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SHORT COMMUNICATION

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EFFECT OF WATER STRESS ON YIELD COMPONENTS OF IRANIAN WHEAT LANDRACES UNDER IRRIGATED, RESTRICTED IRRIGATED AND RAIN-FED CONDITIONS

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Abstract: Drought stress is one of the most important environmental factor retard the formation of the yield components which are most actively developing at the time of stress which results in 17% to70% of grain yield. The aim of present study was to investigate the effect of water stress on morphological traits of 27 Iranian landraces along with commercial relevant checks under irrigated, restricted irrigated and Rain-fed conditions. These lines were selected on the basis of minimum reduction of vigor index under water stress induced by Polyethylene glycol (6000) as compared to control lines. A field experiment was carried out at experimental area of Department of Plant Breeding & Genetics, Punjab Agricultural University Ludhiana, Punjab during 2016 with three replications. On the basis of performance of Iranian lines under field conditions these three lines IWA 8600064, IWA 8600179 and PETTERSON ML68-10 are considered as water stress tolerant.

Keywords: Drought stress, Iranian landraces, Yield parameters

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ISOLATION AND CHARACTERIZATION OF NITROGEN FIXING *PAENIBACILLUS* SPP ISOLATED FROM DIFFERENT RHIZOSPHERIC SOIL SAMPLES COLLECTED FROM DIFFERENT PLACES OF ANDHRA PRADESH

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Abstract: The isolation for nitrogen fixing *Paenibacillus* spp remains poorly explored. In this study, the endospore-forming *Paenibacillus* strains were isolated from rhizospheric soil samples of sorghum collected from different places of Andha Pradesh. A total of twenty eight nitrogen fixing *Paenibacillus* strains were isolated based on heat treatment at 70 ^{0}C for 10 minutes and growth on nitrogen free media. Two reference strains and all the twenty eight isolates took 3-4 days to show small to medium, circular, milky white colonies with entire margin. Morphology of two reference *Paenibacillus* strains and all the twenty eight isolates were found to be gram positive, endospore forming, rod shaped and without any pigmentation. The 28 *Paenibacillus* isolates and two reference strains were tested for different biochemical tests. Results revealed that 28 *Paenibacillus* isolates showed similar results to that of the reference stains. Therefore the 28 isolates were confirmed as *Paenibacillus* isolates.

Keywords: Rhizosphere, isolation, Characterization, Endospore, *Paenibacillus* spp.

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GENETIC ANALYSIS FOR YIELD AND ITS ATTRIBUTES IN F_3 GENERATION IN BLACKGRAM (*VIGNA MUNGO* (L.) HEPPER) GERMPLASM

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Abstract: The present investigation was prevailed to examine the 28 blackgram genotypes along with one check (T-9) to study the Genetic analysis for yield and its attributes in F_3 generation in black gram. Analysis of variance showed highly significant differences among 28 blackgram genotypes all the 13 quantitative characters studied. Maximum genotypic and phenotypic variance was recorded for biological yield/plant, plant height and harvest index. Maximum GCV and PCV were recorded for number of economic yield/plant, no of clusters per plant and seed yield /plant. High genetic advance was recorded for plant height, harvest index. High heritability coupled with high genetic advance as percentage of mean was recorded for no of pods/plant. Maximum phenotypic and genotypic path analysis was observed in plant height and harvest index.

Keywords: Blackgram, Yield attributes, Heritability, Genetic advance, Correlation coefficient analysis

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ISOLATION OF YEASTS, LACTIC ACID BACTERIA AND ACETIC ACID BACTERIA FROM THE NATURAL SOURCES AND THEIR BIOCHEMICAL CHARACTERIZATION FOR BEVERAGE PRODUCTION FROM TOMATO

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Abstract: Yeasts, Lactic acid bacteria and Acetic acid bacteria were isolated from different natural sources like apple, banana, grapes, orange, tomato, jasmine, papaya, guava, milk, curd, fermented meat and honeybees. Totally 10 isolates of yeast, 7 isolates of lactic acid bacteria and 6 isolates of acetic acid bacteria were obtained. Colony and cell morphology of these isolates were studied and biochemical tests like fermentation of sugars, starch hydrolysis, urease test and acid production were carried out and AY isolate of yeast, CL_1 isolate of lactic acid bacteria and BA isolate of acetic acid bacteria were selected for beverage production.

Keywords: Beverage production, Bacteria, Isolation, Tomato

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ETHNOMEDICINICAL USES OF *MORINGA OLEIFERA* LAM. BY THE PEOPLE OF BARGARH DISTRICT (ODISHA)

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Abstract: The present paper highlights on the study of a multifarious drug plant *Moringa oleifera* Lam. which is most commonly known as 'Drumstick tree' belongs to family Moringaceae. Nutritionally and medicinally *Moringa* is very rich plant species. All parts of the tree are edible and have long been consumed by humans. It is widely cultivated due to its young pods and leaves used as vegetable. Drumstick tree is multi-utility ethnomedicinal plant used by the tribals and other community people for the treatment of various diseases and ailments.

Keywords: Ethnomedicine, *Moringa oleifera*, People, Bargarh District

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ESTIMATION OF TREE SPECIES DIVERSITY INSIDE CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT, PARALAKHEMUNDI CAMPUS, BY USING SIMPSONS DIVERSITY INDEX

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Abstract: Tree population is the fundamental source to stabilize the changes of the local environment, due to the increase in population. Urbanization is the cause to alter the habitat, climate, hydrology, and primary production of a local area. This paper has attempted to present a list of tree species and its diversity in the university campuses of, Centurion University of Technology and Management, Paralakhemundi. Estimation of richness of trees, dominant trees in the campuses and estimated Tree Diversity Index using Simpson's Diversity Index were determined to draw a comparative inference. A total of 2795 numbers of forest trees, along with plantation tree and horticultural species were recorded inside the University campus. Data collection was done by dividing the study area into several plots, identification and counting of the tree species was done on each plot. A total of 39 woody tree species including bamboo, belonging to 20 families is represented in the study area. A comparative study revealed that Teak, belonging to family Lamiaceae has the largest tree population and high diversity index than other families. The second most dominant species is Mango followed by coconut and other largely occurring tree species is Devil's tree, Calophyllum, Debdaru, Jackfruit, Acacia and Cashew.

Keywords: Phytosociology, Simpson's index, Species, Tree diversity

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EFFECT OF GAMMA IRRADIATION AND EMS ON *IN VITRO* SHOOT TIP CULTURES OF BANANA VARIETY *NANJANAGUDU RASABALE*

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Abstract: Banana is one of the most important crops grown in the country for domestic and export markets. Variety *Nanjanagudu Rasabale* is grown in parts of Mysuru district of Karnataka known for its unique aroma, favour and taste, is susceptible for fusarium that causes Panama wilt. Investigations on development of mutants induced resistance or tolerance using gamma rays and EMS were carried out using *in vitro* shoot tip cultures. There was no mortality with cent per cent survival and regeneration of explants when treated with gamma rays at different dosage and EMS concentrations. However, a slight change in stem colour was noticed with the use of EMS. The growth of explants was almost normal compared to untreated ones but a slight reduction in the rate of growth and proliferation was observed in both gamma and EMS treated samples. Rooting was also normal in presence of IBA. Unfortunately, all the *in vitro* grown plantlets have become susceptible when treated with fusarium inoculums, the plants turned yellow and wilted gradually over a period of time.

Keywords: Gamma rays, Banana variety, Crops

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DETERMINATION OF ANTIFUNGAL ACTIVITIES OF LEMON GRASS OIL ON MUCOSAL MICROORGANISM CRYPTOCOCCUS NEO FOR MANS

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Abstract: The aim of the study to know the antifungal effect of lemongrass oil on mucosal microorganism *Cryptococcus neoformans.*The disc diffusion technique used for the *Cryptococcus neoformans*was carried out at different concentration of lemongrass oil as neat, 25%, 50%, 75%. The disc diffusion test for the *Cryptococcus neoformans*showed the inhibition zone of 22mm>20mm>15mm>12mm at the concentration of neat, 25%, 50%, 75%. The study has demonstrated that the essential oil of Lemongrass oil has significant antimicrobial potential against mucosal microorganism *Cryptococcus neoformans.*

Keywords: Essential oil, Antimicrobial activity, Mucosal microorganism

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EVALUATION OF CERTAIN FUNGICIDES AND BIOPESTICIDES AGAINST STEM ROT OF MUSTARD CAUSED BY *SCLEROTINIA SCLEROTIUM*

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Abstract: Stem rot of mustard is the most important and serious disease in all over India. It is mainly caused by *Sclerotinia sclerotium*. The pathogen was tested with six fungicides and two bio-pesticides. The fungicides manly Propineb, Mencozeb, Sulphur, Thiomethile, Copper oxychloride and Carbendazim and bio-pesticides were Garlic oil and Ginger Oil. All the tested fungicides and bio-pesticides were reducing the growth of pathogen *In- Vitro* condition except control. Among the tested fungicides Propineb and Mencozeb were found most effective fungicides inhibit the growth of the pathogen is 100%. Sulphur and Thiomethile which were sowed 71.47% and 70.45% inhibition over control respectively. Whereas Copper oxychloride and Carbendazim was least effective showed 41.17% and 47.05% inhibition over control. *In-Vitro* condition Propineb and Mencozeb was most effective fungicides which were showed minimum disease incidence and maximum yield in both the year of 2017-18 and 2018-19. The minimum disease incidence 9.46 and corresponding yield 23.09 was recorded in 2017-18. Next best order of superiority fungicide were Sulphur, Thiomethile , Copper oxychloride and Carbendazim, which were showed average disease incidence 9.92 to 15.03 and yield from 20.52 to 13.50 q/ ha grain yield. Among the bio-pesticides Garlic oil and Ginger Oil were least effective. Chemical which was showed maximum disease incidence 56.84 and minimum corresponding yield 11.50 q/ha in the year of 2018-2019.

Keywords: Fungicides, Carbendazim, Bio-pesticides, Stem rot, Mustard

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PERFORMANCE OF DIFFERENT MULCHES ON GROWTH AND YIELD OF CHILLI

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Abstract: The present experiment was conducted during summer, 2018 at the Horticulture research scheme, Vasantrao Naik Marathwada Krishi Vidyapeeth Parbhani. The experiment was laid out in randomized block design with 7 treatments viz; black, white, silver, red, yellow polythene mulch, soyabean straw, and control with replicated three times. The results indicated to the maximum plant height was reported at 60 and 90 DAT in silver polythene mulch (45.03cm, 58.06cm) respectively, while lowest plant height was recorded in control. The maximum plant spread in East-West direction was recorded in silver polythene mulch (66.11cm) and the maximum plant spread in North-South direction in silver polythene mulch (59.17cm). The maximum number of branches at 45 and 90 DAT in silver polythene mulch (10.40cm, 18.08cm) respectively. The maximum number of leaves in silver polythene mulch (413.55). The minimum days to first flowering and 50 per cent flowering (65.63days) was recorded in silver polyethylene mulch. The highest fruit girth (2.29cm) and fruit length (8.23 cm) was recorded in treatment silver polyethylene mulch, as compare to control. The highest average yield per plot (32.18kg) and per hectare (218.91qt) was recorded in treatment silver mulch.

Keywords: Chilli, Growth, Yield, Soybean straw, Plastic mulch