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A PRELIMINARY STUDY ON THE MOSS FLORA OF KISHTWAR, J&K (NORTH-WEST HIMALAYA)

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Abstract: This paper is the first attempt to enlist the moss flora of Kishtwar (North-West Himalaya). A total of 17 mosses belonging to 8 orders, 12 families and 17 genera have been collected from diverse habitat, altitude and substrate pH.

Keywords: Hypnobryales, North-West Himalaya, Jammu & Kashmir state, Kishtwar, Moss flora.

SHARE OF IPM COMPONENTS INVOLVED IN PADDY PLANT PROTECTION AT DIFFERENT VILLAGES OF DHAMTARI DISTRICT IN CHHATTISGARH

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Abstract: The study was conducted at the prone area of different villages in Dhamtari district. During 2009, the average cost of IPM components involved with respect to paddy plant protection was ranged from Rs. 47.94 to 1931.21. The maximum cost of the chemical practices (Rs. 1931.21) was recorded followed by cultural practices (Rs. 2396.89) and minimum (Rs.47.94) in biological practices with the cost of share was 68.92, 20.30 and 1.71 percent, respectively. Whereas, during 2010, the Average cost of IPM components was ranged from Rs. 109.07 to 2520.92. The maximum cost of the chemical practices (Rs. 2520.92) was recorded followed by cultural practices (Rs. 769.26) and minimum (Rs.109.07) in biological practices with the cost of share was 63.28, 13.54 and 3.46 percent, respectively. Pooled cost of paddy plant protection was ranged from Rs. 109.07 to 2520.92. The maximum cost of the chemical practices (Rs. 2520.92) was recorded followed by cultural practices (Rs.769.26) and minimum (Rs. 109.07) in biological practices with the cost of share was 68.85, 12.56 and 2.98 percent, respectively. Descending order of the average cost of different practices of IPM components can be ranked as biological practices < physical practices < cultural practices < chemical practices. On the basis of information collected from the contact farmer through personal interview, some possible reasons comes out which may be the maximum respondents use of chemical practices on paddy cultivation which causes several problems such as development of insecticide resistance, environmental pollution and undesirable effects on non-target organisms.

Keywords: Cost of paddy cultivation, Plant protection cost, Cost of IPM component, Share of IPM cost in Dhamtari district

EFFECT OF MOISTURE CONTENT ON SOUND ABSORPTION CO-EFFICIENT OF SOME INDIAN TIMBERS

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Abstract: Wood and wood-base materials frequently are used as interior finish in buildings where sound absorption (reduction of the level of sound generated in a room, within that room) needs to be estimated to compare the effectiveness of different species. Various wood based materials of three Indian timbers (*Dalbergia sissoo*, *Cedrus deodara* and *Populus deltoids*) were evaluated for acoustical absorption using the Bureau of Indian Standard (I.S: 10420 -1982) impedance tube method to determine the effect of moisture content based on their specific gravity on sound absorption. Absorption produced by different species at 25 and 35 percent moisture content at room temperature was affected. *Cedrus deodara* species shown best value for sound absorption coefficient at the frequency level of 1000 hertz while the *Populus deltoids* shown minimum values of sound absorption coefficient.

Keywords: Absorption, *Cedrus deodara*, Specific gravity

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CROP WEATHER RELATIONSHIP OF SOYBEAN VARIETIES UNDER DIFFERENT DATES OF SOWING IN CHHATTISGARH PLAIN ZONE

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Abstract: Soybean (*Glycine max* (L) Merrill.) is one of the leguminous oilseed crops in tropical and sub-tropical regions of India and is one of the classical short day plants and most of its genotypes respond as quantitative short day plant. Soybean varieties “JS-93-05”, JS-9752, and JS-335 were grown as a test crop and recommended dose of nitrogen, phosphorus and potassium *i.e.*, 20:60:40 kg ha⁻¹, respectively. The crop was shown on 10 June, 20 June and 30 June 2014 after the onset of monsoon maintaining spacing of 30 cmX10 cm using a certified seed rate of 75 kg ha⁻¹. At 25 DAS, significantly higher dry matter observed under D1 (10 June) which was found at par to D3 (30 June). Maximum crop growth rate was found in 10 June and the lowest crop growth rate was observed in 20 June. Highest accumulated growing degree day, Accumulated Photo thermal units (PTU), Accumulated Helio thermal units (HTU) and heat use efficiency was observed under 10th June sown variety JS-9752 at maturity stage (2057.2) and the lowest GDD recorded with variety JS- 335 under D3 (30 June) (1615.8).

Keyword: Soybean varieties, Oil seed crops, Weather

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ABUNDANCE OF ZOOPLANKTON POPULATION AND FISH PRODUCTION IN INTEGRATED FISH LIVESTOCK FARMING SYSTEMS

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Abstract: Zooplankton occupies a central position in the food webs of aquatic ecosystem. They do not only form an integral part of the lentic community but also contribute significantly, the biological productivity of the fresh water ecosystem. Very high zooplankton density was recorded in two integrated systems *i.e.* the duck-fish and chicken-fish integrated farming. The zooplankton population was analysed in terms of density, species composition, and seasonal abundance. Both the integrated ponds, supported luxurious population of zooplankton almost during the entire study period. A total of 22 and 25 species were recorded from duck-fish and chicken-fish integrated ponds, respectively. The total fish production recorded from the ponds was also high. The present findings suggest that integrated farming systems support large population of natural fish food organisms which results in high growth rate and overall production of fish.

Keywords: Fish production, Farming system, Population, Zooplankton

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SEASONAL ABUNDANCE AND POPULATION DYNAMICS OF THE *SCIRTOTHRIPS DORSALIS* AND *APHIS GOSSYPHII* ON CHILLI

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Abstract: The experiment was conducted during *rabi*-summer season 2010-11 at Mango orchard, Department of Horticulture, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G). The thrips, *Scitrothrips dorsalis* and aphid, *Aphis gossypii* were recorded as major insect pests in chilli crop. The infestation of thrips began in the first week of February (5th Standard Meteorological Week) and reached to its peak in 3rd week of March. (12th SMW), that of aphid began in the first week of February (5th SMW) and reached its peak in the 2nd week of February (6th SMW). The abiotic factors of the environment i.e. evening relative humidity had significant negative correlation with the population of thrips. The aphid population was negatively correlated to minimum temperature and positively influenced by morning relative humidity.

Keyword: Population dynamics, Chilli thrips, Aphid

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IMPACT OF VARIOUS FUNGICIDES AGAINST THE ERGOT DISEASE OF SORGHUM CAUSED BY *CLAVICEPS* SP. UNDER SOUTH GUJARAT CONDITION OF GUJARAT

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Abstract: Sorghum (*Sorghum bicolor* L.) is one of the main staples for the world's poorest and most food-insecure people commonly known as Jowar. It grows well in both summer and winter, and is thus both a *rabi* and *kharif* crop. The disease reduces yield through poor seed set and causes harvesting difficulties due to sticky honeydew on seed heads and also grain quality distress heavily due to the presence of the fungal bodies. An experiment was conducted at Sorghum Research Station, NAU, Surat (Gujarat) to find out the most effective fungicide for the control of ergot disease in sorghum. From the result analysis, the ergot incidence was found significantly lower in the treatment of Hexaconazole 5% SC @ 0.005% (18.30 % & 16.85 %) respectively in both the years.

Keywords: Sorghum, Ergot, *Claviceps* sp., *Sorghum bicolor*, Fungicides, Treatment

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GENETIC STUDIES ON HERITABILITY AND GENETIC ADVANCE FOR DROUGHT TOLERANCE IN PEARL MILLET GERMPLASM

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Abstract: The present study aims to reveal the importance of quantitative traits and genetic variability existing in the 76 pearl millet germplasm accessions. The coefficient of variation at phenotypic and genotypic levels were high for root dry

weight followed by green fodder yield per plant, root volume, dry fodder yield per plant, grain yield per plant, ear bearing tillers per hill, green fodder yield per plot, dry fodder yield per plot, grain yield per plot, relative injury, leaf area duration, number of grains per ear head, ear head length and plant height and moderate for test weight, harvest index, ear head girth and root spread while the traits, specific leaf area followed by chlorophyll stability index, days to 50% flowering SCMR, leaf temperature and days to maturity showed low PCV and GCV. From the results, high heritability coupled with high genetic advance observed for relative injury, dry fodder yield per plot, ear bearing tillers per hill, dry fodder yield per plant, root volume, grain yield per plant, leaf area duration, root dry weight, green fodder yield per plot, green fodder yield per plant, number of grains per ear head, ear head length, plant height, test weight and grain yield per plot which indicates the preponderance of additive gene effects in controlling these traits, early and simple selection could be exercised due to fixable additive gene effects.

Keywords: Drought, Pearl Millet, Variability, Heritability, Genetic Advance

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IMPACT OF DIFFERENT ORGANIC MANURES ON YIELD PARAMETERS OF WATERMELON [*CITRULLUS LANATUS* (THUMBS) MANSF.] CV. 'SUGAR BABY' UNDER NORTH GUJARAT CONDITION

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Abstract: Watermelon [*Citrullus lanatus*] is a cucurbitaceous crop and is green vegetable, but in the ripe stage as refreshing fruit. Application of recommended dose of FYM @ 20 t/ha + NPK (100-50-50 kg NPK/ha) recorded the maximum fruit diameter (39.95 cm) which was followed by treatment of 100 % N of recommended dose in form of vermicompost (37.76 cm). While, the superior treatment gave highest Number of fruits per vine (3.38), Fruit weight/kg (3.19), Yield per vine kg (10.78) and Yield per ha (53.91).

Keywords: Watermelon, *Citrullus lanatus*, Neem cake, Vermicompost, FYM, Castor cake, Poultry manure

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CONSTRAINTS IN ADOPTION OF IMPROVED TOMATO PRODUCTION TECHNOLOGY

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Abstract: Adoption of any production technology depends on the availability of the essential resources. The present investigation was carried out in the six purposively selected villages of Pathalagon Block of Jashpur district. Seventy two respondents were selected randomly and personally interviewed with the help of the structured interview schedule. The study revealed that the all the seventy two tomato growing farmers (100 %) reported that they were not getting desired price for their produce and 86.11 per cent respondent highlighted the lack of transportation facilities. The same percentage of the respondents (86.11 %) also encountered with the problem of non-availability and unreliable cost of fertilizers. 77.77 and 52.77 per cent respondents reported the problems like non-availability of information related to improved tomato production technology at the right and non-availability of insecticides & fungicides respectively. Whereas only 27 tomato growing farmers were (37.5 %) reported lack of capital as constraints.

Keywords: Tomato Cultivation, Adoption, Constraints and improved production practices

A CASE STUDY OF HEAVY METALS OF BAGAD RIVER FROM GAJRAULA

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Abstract: The aim of this study is to determine heavy metals in contaminant drinking water of Bagad river (A tributary of Ganga). It is a micro level study of Gajraula town of Amroha district of U. P. which will be useful in studying and understanding impact of water pollution on human, residing in any region of the country in terms of health status. The chemistry of drinking water commonly has been cited as an important factor in many diseases. Metal extraction is an important industry for our modern way of life. However, all phases in the life of a mine can discharge metals to rivers, estuaries, streams and lakes. Metal dissolve in water and are easily absorbed by fish and other aquatic organisms. Small concentration can be toxic because metals undergo bio-concentration, which means that their concentration is an organism is higher than in water, metal toxicity produces adverse biological effects on an organism's survival. Metal can be lethal or harm the organism without killing it directly. Adverse effects on an organism is activity, growth, metabolism and reproduction are examples of sub lethal effects. These diseases are apparently related to contaminant drinking water with heavy metals such as Zn, Hg, Cd, Cu, Ni, and Cr. Renal failure is related to contamination drinking water with lead and cadmium, liver cirrhosis to copper and molybdenum, hair loss to nickel and chromium, and chronic anemia to copper and cadmium.

Keywords: Heavy metals, Water, River, Ganga,

ASSESSMENT OF CROPPING SYSTEMS TOWARDS FARMERS IN BALOD DISTRICT OF CHHATTISGARH STATE

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Abstract: This study was focused on assessment of cropping systems towards farmers in Balod District of Chhattisgarh state. In this context, the present study was carried out in Balod, Dondi and Gunderdehi blocks of Balod District (Chhattisgarh) during the year 2014-15. The findings indicate that the majority of the respondents (29.17%) had follow the Rice-Wheat cropping system and most of the respondents (83.33%) had intensity of cropping of more than 100 per cent. Area under existing cropping systems shows that total 252.60 ha area is used by the big farmers for different cropping systems, out of which the cropping system Rice-Wheat occupies 17.97 per cent of area as majority. area under existing cropping systems shows that total 252.60 ha area is used by the big farmers for different cropping systems, out of which the cropping system Rice-Wheat occupies 17.97 per cent of area as majority.

Keywords: Cropping system, Cropping intensity, Irrigation

PROFILE CHARACTERISTICS OF TOMATO GROWING FARMERS OF JASPUR DISTRICT OF CHHATTISGARH STATE

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Received-10.10.2015, Revised-20.10.2015

Abstract: The present investigation was carried out in the six purposively selected villages of Pathalagon Block of Jashpur district. Seventy two respondents were selected randomly and personally interviewed with the help of the structured interview schedule. The study revealed that the majority of the respondents were in the young age group (up to 35 years) with high school level of education. Majority of the respondents belongs to medium size families and they had maximum experience 11 to 20 years in tomato cultivation and most of the respondents were belonging to schedule tribe category of caste. Regarding the socio-economic characteristics, the study revealed that majority of tomato growers (47.22%) had big size of land holding and only 12.5 percent belonged to small farmer category. The majority of them (34.72%) belonged to annual income category of up to Rs. 25,000 while only few had more than Rs 75,000 income per year. Majority of respondents i.e. 52.77 percent had high level of economic motivation and only 8.33 percent respondents had low level of economic motivation about tomato production technology.

Keywords: Tomato Cultivation, Socio-economic, Characteristics