT OF CHHATTISGARH

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Abstract: The study was undertaken in Bastar district of Chhattisgarh state to know the constraints perceived by the respondents of fishery cooperatives societies, SHGs and fishermen groups in various aspects of fish production. Six purposively selected blocks namely Jagdalpur, Bastar, Lohandiguda, Tokapal, Bakawand and Darbha located in Bastar district were selected and interviewed personally. The important constraints perceived by the respondents were heavy weed infestation, conflicts due to multipurpose use of ponds, involvement of middlemen, high netting charges as well as unavailability of transport facility.

Keywords: Fishery cooperatives societies, SHGs, Fishermen groups, Constraints, Fish production

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GENETIC VARIABILITY AND HERITABILITY STUDIES IN RICE (*ORYZA SATIVA L.*) UNDER SALINE CONDITION

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Abstract: Genetic parameters of variability and heritability of different characters were studied in 17 genotypes of rice. The coefficient of variation was highest for plant height followed by grain yield. The maximum genotypic coefficient of variability and phenotypic coefficient of variability were observed for Na⁺/K⁺ ratio, straw yield⁻¹, proline content, test weight. The heritability estimates were highest for Na⁺/K⁺ ratio, plant height and chlorophyll content. GA as % over mean were higher for Na⁺/K⁺ ratio, chlorophyll content, proline content, straw yield plant⁻¹ and test weight. Results on yield and contributing characters possesses sufficiently high values of heritability and genetic advance which can be utilized for further improvement of rice and evolving a high yielding saline tolerant variety.

Keywords: Rice, Coastal salinity, Variability, Heritability

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EFFICACY OF SOME PLANT EXTRACTS AS A TOXICANTS, ANTIFIDANTS OR GROWTH REGULATORS AGAINST *HELICOVERPA ARMIGERA* (HUBNER)

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Abstract: Fourteen plant extracts namely mango ginger rhizome, bergera leaf, calotropis leaf, tulsi leaf, thusa leaf, dhatura leaf, ipomia leaf, neem leaf, garlic leaf, ginger rhizome, bel leaf, harsingar leaf, neem cake and turmeric rhizome were tested for their toxic effect against the gram pod borer, *Helicoverpa armigera* (Hubner). Each extract was tested in three concentrations (100, 500 and 1000 ppm) incorporated in the semisynthetic diet. The mortality was recorded within three days in the higher concentration of thusa and dhatura leaf extracts and neem cake extracts other plant materials were comparatively slower. The mango ginger rhizome, bergera and tulsi leaf extract were the least effective.

Keywords: Growth regulators, Extract, Toxicant

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FEASIBILITY OF DRIP IRRIGATION IN MANGO DURING THE LEAN PERIOD OF WATER AVAILABILITY IN WESTERN INDIA

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Abstract: A field experiment was conducted for eight years (2002-2003 to 2009-2010) to compare the performance of drip and surface irrigation methods at different levels during lean period of water availability (*rabi* and summer season) in mango orchard cv. Alphonso. The experiment was laid out in randomized block design with four treatments consisting of two drip levels (0.2 and 0.4 PEF), the recommended practice (three surface irrigations starting from pea size of fruits) and a control with no irrigation. The results indicated that mango trees should be drip irrigated at 0.2 PEF in the areas facing water scarcity to save 30% of the irrigation water with ensued higher yields. The system should be operated at 1.2 kg /cm² pressure on alternate day for 40 minutes and 60 minutes during winter and summer months, respectively.

Keywords: Mango, Experiment, Irrigation, Water

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EFFECT OF DIFFERENT TEMPERATURE ON THE ANTAGONISTIC ACTIVITY OF FUNGAL AND BACTERIAL BIO AGENTS

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Abstract: Antagonistic potential of fungal (*Trichoderma harzianum*, *Trichoderma viride*, *Aspergillus niger* & *Penicillium oxalicum*) and bacterial bioagents (*Pseudomonas aeruginosa*, *Pseudomonas putida* & *Pseudomonas fluorescens*) was studied against three pathogens *i.e.* *Fusarium oxysporum*, *Rhizoctonia solani* and *Pythium ultimum* at four different temperature (20°C, 25°C, 30°C and 35°C). Antagonistic potential of all fungal and bacterial bioagents was found to be significantly influenced by different temperature. With regards to effect of different temperature, among all fungal bioagents, *Trichoderma harzianum* resulted maximum percent inhibition of the pathogens followed by *Trichoderma viride*, *Aspergillus niger* and *Penicillium oxalicum* at 25°C to 30°C. While as bacterial bioagents, *Pseudomonas fluorescens* exhibited their higher antagonistic potential followed by *Pseudomonas putida* and *Pseudomonas aeruginosa* against all three pathogens at highest temperature *i.e.* 35°C.

Keywords: Biological control, Temperature, Fungal & Bacterial bioagents

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STUDY OF SOME PSYCHOLOGICAL CHARACTERISTICS OF BT COTTON GROWER'S

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Abstract: Cotton is major commercial crop of India as well as for Gujarat .bt cotton cultivator posses different psychological characters which affect in knowledge and adoption of new technology so looking to this the present study was conducted in Vadodara district of Gujarat to know the different psychological characters of the bt cotton growers .It is found from the study that Majority of the Bt. Cotton growers (68.12 per cent) had medium level of scientific orientation. Slightly less than three fourth of the Bt. Cotton growers (72.50 per cent) had medium level of innovativeness. Three fourth of the Bt. Cotton growers (75. 63 per cent) had medium risk orientation and a great majority of the Bt. Cotton growers had medium level of overall modernity (85.00 per cent) and economic motivation (82.50 per cent).

Keywords: Crop, Psychological characters, Cotton

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EVALUATION OF FUNGI TOXICANTS AGAINST POWDERY (*ERYSIPHE POLYGONI* DC) DISEASE IN CORIANDER (*CORIANDRUM SATIVUM* L.) AT GWALIOR DIVISION

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Abstract: Five fungicides viz. wettable sulphar, carbendazim, difenoconazole, mancozeb and saaf were tested against powdery mildew (*E. poligoni*) of coriander. The minimum intensity of the diease was recorded in the treatment sulfex (19.86 per cent) followed by score 25.83 per cent, bavistin 29.72 per cent, saaf 31.67 per cent and mancozeb 39.30 per cent.

Keywords: Coriander, Fungi toxicants, Powdery mildew