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LAND EVALUATION OF VELLAMADAI VILLAGE IN COIMBATORE DISTRICT FOR SUSTAINABLE LAND USE PLANNING

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Abstract: A study was undertaken to evaluate four soil series belonging to Vellamadai village of Coimbatore district, Tamil Nadu for sustainable land use planning. Four soil series were tentatively identified and mapped into seven mapping units using GIS technique. These mapping units were grouped in to land capability class III and IV with limitations of soil texture and cation exchange capacity. Soil-site suitability evaluation for sorghum, cotton, sugarcane, maize and pearlmillet showed that clay soils were highly suitable (S1) for Sugarcane, moderately suitable (S2) for cotton, sorghum, sugarcane and pearl

millet, marginally suitable (S3) for sorghum and maize. The loamy sand soils were moderately suitable (S2) for pearl millet, marginally suitable (S3) for sorghum and not suitable for cotton, sugarcane and maize.
Keywords: land evaluation, GIS, soil suitability

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AILMENTS/TREATMENTS RECORDED THROUGH ETHNOMEDICINAL SURVEY VIS-Á-VIS THE FLORA OF C.C.S. UNIVERSITY, MEERUT CAMPUS AND SURROUNDINGS
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Abstract: Indigenous knowledge about ethnomedicinal value of 109 plants out of submitted flora of Chaudhary Charan Singh University Campus and surroundings has been collected from local people living in the villages around the campus as well as people of Banjara Community living along the road side near the campus through questionnaire and personal interview method. Plants were arranged alphabetically according to their Botanical names, local/common names, family, plant parts used as well as ethnomedicinal applications. The analysis of the data interestingly pointed towards possible propensity of stomach disorders since ancient period in this region as most of the plants / plant parts have been used for treating stomach ailments. Besides, plants for treatment of Alzheimers', HIV and dengue in traditional knowledge are indicative of rich understanding of these ailments which are yet less understood. Local traditional knowledge can hence be used for advancement of treatments for sustenance of the race in changing times.
Keywords: Ethnomedicinal, flora, stomach disorders

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Keywords: Ethnomedicinal, flora, stomach disorders

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MICRO-PROPAGATION OF BRINJAL (*SOLANUM MELONGENA L.*) BY CALLUSING

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Abstract: Brinjal know to be poor man's vegetable come under as essential vegetable. It has low in calories and high in nutrition and has very good source of fiber, calcium, phosphorous, folate and vitamin B and C. Micro-propagation of Brinjal trough callusing is reported in this study. MS medium supplemented with combination of BAP and 2,4-D in different concentrations were used for callusing leads to multiple shoots. The callus induction was highest in BAP (1.5mg/l) + 2, 4-D (2mg/l) for both hypocotyls and leaf explants. The maximum shoot regeneration was obtained in MS media containing BAP (1.5mg/l) + Kinetin (1mg/l); highest frequency of shoot regeneration (89% and 88%) and maximum number of shoots per explants (4.00 and 3.00) was obtained from the hypocotyls and leaf explants, respectively. The successful rooting was recorded on media supplemented with 3mg/l. IBA.
Keywords: Callogenesis, Micropropagation, *Solanum melongena*

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EFFECT OF PHOSPHORUS AND ZINC APPLICATION ON YIELD AND NUTRIENT COMPOSITION OF RICE CROP WITH WATER SALINITY

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Abstract: Two year pot experiment were conducted in green house to study the effect of phosphorus doses viz-P-40,P_2-80; P_3-120 kgha^{-1}. Four levels zinc sulphate viz-Control, Zn_1-25, Zn_2- 50 and Zn_3-75 kgha^{-1}and three levels of water salinity viz-ECo- Control EC_1 8, and EC_2-16 dSm^{-1}, significantly decreased grain yield with increasing levels of salinity yet increased higher dose of P and Zn. The maximum grain yield was recorded at P_2 (80 $p_2O_5$kg ha^{-1}) and Zn_2 (50 kg ZnSo4 kgha^{-1}) and yield to extent of 19.04 and 28.96% and 46.11 and 43.24% during 1st and 2nd years respectively. The incensement of EC significantly decreased P.K. Ca and Zn increased N and Na content (%). The P and Zn application significantly increased the N,K and Ca. However incensement doses of P increased P content (%) but Na & Zn content (%) decreased. While zinc sulphate application enhanced the Zn content (%) and decreased that of P and Na contents. **Keywords:** EC, N; P; K, Ca, Na, Zn, Content (%), yield and salinity

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KNOWLEDGE AND ADOPTION OF CONTROL MEASURE PRACTICES OF VARIOUS WEEDS OF RICE CROP IN CHHATTISGARH

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Abstract: Rice (*Oryza sativa* L. var. *Indica*) is the most important major cereal food crop in agriculture and economy of India. In world, rice is the second most widely consumed cereal next to wheat. Chhattisgarh is popularly known as the "Rice Bowl of India". The extent of yield reduction of rice due to weeds is estimated to be 15-95 per cent. In Chhattisgarh state, farmers generally control weeds manually. The physical methods are costly, labour consuming and the advantage of manual weeding could only be achieved when it is performed timely. Chemical and mechanical weed controls are regarded to be better than hand weeding and meagre availability of labour at peak period of weed infestation. In this respect, application of new and wide spectrum herbicide is done or in combination may give satisfactory weed control. Out of the thirty weeds infesting paddy crop, nine weeds are of major economic importance. A research was organised to assess the knowledge and adoption of control measure practices of various weeds of rice crop and average yield loses due to various weeds. In all one hundred and sixty rice growing farmers were randomly selected from purposively chosen Dhamtari and Nagri blocks of Dhamtari district of Chhattisgarh and personally interviewed with the help of structured interview schedule to collect the relevant information from the respondents. The data were statistically analysed and logically presented in tabular form. The

result of the study revealed that the exception of Resamkata (*Alternanthera sessilis* L.), majority of the rice growers had medium knowledge regarding control measure practices of various weeds of rice corp viz. Motha (*Cyperus spp*.), Kala bhengra (*Eclipta prostrata* L.), Sol ghas (*Aeschynomene indica* L.), Kaua keni (*Commelina benghalensis* L.), Pekereal weed (*Monochoria vaginalis*), Badauri (*Ischaemum rugosum* L.), Machharia (*Corchorus aestuans* L.) and Sawa (*Echinochloa colona* L.). Sawa followed by Resamkata (14.38%), Motha (6.25%), and Kala bhingra (6.25%). As regards low knowledge 38.12, 25.00, 18.12, 18.12, 17.50, 16.25, 12.50 and 11.25 per cent respondents were found to have low knowledge about Resamkata, Machharia, Pekereal weed, Badauri, Kaua Sol ghas, Kala bhengra and Motha respectively. It was also observed that majority of the respondents 71.87, 68.75, 66.87 and 58.75 per cent had medium adoption of control measure practices of Sol ghas, Motha, Sawa and Machharia respectively. 41.25 per cent respondents had high adoption of control measure practices of Resamkata while 23.12 per cent had low adoption of control measure practices of Resamkata.
Keywords: Knowledge, Adoption, Rice weeds

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HERBACEOUS DIVERSITY IN PROPOSED MINING AREA OF ROWGHAT IN NARAYANPUR DISTRICT OF CHHATTISGARH, INDIA

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Abstract: The study was conducted with the objective to analyze the structure and diversity of herbaceous vegetation in mining sites and to prepare eco-restoration plan for planting the key species in the adjacent degraded land surrounding environs of Rowghat area. The composition, structure and diversity of different forest sites/villages were conducted by stratified random sampling to measure herbaceous vegetation. The highest density of herbs was found in Bhusujkun Dongri followed by Khadkagaon. In this study we found that Godenmar Dongri and Bedhiyar Nala contained more number of species as compared to other study sites. The diversity pattern showed that the Parmad Dongri had maximum diversity followed by Bhusujkun Dongri and Ravdongri whereas Khodgaon had minimum Shannon index. In the Godenmar Dongri the density were much affected due to the present of various factors or by anthropogenic pressures which will ultimately results the gap in the regeneration status.
Keywords: Diversity, vegetation, herbaceous, deciduous forest

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EFFECT OF PLANTING GEOMETRY AND SEEDLING DENSITY ON GROWTH AND YIELD OF SCENTED RICE UNDER SRI BASED CULTIVATION PRACTICES

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Abstract: The experiment was carried out at Research Cum Instructional Farm of the Indira Gandhi Krishi Vishwavidalaya, Raipur (C.G.) during *kharif* season 2012. The treatment 25 cm X 25 cm with 2-3 seedlings (T_2) produced the significantly highest grain yield (38.20 q ha^{-1}) and straw yield (77.91 q ha^{-1}). However, few treatments were found at par, but on the basis of economics the same treatment was produced the highest net return (Rs. 59,426 ha^{-1}) and B:C ratio (2.4). The lowest net return (Rs. 41,894 ha^{-1}) B:C ratio (1.7) and maximum cost of cultivation (Rs. 25,305 ha^{-1}) were found with 20 cm x 10 cm + S_{2-3} (T_{14}).
Keywords: Growth, Scented rice, SRI Based, Spacing

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PRODUCTION AND PROFITABILITY OF BROILER: A CASE STUDY IN RAJNANDGOUN DISTRICT OF CHHATTISGARH

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Abstract: Poultry is one of the important components of animal husbandry in the Indian economy. The population of India and Chhattisgarh about 121 crore and 2.55 crore, respectively. Nearly 80 per cent population lives in rural area and 60 per cent of rural population is unemployed or underemployed.
Keywords: Production, broiler, Chhattisgarh

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THE EFFECTS OF GANGA WATER POLLUTION ON THE GROWTH OF *ZEA MAYS*

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Abstract: An experiment was conducted with an aim to evaluate the effluents in Ganga River and their impacts on Maize cultivar. The samples were collected from three different sites of Ganga River. The variety of food crop taken was Madhuri, F1 Hybrid. The replicas of *Zea mays* were grown in Petri dishes at different concentrations which were irrigated with 10 ml. solution at regular intervals. The Plumule and Radicle growth were measured after each 72 hours.
Keywords: Ganga, *Zea mays*, Plumule, Radicle, Germination

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SELECTION CRITERIA FOR DROUGHT TOLERANCE THROUGH DROUGHT INTENSITY INDEX AND DROUGHT TOLERANCE EFFICIENCY IN RICE

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Abstract: Selection for rice varieties having high yield potential coupled with drought tolerance should be the strategy for a successful breeding programme. Sixty F_3 segregating lines derived from cross between MTU1010 and IR86931-B-6 were evaluated for drought intensity index (DII) and drought tolerance efficiency (DTE) under irrigated, moisture stress and direct sown conditions. The use of DII and DTE is likely to be most beneficial in selecting parents for development of drought tolerance population. The mean yield per plant was 22.71g in irrigated, 40.58g in direct sowing and 9.31 g in moisture stress condition which resulted in drought intensity index 0.6 in irrigated and in direct sown condition 0.78 are recorded and average DTE recorded in both condition 52.2% (irrigated) and 26% (direct sown).
Keywords: DII, Drought tolerance efficiency, Rice, Selection criteria

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IDENTIFICATION AND CHARACTERIZATION OF HIGH YIELDING QUALITY TRADITIONAL AROMATIC NON- BASMATI RICE (*Oryza sativa* L.) VARIETIES UNDER ORGANIC FARMING CONDITION

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Abstracts: The present investigation was carried out at the Research cum Instructional Farm, IGKV, Raipur (C.G.) during *kharif* season of 2011. A Field experiment was laid out in randomized block design with 30 treatments.
The results revealed that among the varieties, Dubraj, Vasumati, Mahsuri, Indira Maheshwari and Mahamaya gave the higher grain yield and net profit and B:C ratio among all the varieties under organic farming condition. However, improved non-aromatic non- basmati type 'Indira Maheshwari' produced the maximum yield (46.90 q ha^{-1}). The lowest grain yield was produced by Jaldubi (32.84 qha^{-1}) an improved non-aromatic non- basmati type. The less variation was observed in grain yield of improved aromatic varieties.
Substantial variation was observed in the elongation ratio under the group of improved aromatic varieties with the highest in Gopal Bhog. The fine grain varieties have lower values of head rice recovery as compared to bold grain rice varieties irrespective of different groups**.** Rice variety 'Pusa Basmati' gave the highest amylose percent among different rice varieties.
Keywords*:* Organic Farming, Varieties, Rice

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DISTRIBUTION OF SOME IMPORTANT BIODIESEL PLANTS OF JAMMU DISTRICT (J&K, INDIA)

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Abstract: India which imports most of the fuel from other countries to meet its energy demands is in the need of some alternate source of fuel such as biodiesel. *Jatropha curcas*, *Pongamia pinnata*, *Ricinus communis* and *Argemone mexicana* are the important feed stocks of biodiesel. The present communication documents their distribution in Jammu district.
Keywords: Biodiesel plants, distribution, Jammu

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USE OF INFORMATION SOURCES BY FARMERS OF RAIPUR DISTRICT OF CHHATTISGARH

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Abstract: Information is key to development. Information is power an informed society is more conducive for development. Arang and Dharsiwa blocks were purposively chosen for the study owing to their proximity to the state capital *i.e*. Raipur. One hundred farmers were randomly selected from nine villages of the above two blocks. A structured interview schedule was developed on the basis of the objectives of the study and the respondents were personally interviewed by the researchers for collecting the primary data. It was found that the majority of the respondents were middle aged, studied up to primary school, belonged to schedule caste, medium sized family, had small sized family, had no membership in any organization, had small sized land holding , had other sources of irrigation, had agriculture + labour as their occupation, had annual income of Rs. 35,00 to Rs. 60,000, sold their farm produce at mandi. It was also found that majority of the respondents had medium overall contact with extension personnel, had medium overall use of information sources, had medium scientific orientation, had moderately favorable attitude towards use of different mass information source. Form the correlation and mutipal analysis it found the variables education, size of land holding, sources of irrigation, occupation, annual income, marketing, scientific orientation and attitude had positive and significant relationship with use of information sources at 0.01 level of probability, while the variable contact with extension personnel had positive significant relationship with the variable use of information sources at 0.05 level of probability. The variable age had negative and significant relationship with use of information sources at 0.01 level of probability.

Keywards: Information Sources, Communication, Scientific Orientation

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PHYSICO-CHEMICAL CHARACTERISTICS OF MILLET BASED COMPOSITE FLOUR

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Abstract: *Ragi* is considered to be ideal food for diabetic individuals due to its low sugar content. A composite flour utilizing *ragi* and wheat flour is is used to prepare composite flour ratio being 70:30 (Wheat: Finger millet). The composite flour contains fairly good amount protein (10.49%), ash (1.38%) and 251.724 (mg/ 100 g) calcium which shows that the product is nutritionally rich especially in terms of calcium and protein. The fat content (1.5%) is quite low. Therefore, it is also a low fat food which is also good for the peoples suffering from the obesity. For good human health the requirement of calcium and protein is 16:1 (mg: g). The calcium and protein ratio of the developed product is 23.99:1 which is quite higher than the recommended value and also its calcium contain is 251.724 mg/ 100 g. Therefore, it can be able to protect human body from calcium deficiency.

Keywords: Composite flour, ragi, physico-chemical characteristics

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EFFECTS OF CHLORIMURON ETHYL 10% + METSULFURON METHYL 10% WP (ALMIX) HERBICIDE USES ON TRANSPLANTED RICE *(ORYZA SATIVA L.)* UNDER PLAIN RESIGN OF CHHATTISGARH

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Abstract: A field trial was conducted during the kharif seasons of 2012 on transplanted rice (Oryza sativa L.) at Chhura,Gariyaband district of Chhattisgarh, with an objective to identify effective of Almix for the control of complex weed flora of transplanted rice, works through both contact and residual soil activity, hence provides weed management in rice for a longer period. Almix was also not prone to volatilization. It is difficult to raise weed free in transplanted rice due to the application of only one convectional herbicide and unfavorable condition during puddling time. Application of combine formulation of Chlorimuron + Metsulfuron (Almix) 20 % WP @ 0.004 kg ai/ha as post-emergence at 25 DAT to obtained effective control of weeds such as Eclipta alba (Bhringraj) Monochoria vaginalis, Sagittaria pygmaea, Commelina benghalensis, Sphenoclea zeylanica, Cyperus iria, Cyperus difformis and Fimbristylis miliaceae in paddy fields. Grain yield (Qtl/ha) of treatment plot was recorded higher, lower and average 50.0, 34.5 & 42.25, respectively with the application of Chlorimuron + Metsulfuron (Almix) @ 0.004 kg ai/ha) at 25 days after transplanting (DAT). However, Grain yield (Qtl/ha) of farmer practice plot was reduces under recorded higher, lower and average 36.84, 28.95 & 32.90, respectively with the manual weeding twice at 20 & 40 days after transplanting (DAT). Average cost of cultivation (Rs./ha) of treatment plot & farmer practice plot were 20750 &19987, respectively. The cost benefit ratios of treatment and farmer practice plots were 2.55 & 2.05, respectively.
Keywords: Crop Management, Herbicidal Weed Control and Transplanted Rice

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THREATENED MEDICINAL PLANTS OF JAMMU REGION-A PART OF NORTH WEST HIMALAYAS, J&K, INDIA

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Abstract: Jammu region of J&K State is bestowed with great diversity of medicinally important plants which are used frequently by the inhabitants to cure various common ailments in their daily life. A perusal of literature reveals that no study had been conducted so far pertaining to the diversity, ethnobotany, concern and status of the threatened plants of Jammu region in particular and J&K State in general. Therefore an attempt has been made to record the interesting indigenous medicinal uses of less known threatened plants of Jammu region of J&K State. A total of 30 threatened plat species belonging to 26 families and 30 different genera were reported from the region. The families Asteraceae and Apiaceae represented by 3 species each dominated the floral composition and remaining all 24 families represented by single species and genera each. Different plant parts such as roots/rhizomes/corms, leaves, bark, fruits, seeds, flowers, stem and whole plants are used for the treatment of various ailments. The four reported life forms were Herbs, trees, shrubs and climbers. Herbs make up the highest proportion of threatened medicinal plants with 24 species followed by trees with 4 species while shrubs and climbers contributed 2 species each. All the described 30 species have been categorized as critically endangered (4 spp.); Endangered (13 spp.) and Vulnerable (13 spp.) as per the new international Union of conservation of Nature and natural resources (IUCN) criteria. Appropriate strategy and action plan for conservation and management of threatened plants has been suggested.

Keywords: Ethnobotany, Threatened Plants, Indigenous, Life Forms, Conservation

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ECOLOGICAL ATTRIBUTES OF SOME INVASIVE PLANT SPECIES OF JHIRNA RANGE IN CORBETT NATIONAL PARK RAMNAGAR, UTTARAKHAND

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Abstract: Invasive species are those that occur outside their natural range, spread rapidly and cause harm to other species, communities or entire ecosystem and to human well-being. Invasive plant species alter native community composition depletes species diversity, affect ecosystem process and thus cause huge economic and ecological imbalance. These plants possess a set of remarkable traits that allow them to colonize huge areas upon invasion. In India invasive species are present for over a century and some of them are world's worst invasive species. The invasive species are aggressive invaders outside their natural range and have been recognized as the second largest threat to biological diversity and other natural resources after habitat destruction. Present work was carried out to find the intensity of invasion (dominance, density, abundance, frequency and importance value index) of some invasive species distributed in Jhirna range of Corbett National Park, Ramnagar Uttarakhand and to understand the impact of invasive plants on the structure and composition of other species. The information and data were collected with the help of random sampling by placing quadrats of 1x1 m for herbs and 5x5 m for shrubs or 10x10 m for tree. Density, abundance, frequency, basal area and their relative measures for each species have been calculated. A total of five invasive species viz. *Parthenium hysterophorus*, *Cyperus rotundes, Eupatorium perfoliferum, Ageratum conzoides* and *Lantana camara* were distributed in the study area. Of these, the maximum density was recorded for *Lantana camara* (2820 individual ha^{-1}) followed by *Parthenium hysterophorus* (270 individual ha^{-1}), and *Eupatorium perfoliferum* (240 individual ha-1). The *Lantana camara* was the dominant shrub species with 100% frequency.
Key words: Density, ecosystem, frequency, Importance value index, invasive

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EFFICACY OF DIFFERENT INSECTICIDES AGAINST WHILE FLY AND JASSID OF FRENCH BEAN, *PHASEOLUS VULGARIS*

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Abstract: The efficacy of different insecticides against White fly and jassid by conducting the study on French bean field during crop season at the department of Entomology,JNKV,Jabalpur.The basis of overall mean of white fly was recorded lowest population0.68/ plant treated plots with Imidacloprid 17.8SL (@ 17.8g a.i. /ha followed by dimethoate 30EC (@ 300.0g a.i. /ha and dichlorovos 76EC (@ 228.0g a.i. /ha, respectively. The lowest adult jassid population 0.19/ plant were observed in imidacloprid treated plot followed by thiamethoxam 25WG (@ 25.0g a.i. /ha, respectively. White fly and jassid infested were recorded as the major pests in French bean crop. Imidacloprid 17.8SL and dimethoate were found to be most effective against sucking pest complex on French bean.
Keywords: White fly and jassid, insecticides efficacy, insecticides application on french bean, chemical control ofWhite fly and jassid

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SUSTAINABLE LIVELIHOOD SUCCESS STORY OF FARMERS UNDER RICE FALLOW PILOT PROJECT IN UTTAR BASTAR KANKER,CHHATTISGARH

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Abstract: Though, increasing production and productivity of rice is essential to feed the growing population, considering its poor cost-benefit ratio and negative impact on the environment, alternatives need to be thought off. Based on this issue, a study was conducted in the Mahanadi river command area of Uttar Bastar Kanker of Chhattisgarh under Rice Fallow Pilot Project. It was found that the economic viability and ecological soundness of diversified farms especially that of paddy+ vegetables + dairy systems were higher than the non-diversified systems. Dairy and vegetables cultivation were found to have contributed significantly for the high level of sustainability of the diversified farms. Considering the need to increase

the income of farmers and conserve the environment, vegetables and dairy would serve as an ideal combination with rice crop to boost the sustainability of the Mahanadi river basin.
Keywords: Sustainability, Rice, Vegetables, Dairy system

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LONG TERM NUTRIENT MANAGEMENT INFLUENCES NUTRIENT USE EFFICIENCY, AGRONOMIC EFFICIENCY AND TRANSLOCATION OF NUTRIENTS IN RAINFED RICE

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Abstract: On firm experimental data was generated from a long term experimental trial on conjunctive use of organic and inorganic nutrients on productivity and soil health of rice –lentil crop in a rainfed ecosystem under All India Coordinated Research Project on Dry land Agriculture. The present experiment was carried out during *kharif season* of 2008 to 2011 at Banaras Hindu University, Varanasi, India. The experiment was laid out with six treatments namely, control (no nutrient supplemented), 100% RDF (80-40-30 kg ha^{-1} N:P:K), 100% N through FYM, 50% N through FYM, 50% RDF + 50% N through FYM and farmer's practice (only 20 kg N ha^{-1}) in an *udic ustochrept* of transect 4 of the IGP (Indo Gangetic Plain) region. The experiment indicated that combined application of 50% RDF + 50% N through FYM was a superior treatment for increasing grain as well as straw yield. The nutrient use efficiency, apparent recovery of nutrients, soil nutrient balance sheet and yield were also found higher in conjunctive use of organic and inorganic nutrient sources. The results further demonstrated that the conjunctive use of organic and inorganic source of fertilizer significantly increased uptakes of P and K but higher N uptake found with 100% RDF under rainfed condition.
Keywords: Inceptisol, fertilizer use efficiency, nutrient uptake/ translocation, rainfed, rice yield

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MANAGEMENT OF CHOANEPHORA LEAF BLIGHT (*CHOANEPHORA INFUNDIBULIFERA*) IN SOYBEAN (IN-VITRO CONDITION)

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Abstract : Out of fourteen medicinal plant leaf extracts, Citrus and Eucalyptus inhibited significantly the radial growth of *C.infundibulifera.*. *Trichoderma viride* was not effective in inhibiting the mycelial growth of *C.infundibulifera.* Complete inhibition of radial growth of *C.infundibulifera* was observed with M2 and Sixer *in-vitro* evaluation of fungicides and out of 66 varieties of soybean screened, 7 varieties showed Absolutly resistance 43 were Highly resistance and 16 were found Moderately resistance. **Keywords:** *Choanephora infundibulifera*, medicinal leaf extract, fungicides, bioagent, screening

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FACTORS RESPONSIBLE FOR UNDERUTILIZATION OF *COCCINIA GRANDIS* AND *LUFFA ACTANGULA* IN JAMMU

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Abstracts: Cucurbitaceae though known world-wide on account of having broadly grown taxa such as *Cucumis sativus* (cucumber), *Citrullus lanatus* (water melon) and *Cucumis melo* (melon) that are consumed on a large scale (Jeffrey 1980), it also contains some lesser known species that are rich in minerals and vitamins**.** *Coccinia grandis* (L.) Voigt (syn. *C. indica*) and *Luffa actangula* (L.) Roxb. are the two such species (Kalloo and Bergh 1993; Rai *et al.* 2008). These provide prized vegetables, have the ability to grow in habitats that are generally inhospitable to other plants and are not taken by stray animals on account of having herbivory-deterrent compounds. Despite having potential to supplement world's food / medicinal basket, these have remained underutilized particularly in Jammu region. Present communication describes the factors responsible for less utilization of *C. grandis* (syn. *C. indica*) and *L. actangula* in Jammu (Sharma and Kachroo 1981).
Keywords: Coccinia grandis, Luffa actangula, Jammu

EFFECT OF LIGHT INTERCEPTION, SPAD VALUE, LEAF AREA INDEX, ROOT VOLUME AND ENERGETIC ON GROWTH CHARACTERS, GROWTH RATES AND YIELD OF SCENTED RICE UNDER SRI BASED CULTIVATION PRACTICES

Damini Thawait, Sanjay K. Dwivedi, Amit K. Patel, Mayur R. Meshram and Samaptika Kar
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Abstract: The experiment was carried out at Raipur during season of 2012. The treatment (T_2) planting of 2-3 seedlings hill^{-1} transplanted in the spacing of 25 cm x 25 cm in the age of 12 days recorded significantly highest i.e. light interception, SPAD value, LAI, root volume, root dry weight, grain yield and straw yield with good growth parameters, growth rates and energetic and yield.

Keywords: Growth, Energetic, yield

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EFFECT OF LIGHT INTERCEPTION, SPAD VALUE, LEAF AREA INDEX, ROOT VOLUME AND ENERGETIC ON GROWTH CHARACTERS, GROWTH RATES AND YIELD OF SCENTED RICE UNDER SRI BASED CULTIVATION PRACTICES
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Abstract: The experiment was carried out at Raipur during season of 2012. The treatment (T_2) planting of 2-3 seedlings hill^{-1} transplanted in the spacing of 25 cm x 25 cm in the age of 12 days recorded significantly highest i.e. light interception, SPAD value, LAI, root volume, root dry weight, grain yield and straw yield with good growth parameters, growth rates and energetic and yield.
Keywords: Growth, Energetic, yield

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QUANTITATIVE DETERMINATION OF POLYPHENOLS AND STUDY OF ANTIOXIDANT ACTIVITY OF A TRADITIONALLY IMPORTANT MEDICINAL PLANT: *HELICTERES ISORA* LINN.

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Abstract: In the present study *in vitro* anti-oxidative potential and free radical scavenging activity were analyzed for hydroethanolic extract of *Helicteres isora* Linn. (HEHI) stem bark by chemical assays including DPPH (2, 2-diphenyl-1-picrylhydrazyl), superoxide anion radical scavenging, ferric ion reducing antioxidant power (FRAP) metal chelating activity. These assays were compared with standard antioxidants such as ascorbic acid, BHT, rutin, EDTA. Total phenolic and flavonoid content were also determined spectrophotometrically. IC_{50} value of HEHI obtained in DPPH, superoxide anion radical scavenging and metal chelating activity were 97.53 ± 0.281, 5.40 ± 0.032, 165.7 ± 0.45 respectively. The results obtained revealed that *Helicteres isora* L. can be used as a potential source of natural antioxidants.

Keywords: Antioxidant, DPPH, Free radical, Phenols, *Helicteres isora*

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EFFECT OF JATROPHA CAKE AND ITS COMBINATION WITH FERTILIZER ON RICE PRODUCTIVITY

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Abstract: The present investigation was carried out during *kharif* season of 2006-07 at the Instruction Farm, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.). The experiment was laid out in randomized block design (RBD) and replicated thrice with ten treatments consist of Jatropha cake and chemical fertilizer doses and there combinations to evaluate effect on rice productivity. The applications of 100% NPK + 2 t ha^{-1} cake or 100% NPK + 1 t ha^{-1} cake were beneficial in increasing the growth, yield attributing characters dry matter production, uptake of major (nitrogen, phosphorus and potash) and micronutrients (iron, copper zinc and manganese) and yield of rice

crop. The Jatropha cake additions with recommended dose of chemical fertilizer also improved the soil organic carbon, soil available major (nitrogen, phosphorus and potash) and micronutrients (iron, copper zinc and manganese), thus sustainable soil health can be maintained by long term use of the cake in crop production. **Keywords:** Rice, Jatropha cake, Fertilizer, yield, productivity

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STUDY THE EFFECT OF JATROPHA CAKE AND ITS COMBINATION WITH FERTILIZER ON SOIL FERTILITY

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Abstract: The present investigation was carried out during *kharif* season of 2006-07 at the Instruction Farm, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.). The experiment was laid out in randomized block design (RBD) and replicated thrice with ten treatments consist of Jatropha cake and chemical fertilizer doses and there combinations to evaluate effect on rice productivity. N, P and K uptake by rice was the highest with application of 100% NPK + 2 t ha^{-1} cake. The micronutrients content (Fe, Zn, Cu and Mn) in grain and straw of rice were increased significantly with applications of full dose of fertilizer in combination with 1 or 2 t ha^{-1} cake over control and was maximum with 100% NPK + 2 t ha^{-1} cake. Total uptake of micronutrients by the crop was similar between 100% NPK + 2 t ha^{-1} cake, and 100% NPK + 1 t ha^{-1} treatments but significantly highest was observed with 100% NPK 2 t ha^{-1} cake compared to rest of the treatments. The Jatropha cake additions with recommended dose of chemical fertilizer also improved the soil organic carbon, soil available major (nitrogen, phosphorus and potash) and micronutrients (iron, copper zinc and manganese), thus sustainable soil health can be maintained by long term use of the cake in crop production.
Keywords: Rice, Jatropha cake, Fertilizer, Fertility status, nutrient uptake

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GENETIC DIVERGENCE ANALYSIS IN CHICKPEA (*CICER ARIETINUM* L.)

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Abstract: Genetic divergence analysis is a powerful tool in quantifying the degree of divergence between biological populations and to assess the relative contribution of different components to the total divergence. The present investigation aimed at ascertaining the nature and magnitude of genetic diversity among a set of chickpea genotypes. The genetic divergence were estimated in 30 elite genotypes for characters by using Mahalanobis D^2 statistic. The genotypes were grouped into four clusters. Cluster IV had maximum intra cluster distance while inter cluster distance was highest between clusters II and IV. Cluster means indicated that none of the clusters was superior for all characters studied. Therefore hybridization between genotypes belonging to different clusters is suggested for development of superior genotypes.
Keywords: D^2 static, Genetic divergence, Chickpea

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EXPRESSION OF COMBINING ABILITY FOR QUALITY TRAITS IN ELITE BREEDING LINES OF BRINJAL (*SOLANUM MELONGENA* L.)

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Abstract: Combining ability effects were estimated for different characters of brinjal in a line × tester mating design comprising 12 lines and 3 testers and their 36 F_1 hybrids. Parents and F_1 crosses differed significantly for general combining ability and specific combining ability effects for all the characters respectively. The result revealed high and significant differences among the parents and hybrids for most of the characters except ascorbic acid content, indicating the importance of both additive and non-additive gene action. On the basis of GCA effects across six characters, Punjab Neelam, DBSR-31, Ramnagar Giant, BR-SPS-14, ABSR-2 and Pant Rituraj were identified as most promising parents for inclusion in hybridization programme with the aim to improving fruit yield as well as other important characters. The most promising crosses showing high *per se* performance and significantly positive SCA effects for fruit yield and some other important characters were Punjab Sanyog x Black Beauty, Arka Nidhi x Dudhiya, DBSR-31 x Pant Rituraj, Ramnagar Giant x Dudhiya, BR-SPS-14 x Pant Rituraj, Azad Kranti x Black Beauty, Pusa Uttam x Dudhiya, ABSR-2 x Dudhiya, ABSR-2 x Pant Rituraj, ABSR-2 x Black Beauty, Pant Samrat x Dudhiya and Pant Samrat x Black Beauty. Some of the crosses

exhibited high dry matter with low moisture like Pusa Uttam x Black Beauty and Ramnagar Giant x Dudhiya. These crosses may exploit in the breeding programme for obtaining transgressive segregants towards developing hybrid varieties.
Keywords: Brinjal, *solanum melongena*, hybrid, trait

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AN ECONOMIC ANALYSIS OF MARKETING OF SOYBEAN IN RAJNANDGAON DISTRICT OF CHHATTISGARH

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Abstract: The present study was conducted in the Rajnandgaon districts of Chhattisgarh. Sixty farmers were selected randomly from three villages namely Ghumka, Botepar and Gidhwa. The primary data were collected for the year 2006-07. The major findings of this study revealed that there were two marketing channels for the marketing of soybean, which are: Channel-I: Producer – Village merchant – Wholesale dealers. Channel-II: Producer – Wholesale dealers. Marketing cost was higher being Rs.83.20 in Channel-I. The major constraints pertaining to cultivation of soybean were lack of irrigation facilities followed by lack of recommended package practices of crop. Constraints of marketing of soybean were lack of storage facilities followed by lack of regulated and cooperative market in the study area. Study suggested that the irrigation facilities are to be developed in the proper way so that farmers can adopt improved technologies with assured irrigation facilities. It is essential to adopt the production system approach of linking the production technology, credit and marketing of soybean as was done under Technology Mission of Oilseeds, to raise the production of soybean particularly.
Keywords: Marketing, Economic

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Short Communication

EFFECT OF LAND LAYOUT AND IRRIGATION METHODS ON THE ECONOMICALLY IMPORTANT TRAITS OF SAFFLOWER (*CARTHAMUS TINCTORIUS* L.)

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Abstract: Among land layout L_1-Ridges and furrow method at 60 cm x15 cm recorded plant height was found significant at all growth stages. At 30 days, ridges and furrow land layout recorded highest plant height (15.96 cm), which was significantly superior over other land layout. Similar trends were observed at 45, 60, 75, 90, 105 days and at harvest. The significant effect of Ridges and furrow land layout recorded highest test weight (45.91gram) than other land layouts. It was followed by skip row furrow method of safflower was significantly more due to 60 mm irrigation depth (46.66) then 50 (43.83) and (40 mm 42.08). The interaction effect of land layout and depth of irrigation on 1000 seed weight was found to be non- significant. Ridges and furrow land layout recorded highest seed yield kg/ ha (1579 kg) than other land layouts. It was followed by skip row furrow Method (1430 kg/ha). Ridges and furrow method of land layout produced highest oil (28.3%) over other land layout. Irrigation depth at 60 mm recorded higher oil % (28.5 %) to be significantly over 50 mm and 40 mm. The interaction effect of land layout and depth of irrigation on oil % was found to be non – significant.
Keywords: Safflower, seed yield, seeds weight, oil % and irrigation method

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Short Communication

SOIL TEST CROP RESPONSE (STCR) CORRELATION STUDIES ON WHEAT

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Abstract: Soil test crop response (STCR) correlation studies on Wheat were carried out in village Chirkoma, district Balrampur (C.G.) during Rabi 2012-13 taking MP-1203 as test crop to quantify Wheat production in the context of the variability of soil properties and use of balanced fertilizers based on targeted yield concept. Soil properties show moderate variation in texture (Sandy to sandy loam), organic carbon content (3.0 to 9.0 g/kg), and pH (4.67 to 7.52). Soil fertility status for N is low to medium (140 to 260 kg/ha), P is low to medium (5.28 to 14.56 kg/ha) and K ranges from medium to high (146 to 387 kg/ha). Database regarding nutrient requirement in kg/t of grain produce (NR), the percent contribution from the soil available nutrients [CS (%)] and the percent contribution from the applied fertilizer nutrients [CF (%)] were

computed for calibrating and formulating fertilizer recommendations. The yield target for 30 q/ha was tested in farmers' fields. The percent achievement of targets aimed at different level was more than 90%, indicating soil test based fertilizer recommendation approach was economically viable within the agro-ecological zone with relatively uniform cropping practices and socio-economic conditions.
Keywords: Nutrient requirements, Wheat, Yield target

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Short Communication

TRADITIONAL FISH DRYING AND STORAGE TECHNIQUES USED BY THE TRIBAL'S OF BASTAR REGION (CHHATTISGARH)

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Abstract: Traditionally fishing has been the one of the core of subsistence life throughout most of the tribal's of Bastar region. Tribal's depend mainly on the food products available naturally from the forests for their survival and living, fishes are one of the main food product in their diet. Investigations are described to show the traditional fish drying and storage practices used by the tribal's of Bastar region.
Keywords: Bastar, Chulla, Jungle, Mongri, Sukuwa, Traditionally, Tribal's

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Short Communication

EFFECT OF CULTURE FILTRATES OF PHYLLOPLANE FUNGI ON CONIDIAL GERMINATION OF *ALTERNARIA ALTERNATA* AND *COLLETOTRICHUM CAPSICI*

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Abstract: *In vitro* antagonistic activity of culture filtrates of phylloplane fungi was tested against pathogens causing diseases of *Impatiens balsamina*. The conidia germination of *Alternaria alternata* was greatly inhibited by culture filtrate of *Trichoderma viride* followed by *Aspergillus flavus, A. niger, Chaetomium globosum* and *Curvularia lunata*. Germ tube growth was inhibited by all test fungi, maximum by *Trichoderma viride* followed by *Aspergillus niger, A. flavus* and *Chaetomium globosum.* Maximum inhibition of conidia germination of *Colletotrichum capsici* was caused by *Trichoderma viride* followed by *Aspergillus niger, Fusarium oxysporum, Aspergillus flavus* and *Chaetomium globosum.* Maximum inhibition of germ tube growth was also caused by *Trichoderma viride* followed by *Aspergillus niger, Fusarium oxysporum* and *Aspergillus flavus.*
Keywords: Fungi, Germination, *Alternaria alternata*, Colletotricum capsici

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Short Communication

TO STUDY OF PATH COEFFICIENT ANALYSIS FOR YIELD COMPONENT IN WHEAT (TRITICUM SPP.) FOR IDENTIFICATION OF IDEAL GENOTYPES FOR CHANGING CLIMATE OF CHHATTISGARH

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Abstract: The present experiment entitled Study of yield attributing traits for identification of ideal wheat (Triticum spp.) genotypes for changing climate of Chhattisgarh was conducted at Department of Genetics and Plant Breeding, Indira Gandhi Krishi Vishwavidyalaya, Raipur during rabi 2009-10. Path analysis exhibited maximum positive direct effect on seed yield via biological yield, followed by plant height, ear head length, number of seeds per ear head and harvest index, whereas negative direct effect through number of tillers per plant, days to maturity and days to 50% flowering.
Keywords: Wheat, Path analysis, climate, Chhattisgarh

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Short Communication

VARIABILITY, HERITABILITY AND EXPECTED GENETIC ADVANCE IN GENE POOL OF PEA (*PISUM SATIVUM* L.)

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Abstract: Twenty genotypes of pea were evaluated with an objective to study of variability, heritability and genetic gain. All the 15 yields and yield attributing traits varied significantly among the genotypes. Pod yield ranged from 140.20 q/ha to 349.10 q/ and most of the genotypes exhibited significantly highest pod yield. A wide range of variability along with high estimates of GCV and PCV recorded for protein content, number pods per plant, number of primary branches per plant and plant height, whereas, rest of the characters showed moderate to low value of these traits. High value of heritability was observed for all the characters under studies except pod width and number of seeds per pod.protein content followed by1st pod initiation, days to 1st flowering, plant height and days to 50% flowering. The expected genetic gain was high for protein content followed by number of pods per plant, plant height, number of primary branches per plant, average seed weight, pod yield per plant and per hectare and average pod weight.

Keywords: Pea, *Pisum sativum*, gene

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Short Communication

CORRELATION OF SOCIO-ECONOMIC AND COMMUNICATIONAL ATTRIBUTES WITH ADOPTION OF DAIRY MANAGEMENT PRACTICES

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Abstract: The study was conducted in 2012 of Vidisha district (M.P) to know the relationship between correlation of socioeconomic and communicational attributes with adoption of dairy management practices. The study revealed that land holding, herd size, social participation and family income have positive and significant relationship with adoption of dairy management practices.

Keywords: Dairy management, Correlation, Socio-economic

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Short Communication

ALLELOPATHIC EFFECT OF DIFFERENT CONCENTRATIONS OF AQUEOUS EXTRACT OF *AZADIRACHTA INDICA* (NEEM) LEAF ON SEED GERMINATION OF SOME PULSES

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Abstract: The present study aimed at evaluating the allelopathic effect of aqueous extract of *Azadirachta indica* leaf on seed germination of some pulses. The aqueous leaf extracts reduced the % germination, shoot/root length, fresh/dry weight and vigour index of seedlings. It also increased the mean germination time of seeds. The allelopathic effect of aqueous leaf extracts of *Azadirachta indica* increased with increase in the concentration. These result revealed that the inhibitory effect might be due to the presence of some allelochemicals in the aqueous leaf extracts of *Azadirachta indica.*

Keywords: Extract, *Azadirachta indica*, Seed germination, Pulses

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Short Communication

TO STUDY OF CORRELATION COEFFICIENTS FOR YIELD COMPONENT IN WHEAT (TRITICUM SPP.) FOR IDENTIFICATION OF IDEAL GENOTYPES FOR CHANGING CLIMATE OF CHHATTISGARH

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Abstract: The present experiment entitled Study of yield attributing traits for identification of ideal wheat (Triticum spp.) genotypes for changing climate of Chhattisgarh was conducted at Department of Genetics and Plant Breeding, Indira Gandhi Krishi Vishwavidyalaya, Raipur during rabi 2009-10. Grain yield per plot showed highly significant positive correlation with biological yield at phenotypic level (0.704) and also at genotypic level (0.959). Ear head length showed highly significant positive correlation at phenotypic level with biological yield (0.605) and significant positive correlation with grain yield per plot (0.503). Number of tillers per plant exhibited significant positive correlation of both phenotypic and genotypic level with grain yield (0.492, 0.443), and biological yield (0.505, 0.441), respectively. Genotypes HI 8691, HI 1568, LOK 62 and GW 322 showed tolerance towards the higher temperature and gave higher yield in comparison to rest of the genotypes.
Keywords: Wheat, correlation coefficients, climate, Chhattisgarh

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Short Communication

EFFECT OF DIFFERENT LEVELS OF NITROGEN AND SPACING ON YIELD OF CABBAGE (*BRASSICA OLERACEA L.* VAR. *CAPITATA*)

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Abstract: The experiment was conducted to investigate the effects of nitrogen and plant spacing on and yield of cabbage (Brassica oleracea L. var. capitata). The cabbage cv. Golden Acre was grown with 3 nitrogen levels (90, 120 and 150kg/ha) and 4 spacing (60x60cm, 60x45cm, 60x30cm and 45x30cm). The weight of untrimmed & trimmed head and yield increased with increase in the rate of N application, and 150 kg N gave significantly higher yield over 90kg and 120 kg N/ha The narrow spacing 60 cm x 30 cm gave significantly higher yield over wider spacing. The weight of untrimmed and trimmed head was higher in wider spacing i.e. 60x60cm.
Keywords: cabbage, nitrogen, spacings, head

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Short Communication

STUDY OF YIELD ATTRIBUTING TRAITS FOR IDENTIFICATION OF IDEAL WHEAT (TRITICUM SPP.) GENOTYPES FOR CHANGING CLIMATE OF CHHATTISGARH

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Abstract: The present experiment entitled Study of yield attributing traits for identification of ideal wheat (Triticum spp.) genotypes for changing climate of Chhattisgarh was conducted at Department of Genetics and Plant Breeding, Indira Gandhi Krishi Vishwavidyalaya, Raipur during rabi 2009-10. Significant variability for all the observed characters in the materials due to genotypes indicated better scope for selection. Genotypes HI 8691, HI 1568, LOK 62 and GW 322 showed tolerance towards the higher temperature and gave higher yield in comparison to rest of the genotypes.
Keywords: Wheat, Triticum, climate, Chhattisgarh

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Short Communication

ESTIMATION OF GENETIC VARIABILITY, HERITABILITY AND GENETIC ADVANCE FOR YIELD AND ITS COMPONENT IN GARLIC (*ALLIUM SATIVUM* L.)

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Abstract: The study on genetic variability and correlation coefficient of different garlic genotypes was conducted at Department of Horticulture, IGKV, Raipur during the Rabi 2012-13. The total 22 genotypes including one check were

evaluated under RBD with 3 replications. This study revealed that the phenotypic coefficient of variation was higher than the corresponding genotypic coefficient of variation for all the traits. Genotypic co-efficient of variation was higher for marketable yield per hectare, total yield per hectare, weight of 10 outer cloves, plant emergence, average bulb weight and number of cloves per bulb. High heritability coupled with high genetic advance as percentage of mean was high for plant emergence percentage, collar height, collar thickness, fourth leaf length, polar diameter, equitorial diameter, neck thickness, average bulb weight, number of cloves per bulb, weight of 10 outer cloves.
Keywords: *Allium sativum*, genetic, yield