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TO STUDY THE SEASONAL INCIDENCE OF JASSID (*AMRASCA BIGUTTULA BIGUTTULA*) AND WHITE FLY (*BEMISIA TABECI*) OF OKRA WITH RESPONSE TO VARIOUS ABIOTIC FACTORS

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Abstract: The detailed studies for the present investigation was carried out on jassid, *Amrasca biguttula biguttula* and white fly, *Bemisia tabeci*. of okra. For these studies, the experiment was conducted in randomized block design with three replications. There were seven treatments i.e. seven different sample sizes viz., 2, 4, 5, 6, 7, 8 & 16 plants which were randomly allocated in different plots. The observations were taken from two weeks old plants to last harvesting of fruits. First, incidence of the insect population during different growth stages of okra was recorded from the treatment represented maximum proportion of plant population (16 plants/plot). Experimental findings revealed that the above mentioned pests observed to infest the crop at different growth stages and ecological factors played an important role in their fluctuation during the crop growing season as many weather parameters showed their significant effects on population abundances. The peak populations of jassid (2.41/leaf/plant) and white fly (4.4/leaf/plant) were recorded on 2nd week & 1st week of May. Multiple regression analyses depicted that contribution of all the abiotic factors to the variations of jassid population was 91.0 % and 87.0% for white fly.

Keywords: Okra, Jassid, White fly, Pest incidence, Abiotic factor

COMMUNITY CHARACTERS OF HERBACEOUS SPECIES IN PLANTATION SITES OF COAL MINE

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Abstract: Mining has an environmental and ecological impact at each stage and level of its operation. These include deforestation, environmental pollution and ecological imbalance. In order to assess the community characters of herbaceous species the study was carried out to evaluate the structure, composition and diversity indices in plantation sites of mined out areas. A total of 43 herb species with 15 families were recorded in different plantation sites. Eucalyptus plantation representing a total of 26 species with 13 families, Teak plantation (31 species with 13 families), whereas 25 species with 12 families were recorded under the mixed (Cassia+Mangium) plantation. Total density of herb across the sites ranged from 412000-708000 individuals ha⁻¹, being least at mixed plantation and highest under Eucalyptus plantation, respectively. The diversity indices of the herb layer showed that the value of Shannon index in different plantation sites varied from 3.96-4.62, equitability (1.22-1.36), species richness (1.85-2.26), Simpsons index (0.05-0.10) and Beta diversity (1.39-1.72). Due to improper planning and negligence of regulations, mining activities results in an appreciable damage, degradation and deterioration of the environment and ecological damage to water, air and soil occurs. A long term strategy is needed to conserve and restore the fragile ecosystem of coal mine area.

Keywords: Coal mine, Composition, Diversity, Herb, Restore, Structure

KNOWLEDGE OF TRIBAL FISH FARMERS ABOUT COMPOSITE FISH CULTURE TECHNOLOGY OF FISH FARMING IN KONDAGAON DISTRICT OF CHHATTISGARH STATE

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Abstract: The present study was carried out during 2013-2014 in the purposively selected Kondagaon district in Bastar region of Chhattisgarh state focused on the practice wise level of knowledge regarding composite fish culture technology among the tribal fish farmers. Data were collected from 112 fish farmers through a structured interview schedule developed for the purpose. It was found that majority of the respondents were having low level of knowledge regarding recommended fish farming technology for assessing the level of dissolved oxygen in pond (100.00%), while in case of medium level of knowledge regarding recommended composite fish farming technology, (66.96%) respondents had medium level of knowledge about supplementary feed, as far as high level of knowledge is concerned regarding selected practices of recommended composite fish farming technology, 63.39 per cent respondents were found under high level of knowledge as suitable site for construction of pond, 68.75 per cent respondents had medium level of overall knowledge. The variables like education, social participation, fish farming experience, occupation, credit availability, source of information, scientific orientation, use of ponds for other purpose, source of water in pond, duration of water availability and extent of adoption towards recommended composite fish culture technology was found positively and significantly correlated with knowledge about composite fish culture technology at 0.01 per cent level of significance. Results in case of multiple regressions only 2 variables like scientific orientation and extant adoption of composite fish culture technology had positively and significantly contribution at 0.01 level of probability with the knowledge about composite fish culture technology.

Keywords: Composite fish culture, Fish farmers, Knowledge, Tribal farmers

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HUMAN-ELEPHANT CONFLICT SCENARIO IN CORRIDORS OF NORTHERN CHHATTISGARH

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Abstract: The present work was carried out in elephant corridors of northern Chhattisgarh (Sarguja, Balrampur, Jaspur, Surajpur and Koriya districts) to understand the scenario of human-elephant conflict (HEC). Four blocks were selected for the study. The field study was conducted in the affected villages/forest areas where migrated elephants were encountered. Incidents relating to conflict such as crop damage, house damage, human death and injury, elephant death, cause of all such conflicts were observed. Local people of the affected villages/forest areas including victims of conflict were interviewed through well structured questionnaires to understand movement pattern of elephant in the area, the way people were affected, their attitudes towards elephant and different aspects of conflicts. A total of 40 households (10 from each block) viz, Lundra, Batuoli, Sitapur and Farsabhar were randomly selected. Damage caused by elephants was of varying extent due to which people have developed antagonistic attitude towards the elephant which adversely affect protection and conservation efforts in the affected areas.

Keywords: HEC, Elephant corridor, Conflicts, Questionnaire, Crop damage

INTERRELATIONSHIP AND PATH ANALYSIS OF DIFFERENT TRAITS UNDER COASTAL SALINITY IN RICE (*ORYZA SATIVA* L.)

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Abstract: An investigation was carried out using 17 rice genotypes for grain yield and contributing characters to understand the association among yield components and their direct and indirect influence on the grain yield under saline condition. Analysis of variance revealed considerable variability among the genotypes for all the characters. Character association of the yield and its attributing traits revealed that significant positive association of grain yield plant⁻¹ with productive tillers hill⁻¹, length breadth ratio, straw yield, harvest index, number of grains panicle⁻¹ and 1000-grain weight. The salinity related traits viz., Na⁺: K⁺ ratio and chlorophyll content as well as days to 50% flowering expressed significant negative association with grain yield plant⁻¹. Investigation on path coefficient analysis showed that straw yield plant⁻¹ had highest direct positive effect on grain yield plant⁻¹ followed by harvest index, plant height, Na/K ratio, days to 50% flowering, 1000 grain weight, days to maturity, productive tillers hill⁻¹, number of grains panicle⁻¹, chlorophyll content. Hence, selection based on these traits could help to bring simultaneous improvement of yield and yield attributes characters under saline condition.

Keywords: Chlorophyll, Grain, Rice, Soil

PREDICTION MODELS FOR THE AREA, PRODUCTION AND PRODUCTIVITY OF THE URD OF SARGUJA DISTRICT OF CHHATTISGARH

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Abstract: Three models have been used for the study of trend analysis of the Urd for the Sarguja district. Linear Quadratic and Exponential Models has been used for Sarguja district. Present study period was 1979-80 to 2012-13, which divided into three group i.e. period- I, period-II and period-III. The value of R² indicates the efficiency of the models and the forecasted value indicates the accuracy of the models. CGR (%), CV (%) and Instability Index have been calculated for the respective periods and all three models. The studies are very necessary not only for understanding the growth trends and magnitude of fluctuations in crop production, but are also useful for scientific planning and effective implementation of agricultural developmental at different levels.

Keywords: CGR, CV, Exponential, Linear and Quadratic Models and Instability Index, etc.

ECONOMICS OF TOMATO PRODUCTION AND MARKETING IN BILASPUR DISTRICT OF CHHATTISGARH

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Abstract: The present study was conducted with a view to economics of tomato production in Bilaspur district of Chhattisgarh. The survey for this purpose was conducted in Bilha block of Bilaspur district of Chhattisgarh. The primary

data were collected from 60 randomly selected farmers from four villages for the year 2013-14 through personal interview method with the help of a pretested schedule designed for the study. The major findings of the study revealed that average the cost of cultivation of tomato was found to be Rs/ha. 33887.77. Overall cost of tomato of production was accounted Rs. 190.58/q to produce the average of 177.81 qt/ha. Farmers received net income of Rs. 55017.255 per ha. Marketable surplus of marginal, small, medium, large farms was noticed to be 96.05, 95.44, 93.58, 94.94 with an average of 94.47 per cent of the total production of tomato respectively. Extension personal should actively participate to disseminate the information of new varieties and package of practices as well as procedures of standardization and grading of produce to obtain the more benefits. The cooperative societies should be formed by farmers for better performance and achievement of tomato cultivation. The produce should be procured at to ensure benefit and risk coverage by fluctuation of prices of tomato. On the basis of outcomes of the study, it is being suggested that pests & disease resistant varieties of tomato should be grown by tomato growers.

Keywords: Cost of Production, Cost Concepts and Marketable surplus

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INSECT-PEST COMPLEX ON *PISUM SATIVUM* L. AND THEIR NATURAL ENEMIES AT PANTNAGAR

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Abstract: A pest complex of about five insect pests belonging to three orders and 3 families were recorded at Pantnagar infesting the pea var. 'Pant P-13' at different stages of crop growth in an overlapping manner. Two species each belonged to the order Lepidoptera and Diptera, whereas, Hemiptera shared with one species. All the major parts of this legume plant viz., pod/seed, leaf and stem were found to be infested. Out of five insect species, two recorded as foliage feeders, one as sap suckers, one as pod feeders and one as stem feeder. Leaf miner, *Chromatomyia horticola* was observed as the major pests on pea. During the course of investigation, three species of natural enemies were found to be associated with insect pest of pea of which *Diglyphus sp.* was recorded major one.

Keywords: Insect-pest complex, natural enemies, *Pisum sativum*

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MANAGERIAL EFFICIENCY OF SERICULTURISTS: AN ANALYSIS

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Abstract : The present study was investigated in Raigarh and Korba districts of Chhattisgarh during 2012-13. Data were collected personally from 270 sericulturists practicing tasar silkworm rearing to analyze the relationship of Managerial efficiency of sericulturists with selected independent variables. The analysis of the selected variables revealed that age, education, experience in sericulture, social participation, participation in training programme, occupation, annual income, land holding, credit availability, sources of information, contact with sericulture personnel, extension participation, level of aspiration, scientific orientation, economic motivation and knowledge about improved tasar silk cultivation were found significant relationship with managerial efficiency of sericulturists.

Keywords: Management efficiency, Tasar silkworm rearing, Sericulturists

EFFECT OF ORCHARD CULTIVATION TIME ON FLOWERING AND YIELD OF MANGO IN WESTERN INDIA

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Abstract: The present investigation was carried out at the Navsari Agriculture University Experimental Station, Paria, Gujarat, India during three years (2008-09 to 2010-11) to study the effect of ploughing time on flowering and fruiting in of mango 'Kesar'. The experiment was laid out with five treatments consisting of ploughing the orchard in the month of October, November, December, January and a control with no tillage in randomized block design with five replications. The results indicated that orchards in western parts of India may be ploughed in the month of November for higher production.

Keywords: Effect, Cultivation, Mango, Orchard

CHARACTER CORRELATION IN DIFFERENT ENVIRONMENTAL CONDITIONS FOR YIELD AND YIELD COMPONENTS IN RICE (*ORYZA SATIVA* L.)

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Abstract: Association analysis gives an idea about relationship among the various characters and determines the component characters, on which selection can be based for genetic improvement in the grain yield. Three hundred seventy nine (379) lines of F₃ progenies of cross between Swarna x IR86931-B-6 and MTU1010 x IR86931-B-6 were conducted in field of research cum instructional farm, College of Agriculture, IGKV, Raipur (C.G.). Rice crop was grown in irrigated and water stress condition rainout shelter I (ROS I) and rainout shelter II (ROS II). In irrigated condition, grain yield showed highly significant and positive correlation with plant height (0.724), total tillers (0.919) and effective tillers (0.925). Under water stress condition, effective tillers possessed significant and positive association with plant height (0.695=ROS I; 0.453=ROS II) and with total tillers (0.969=ROS I; 0.967=ROS II). Similarly, total tillers exhibited significant and positive association with plant height (0.708=ROS I; 0.518=ROS II).

Keywords: Correlation, Rice (*Oryza sativa* L.), Yield

EVALUATION OF STABILISED SILICIC ACID BASED FOLIAR SPRAY ON RICE VARIETY PANVEL-1 UNDER COASTAL SALINE SOILS OF KONAKN

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Abstract: The stabilised silicic acid was used as a foliar application to *Panvel -1* a salt tolerant rice variety under coastal saline soil condition. The treatments comprises with different intervals and quantity of stabilised silicic acid foliar spray i.e

15 DAT, 15 and 30 DAT, 15, 30 and 45 DAT and 15,30,45 and 60 DAT. The foliar spray of stabilized silicic acid was given as per treatments with manually operated knapsack sprayer. From data it was revealed that, the application foliar sprays of stabilized silicic acid significantly influenced on growth attributes and yield of rice. The treatment T₉ i.e application of four foliar sprays of stabilized silicic acid at 15, 30, 45 & 60 DAT @ 2.0 ml lit⁻¹ of water along with RDF was found to be statistically superior in achieving higher grain yield (46.50 q ha⁻¹) and straw yield (51.51 q ha⁻¹) of *Panvel-1* rice variety.

Keywords: Saline soil, Foliar spray, Silicic acid, Panvel-1, Grain yield