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SEASONAL HERBS DIVERSITY AROUND DISTILLERY SPENTWASH DISCHARGE OF DISTRICT MEERUT (U.P.)

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Abstract: The distillery spentwash contains a number of nutrients for plant growth but also heavy metals which became a serious concern for environment and human health after allowable concentration. The Importance Value Index of the species was estimated seasonally for each distillery spent wash discharge site. A total 57 species of herbaceous plants have been observed from three distilleries which belong to 28 families. Total species count was highest in rainy season and lowest in summer season although there is peak spent wash production in summer. The highest beta diversity was observed in winter season at central distillery while lowest at Daurala in summer season. The herbaceous vegetation showed a mosaic pattern which was more pronounced in rainy months than in summer and winter months. In conclusion, human population, climatic factors and concentration of industrial discharge influenced the species composition and diversity in these habitats.

Keywords: Beta diversity, Distillery spent wash, Importance Value Index, Species diversity, Species dominance.

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TRANSLOCATION HETEROZYGOSITY IN *ALOE VERA* (L.) BURM. F.

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Abstract: A population of *Aloe vera* (L.) Burm. F. (a diploid species with 2n=14 chromosomes), from village Kiharian District Jammu, J&K State (India) was studied for reduction division in male track. Of the 16 plants studied, pollen mother cells of 15 plants showed normal chromosome behavior at diakinesis and metaphase I and equal separation of chromosomes at anaphase I. Pollen viability of these plants averaged 76%. Meiosis in the remainder plant is characterized by the presence of 22% cells with multivalents at diakinesis and equal anaphasic segregations. The pollen viability of this cytotype was low (58.5%). As normal diploids and the translocation heterozygote did not show fruit and seed formation, it indicates that apart from anomalous chromosome behaviour, some other factors are also adversely affecting the reproductive potential of *A. vera*.

Keywords: *Aloe vera*, Multivalent formation, Chiasma frequency

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EFFECT OF PLANT NATURAL EXTRACT COATINGS ON POST HARVEST QUALITY AND SHELF LIFE OF TOMATO

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Abstract: The aim ofthis research is to studythe application of plant natural extracts Aloevera and neem for extending the storage period of tomato. The effect of different formulations of Aloe vera and neem based herbal extract coatings on tomatoes stored at refrigerated condition(4°C) was investigated.PLW,Firmness, total soluble solids, sensory characteristics were analyzed at regular intervals during the storage period.Tomatoes in control showed a rapid deterioration with an estimated shelf life period of 18 days. On the contrary,the coatings on tomatoes extended the shelf life up to 36days. From the results, it was concluded that the use of Aloe vera and neem based plant natural extract coating leads to increased tomato shelf-life.

Keywords: *Aloe vera*, Neem extract, Coatings, Shelflife, Tomato

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MICROALGAL DIVERSITY OF DAYYAM VAGU, A PERENNIAL RIVER OF ETTURNAGARAM WILDLIFE SANCTUARY, WARANGAL DISTRICT, TELANGANA, INDIA

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Abstract: In the present research an attempt has been made to assess the distribution pattern of Micro algal diversity of DayyamVagu, a perennial river of Etturnagaram Wildlife sanctuary, Warangal District, Telangana, India. Comparative study of various stations of the river is unique. This type of study is new to this perennial river. As the river is passing through the entire stretch of the sanctuary, it is quite possible that there is some difference in algal composition among the different river stations. This paper deals with the micro algal diversity of DayyamVagu which passes through the Etturnagaram wildlife sanctuary of Telangana. This study was carried out during the year 2016.The samples were taken from four fixed stations of the river during the dry season of the year. During the study period 48 species of algae were observed from various stations, during the year 2016. In the present study 12 Bascillariophyceae, 19 Chlorophyceae, and 17 Cyanophyceae members were observed.

Keywords : Wildlife sanctuary, Perennial River, Micro algae, Diversity

GROWTH, FLOWERING AND YIELD OF CUCUMBER (*CUCUMIS SATIVUS* L.) AS INFLUENCED BY DIFFERENT LEVELS OF NAA AND GA_3

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Abstract: An experiment was conducted to assess the effect of various doses of GA_3 and NAA on growth, flowering, yield and yield contributing parameters in cucumber. Total eight treatments of the growth regulators viz, GA_3 10, GA_3 20, GA_3 30 ppm, NAA 50, NAA 100, NAA 150 ppm, GA_3 20 + NAA 100 and control were tried in Randomized Block Design and replicated thrice. Out of these, an application of combined dose @ GA_3 20 ppm + NAA100 ppm was found significantly superior in terms of growth, flowering and yield and yield attributing parameters i.e. vine length plant^{-1} (cm), number of primary branches plant^{-1}, number of leaves plant^{-1}, length and width of longest leaf (cm), days to first flower formation, number of male and female flower plant^{-1}, sex ratio, number of fruits plant^{-1}, length and width of fruit (cm) at alternate days, length and width of fruit (cm) at five days, weight of fruit^{-1}, fruit yield plant^{-1}, fruit yield plot^{-1} and yield (qha^{-1}) as compared to control and other applied treatment. Overall the impact of above observation, the highest yield (173.60 qha^{-1}) of tender green was recorded with a combined dose of GA_3 20 ppm + NAA100 ppm and minimum yield (150.53 qha^{-1}) of tender green under control.

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CONSTRAINTS FACED BY THE FARMERS IN ADOPTION OF BIO-FERTILIZERS AND MANURE IN RICE CROP

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Abstract: Being the important crop of Chhattisgarh, rice occupies major share in the rural economy in general and farmers economy in particular. This crop is cultivated here on varied agro-ecological situations. The inputs, particularly nutrients used in cultivating rice are mostly imbalanced with the dominancy of chemical fertilizers causing soil sickness and poor fertility status. Several bio-fertilizers and manures are recommended for inducing as input in rice cultivation but so far the use of these materials is very low and scanty particularly in Chhattisgarh region. Looking to the significance this investigation was conducted in the three villages of Raipur district with 120 respondents. The findings shows that majority of the respondents were belonged to medium-old age group with satisfactory literacy level. The respondents were dominated by the population of other Backward Castes having 5-8 family members. Agriculture with small and marginal size of and holding and poor irrigation availability was common. Medium level of economic motivation and risk orientation was observed. The overall socio economic status of the respondents was mostly low. The knowledge was found quite high but adoption of bio-fertilizers and manures was poor. The important reasons for non adoption of bio fertilizers in rice cropping were poor or non availability, non visibility of results, un-assured quality, lack of knowledge and high cost. Use of compost and FYM were mostly affected by its poor availability in time and required quantity. The suggestions shows that respondents required assured quality and timely availability of bio fertilizers and manures for its higher adoption with credit facility and subsidy.

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EFFECT OF INTEGRATED NUTRIENT SUPPLY AND INTERCROPPING OF FODDER CROPS ON PHYSICAL PROPERTIES OF SOIL IN FODDER MAIZE + LEGUMES INTERCROPPING SYSTEM

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Abstract : A field experiment was conducted during the winter seasons of 2008 -09 and 2009-10 at Raipur Chhattisgarh, to find out the effect of integrated nutrient supply and intercropping of fodder crops on physical properties of soil in fodder maize + legumes intercropping system. Integrated nutrient supply with application of 50 % RFD + 10 tonnes FYM + $ZnSO_4$ was recorded significantly lowest value of soil bulk density and higher value of total porosity and water holding capacity. Intercropping of maize + lucerne (1:1) proved most efficient system resulting significantly lower value of bulk density but at par with Maize + Berseem (1:1) and higher value of total porosity and water holding capacity as compared to other intercropping system.

Keywords: Integrated nutrient supply, Maize + fodder legumes, Water holding capacity

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FARMERS´ PERCEPTION TOWARDS USE OF MICRONUTRIENT (ZINC) IN RICE BASED CROPPING SYSTEM

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Abstract: Rice is the important food for more than 60 per cent of the global population. This crop is cultivated on various agro-ecological situations using different methods. Rice based cropping system is dominating in the high rainfall areas with mono-cropping, especially in the rain fed areas. The major limitation of rice-fallow system, if prevail for long time is the deficiency of nutrients in soil, zinc is one of them. Application of zinc is dependent on various aspects including farmers' perception. Therefore this study was undertaken to know the awareness, perception and suggestions of farmers for adequate use of zinc in rice farming. The study was conducted in Raipur district by interviewing 160 respondents from four villages. The findings shows that farmers were less aware about the deficiency symptoms and necessity of zinc application, while enough awareness were reported for time, method and quantity of zinc required in rice crop. Majority of the respondents favorable perceived about the application of zinc and many of them required subsidy and skill training for its increases use, especially in the deficit areas.

Keywords: Micronutrient, Perception, Zinc application

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PRODUCTION AND QUALITY OF GREEN FODDER BERSEEM (*TRIFOLIUM ALEXANDRIUM* L.) VARIETIES INFLUENCED BY CUTTINGS AND BIO-FERTILIZERS

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Abstract : A field experiment was conducted during the *rabi* season of 2012 at research farm on Janta Vedic College Baraut (Baghpat) U.P. to find out the most effective green fodder yield production and quality combination among the different cuttings, bio-fertilizers as well as the Bharti Kaveri (easily available of the farmer in local market) and Pusa Mascavi varieties. The results indicate that a Cutting 5.5cm.upper from the ground, Rizobium+ Phosphate Solubilizing Bacteria and Pusa Mascavi variety significantly enhanced the plant height (29.21cm, 28.12cm.and26.93cm.) No. of leaves/ plant (26.22, 24.99 and23.93) branches/ plant (7.88, 7.50 and7.17) dry matter accumulation/plant (1.863g,1.775g and1.700g)crude protein% in green fodder(20.13,21.30 and 20.64)and green fodder yield (157.33q/ha, 153.88q/ha and 151.25q/ha).

Keywords: Berseem, Cutting, Bio-fertilizers, Varieties, Quality and green fodder production