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## AN ISOLATION STUDY OF MICROORGANISM FROM DIFFERENT STAGE OF *IN VITRO* PROPAGATION

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**Abstract:** Fungi and bacteria contaminants were found associated with the cultured plant materials. The bacterial isolates include *staphylococcus aureus*, *Gram positive*, *staphylococcus epidermis*, *staphylococcus aureus*, *Gram positive*. And fungal contaminants include *Fusarium sp.*, *Aspergillus niger*, *chaetomium sp.*, *Acremonium sp.*, *Aspergillus sp.* Microbes are living, biological contaminants that can be transmitted by infected people, animals and indoor air, and they can also travel through the air and get inside homes and buildings. It was discovered that the microbial population is higher in the preparatory room than the incubating rooms. This might be unconnected with the fact that more people frequent the preparatory room. Flanagan and Morey (1996), reported that presence of bacteria in a room indicate the presence of people and their levels may get high when the building is heavily populated. Consequently, adequately training of operators and high standards laboratory cleanliness is a vital pre-requisite to successful plant tissue culture. Most of these bacteria contaminants have been reported to increase culture mortality and the presence of latent infections can result in variable growth, tissue necrosis, reduced shoot proliferation and reduced rooting (Kane, 2003) The fungi were identified on the bases of morphological characteristic such as colony form and color, type of mycelium, fruiting bodies and spores (Commonwealth Mycological Institute Descriptions of Pathogenic Fungi and Bacteria). The present research study aims to a) examine the possible bacterial contamination of plant tissue cultures initiated from medicinal plants of Sinai, b) identify the bacterial species contaminating those plant cultures, c) determine the antibiotic sensitivity of those covert bacteria and d) suggest the best strategy to minimize loss of plant materials during short- and long-term cultures.

**Keyword:** Contamination, Culture, Fungi, Bacteria

## BIOMASS PRODUCTION AND CARBON STOCK POTENTIAL UNDER HOME GARDENS OF KASHMIR HIMALIYA

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**Abstract:** Home garden agroforestry systems are suggested to hold large potential for climate change mitigation and adaption. This is due to their multifunctional role in providing income, food and ecosystem services while decreasing pressure on natural forests and hence saving and storing carbon, the study was designed to quantify biomass carbon stock and carbon sequestration potential under home gardens. The results of the study revealed in five tree crop combinations. The maximum (104.86  $\text{tha}^{-1}$ ) biomass production was found under treatment T<sub>1</sub> (Salix + Poplar + Beans + Kale + Apple) followed by (63.03, 59.53, and 52.48  $\text{tha}^{-1}$ ) in treatment T<sub>3</sub>, T<sub>4</sub>, and T<sub>1</sub>, and minimum (44.53  $\text{tha}^{-1}$ ) in treatment T<sub>1</sub>, where as carbon stock and carbon sequestration follows same trend as its simply the derivation of biomass. The results from this study will help to estimate levels of atmospheric CO<sub>2</sub> that could be sequestered by tree based land use systems for this climatic region of Kashmir Himalaya, therefore, an attempt has been made to collect the data on biomass, carbon stock and carbon sequestration potential in selected land use systems. The present findings may be used as baseline information for developing prediction models for probable effects of home gardens, future intervention and sustainable management in this region.

**Keywords:** Agroforestry, Land use system, Biomass, Carbon stock, Sequestration

## **EFFECT OF DIFFERENT TILLAGE AND WEED MANAGEMENT PRACTICES ON GROWTH AND YIELD OF CHICKPEA (*CICER ARIETINUM* L.)**

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**Abstract:** The field experiment was conducted at the JNKVV, Jabalpur (M.P.) during rabi seasons of 2013-14 and 2014-15 to study the different tillage and weed management methods on growth product and yield of chickpea. The experiment was laid out in split-plot design with three replications. Main plot treatment consisted of five tillage practices viz., T<sub>1</sub>- Zero tillage, T<sub>2</sub>- Reduced tillage, T<sub>3</sub>- Conventional tillage, T<sub>4</sub>-Broadcasting and T<sub>5</sub>-Bed planting. There were four sub-plot treatments of weed management viz., W<sub>1</sub>-Pendimethalin PE @ 1 kg ai./ha, W<sub>2</sub>-Pendimethalin + Imazethapyr (Vellor) @ 1 kg ai./ha PE, W<sub>3</sub>- Oxyfluorfen @ 100 gai./ha PE, and W<sub>4</sub>-Unweeded check. Chickpea var. JG14 was shown on 15 December in both the years in rows 30 cm. apart keeping a seed rate of 80 Kg./ha Amongst the tillage practices, conventional tillage and bed planting recorded maximum growth and yield attributes and grain yield of chickpea var. JG – 14 (12.03 to 13.02 q/ha). Amongst the herbicidal treatments, Pendimethalin + imazethapyr were found most effective in controlling existing weed- flora and recorded maximum growth, yield attributes and grain yield upto 13.09 q/ha.

**Keywords:** Chickpea, Growth, Management, Tillage, Weed

## **GROWTH OF MEDICINAL PLANT RESOURCES AS PER THE GEOGRAPHICAL CONDITIONS OF MEERUT DISTRICT, UTTAR PRADESH**

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*Received-10.04.2019, Revised-05.05.2019*

**Abstract:** Usefulness of medicinal plants is well documented since the time immemorial. These plants are found and distributed in throughout India and abroad. Although, their density as well as diversity may variable from region to region and habitats depending upon their geographical conditions which include soil, rain, temperature, topography etc. The body parts of these medicinal plants are used for curing different types of serious diseases such as tuberculosis, leprosy, asthma, piles, dengue fever, typhoid fever, blood bleeding etc. in human beings, domestic animals and other wild animals. Keeping this in view an extensive survey work was carried out during Jan 2019 – March 2019, in District Meerut of Uttar Pradesh state of India, for the medicinal plant resources in district Meerut Uttar Pradesh. Present paper advocated to local peoples (especially of rural areas), for protection of these plants and secure their life for better survival.

**Keywords:** Growth, Medicinal plants, Medicines, Meerut district

## **SCREENING OF MICROBIAL CONSORTIA ON SORGHUM CROP UNDER GREEN HOUSE CONDITIONS**

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**Abstract:** Screening of three different plant growth promoting microbial consortia was carried under green house conditions on sorghum (CSV-27). Different plant growth parameters like plant height, shoot weight, root weight, total dry weight and nutrient uptake were estimated during the screening. Microbial population was estimated at different intervals of crop growth. Microbial consortia-3 (*Azotobacter*, *Azospirillum*, P-solubilizer, K-releaser, Zn-solubilizer and PGP isolate) inoculated treatment T<sub>3</sub> performed better and improved all the plant growth parameters like plant height, shoot weight, root weight, total dry weight and nutrient uptake compared to the control and other two microbial consortia inoculated treatments.

**Keywords:** Microbial consortia, *Azotobacter*, *Azospirillum*, P-solubilizer, K-releaser, Zn-solubilizer

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## EXOTIC MEDICINAL PLANTS USED BY TRIBAL POPULATION OF SIRUVANI REGION, COIMBATORE – AN ETHNOBOTANICAL SURVEY

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**Abstract:** The exotic underutilized plants with diverse source of medicinal properties contribute colossal benefits in the daily livelihoods of the mankind. The present study aims and reveals about the vast wealth of ethnomedicinal properties and the uses of wild underutilized plants located in the siruvani tribal tract of Coimbatore district in Tamil Nadu. The investigation was performed by collection of underutilized plants with medicinal properties, personal observations and steered field walks in consultation with local tribal elders of the study area. The paper highlights some new and less known ethnomedicinal uses of 25 underutilized plants by the tribes of siruvani. Since, the tribal population believes that many dreadful health infringements can be cured by locally available medicinal plant source and prime importance was provided to popularize the imperative source of traditional herbal value. Thus, the present study emphasizes on documentation of medicinal properties from traditional underutilized plant sources which remunerate the welfare of humanitarian.

**Keyword:** Ethnomedicinal, Underutilized, Siruvani, Tribal, Traditional

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## ASSOCIATION AMONG VARIOUS COMPONENTS OF RESISTANCE TO *PYRICULARIA GRISEA* IN FINGER MILLET

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**Abstract:** Blast of finger millet incited by the fungus *Pyricularia grisea* is considered as a major limiting factor in the global finger millet production because of its wide distribution and destructiveness under favourable conditions its cause severe yield losses upto 80-90%. Significant correlation among different components of partial resistance was observed. Neck blast severity was positively correlated with linear necrotic area ( $r=0.949^*$ ), coefficient of infection ( $r=0.993^*$ ), apparent infection rate per unit per day ( $r=0.541^*$ ) and AUDPC values ( $r=0.958^*$ ), whereas negative correlation was recorded between neck blast severity and incubation period ( $r=-0.917^*$ ). In the tested finger millet genotypes, final finger blast severity varied 6.3 to 39.9% with a mean of 18.7%. Low values of finger blast severity, coefficient of infection, percent finger infection, apparent infection rate, area under disease progress curve values were recorded in finger blast resistant genotypes whereas higher values were noted in susceptible to highly susceptible genotypes.

**Keywords:** Finger millet, *Pyricularia grisea*, Partial resistance, Neck blast

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## **SCREENING FOR RESISTANCE TO *MACROPHOMINA* ROOT ROT IN ADVANCED BREEDING LINES OF SESAME**

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**Abstract:** Root rot caused by *Macrophomina phaseolina* is the serious disease in sesame. The incidence of *Macrophomina* rot leads to great problems at such magnitude so that the area under sesame cultivation is declined gradually. Twenty four advanced breeding lines were screened for *Macrophomina* root rot under sick plot conditions. The disease severity of root rot ranged from 17.4% to 41.6%. Advanced breeding lines viz., VS 16 004 and VS 16 008 recorded less disease incidence of 17.4% and 17.6% respectively, whereas the susceptible check VRI Sv 1 recorded the maximum disease incidence of 41.6%. However most of the lines were found to be moderately susceptible to root rot.

**Keywords:** Sesame, Screening, Root rot, *Macrophomina*

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## **EFFECT OF BIOSIL-DE APPLICATION AT DIFFERENT LEVEL AND TIME ON RICE (*ORIZA SATIVA*) UNDER RAINFED CONDITION OF KYMORE PLATAEU AND SATPURA HILLS OF M.P.**

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**Abstract:** Rice (*Oryza sativa* L.) is the most important cereal food crop in the world providing major source of food energy for more than half-human population. About 80% of the rice is produced and consumed in Asia, where rice is the integral part of culture and tradition. In India, it is cultivated in 101.7 m ha with production of 117.3 MT and productivity of 1143 kg/ ha (Economic survey of India 2012-13). In Madhya Pradesh, it is cultivated on 1.76 m ha with annual production of 3.02 MT and productivity of 1807 kg/ha (MP, Krishi net, 2012 -13). Low and declining crop response to applied nutrients through chemical fertilizer are the result of continuous nutrient mining, because of indiscriminate use of fertilizers, leading to an imbalance of soil nutrients by 2020. Thus, there is an urgent need to increase the rice production under the deteriorating resource base such as land, labour, water and other inputs. Direct seeded rice cultivation is popular and best alternative of transplanted rice in India. It is practiced nearly in one third of total rice area of the country as transplanting is a labour intensive and costly practice. The natural sources of nutrients such as FYM, vermicompost, green manures and such other organics provide to be a cheapest source of macro as well as micro plant nutrients. They also provide an opportunity to proliferate microbes, hence, create a favorable environment to soil and plants resulted in enhanced the productivity of soil water and crop. In nutrient recycling from such organic sources, the soil microorganisms play an important role within the soil ecosystem. The organic sources of nutrients Viz. FYM, vermicompost, Neem cake, crop residue, poultry manure, spent

wash, fly ash etc. are mostly drawn from local resources and developed locally which are easy to handle and proved cheaper to others.

**Keywords:** Application, Biosil-de, Rice, Yield attributes

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## **TECHNOLOGY DISSEMINATION AND CREATE AWARENESS ABOUT INNOVATIVE AGRICULTURAL TECHNIQUES**

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**Abstracts:** This study was carried out in adopted and contact village of Dhamtari district of Chhattisgarh State to assess the technology under KVKs activities. Adopted farmers were considering as respondents for this study. Data were collected through personal interview and analyzed with the help of suitable statistical methods. The analysis of the results showed that majority of the respondents response was effectively and they had convinced pertaining to improved agricultural techniques under KVKs activities.

**Keywords:** Production, Technology assessment, Demonstration