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Content

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BIOASSAY AGAINST *SPODOPTERA FRUGIPERDA* AND BIOSAFETY OF NON TARGETED ORGANISMS

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Abstract: Entomopathogenic potential of nineteen *Bacillius thuringiensis*strains were evaluated against neonate larvae of *S. frugiperda*.KKM 2 and KKM 14 were caused above 60% mortality. KKM 5, KKM 17 and KKM 18 were showed lowest per cent mortality (16.67%). Silkworms were highly susceptible to the selected *B. thuringiensis* isolates. Screened *B. thuringiensis*strains did not cause any adverse effects on beneficial organisms *viz*., honey bees and *Trichogramma chilonis*.

Keywords: *B. thuringiensis*strains, Bioassay, *S. frugiperda*, Biosafety

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FORAGING BEHAVIOR OF POLLINATORS/VISITORS ON PEACH (*PRUNUS PERSICA*) IN BARIMA, MAINPAT BLOCK OF SURGUJA DISTRICT OF CHHATTISHGARH, INDIA

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Abstract: Study on foraging activity of pollinators/visitors on different time hours on peach bloom. Various pollinators/visitors *i.e. Tetragonula iridipennis*, *Apis mellifera*, *Apis cerana*, *Apis dorsata*, *Musca domestica*, *Pantala flavescens* and *Eurema brigitta* were observed and the *Apis mellifera* was found dominant bee species.Stingless bee (*Tetragonula iridipennis*) recorded higher at 12.00 - 1.00 P.M. noon (1.88 bees/5min/15cm twig) followed by at 3.00 A.M. - 4.00 A.M. (1.25 bees/5min/15cm twig). However the lowest population was recorded at 5.00 - 6.00 P.M. (1.00 bees/5min/15cm twig).Italian bee (*Apis mellifera*) population was recorded maximum at 12.00 - 1.00 P.M. noon (3.13 bees/5min/15cm twig) followed by (2.38 bees/5min/15cm twig) and lower population was noticed at 5.00 - 6.00 P.M. (1.96 bees/5min/15cm twig).Indian honey bee (*Apis cerana indica*) population was recorded foraging on peach flowers. Highest population 12.00 - 1.00 P.M. (2.17 bees/5min/15cm twig) and lower at 5.00 - 6.00 P.M. (1.58 bees/5min/15cm twig) respectively.Rock bee (*Apis dorsata*) recorded higher at 12.00 - 1.00 P.M. (2.38 bees/5min/15cm twig) and the lowest population was recorded at 8.00 - 9.00 A.M. (1.96 bees/5min/15cm twig).Housefly (*Musca domestica*) recorded higher at 5.00 - 6.00 P.M (2.25 *Musca domestica*/5min/15cm twig) and the lowest population was recorded at 8.00 - 9.00 A.M. (1.88 *Musca domestica*/5min/15cm twig).Small grass yellow butterfly (*Eurema brigitta*) population was recorded maximum at 12.00 - 1.00 P.M. (1.17 *Eurema brigitta* /5min/15cm twig) and lower population was noticed at 8.00 - 9.00 A.M. (0.71 *Eurema brigitta*/5min/15cm twig).Globe skimmer (*Pantala flavescens*) the highest population was recorded at 5.00 - 6.00 P.M. (1.13 *Pantala flavescens*/5min/15cm twig) followed by at 3.00 - 4.00 P.M. by (0.92 *Pantala flavescens*/5min/15cm twig) and the lowest was recorded at 12.00 - 1.00 P.M. (0.88 *Pantala flavescens*/5min/15cm twig).

Keywords: *Apis mellifera*, Foraging behaviour, Honey bee, Pollinator/visitors, *Prunus persica*

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EFFECT OF DIFFERENT LEVELS OF NANO UREA AND NITROGEN ON YIELD AND ECONOMICS OF RICE (*ORYZA SATIVA* L.) IN *VERTISOLS* OF CHHATTISGARH PLAINS

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Abstract: A field experiment was carried out in split-plot design during *Kharif* season of 2022 at Instructional Farm of Dau Kalyan Singh College of Agriculture & Research Station, Bhatapara, IGKV, Raipur to evaluate the "Effect of different levels of nano urea and nitrogen on yield and economics of rice (*Oryza sativa* L.) in *Vertisols* of Chhattisgarh Plains".Three levels of nano urea and five levels of nitrogen were allocated in main plot and sub plot respectively. Among levels of nano urea, application of 12 ml nano urea litre^{-1} of water at 25-30 DAT were recorded significantly higher grain yield, straw yield and biological yield and also fetched maximum gross returns, net returns and benefit cost ratio followed by application of 8 ml nano urea litre^{-1} of water at 25-30 DAT. Among levels of nitrogen application of 75 per cent RDN in three split doses (25% basal + 25% at tillering stage + 25% at booting stage) registered significantly higher grain yield, straw yield and biological field and also ascribed maximum gross returns, net returns and benefit cost ratio followed by application of 100 per cent RDN in three split doses (50% basal + 25% at tillering stage + 25% at booting stage) which was significantly at par.

Keywords: *Kharif* , Nano urea, Nitrogen, Rice, Yield

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DETERMINANTS OF FARMERS DECISION FOR ADOPTION AND NON-ADOPTION OF EUCALYPTUS PLANTATION AND THEIR IMPACT ON GROUND WATER LEVEL OF BORE WELLS IN MIDDLE GUJARAT

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Abstract: Probability of the farmer's decision in adopting eucalyptus was positive and significantly influenced by credit facility, per capita income, land not suitable for agriculture and land ownership. Age and family size was negatively influenced adoption decision of eucalyptus plantation.The impact of eucalyptus plantation on ground water table in western part of country was observed that average depth of bore wells was high (95.65 feet) within <1 km area of eucalyptus plantation. The study indicated that the depth of water table and percentage change in between present water depth and water depth before 3-5 year of bore wells within 1 km area of eucalyptus plantation was more than area of 1 to 3 km area. Similarly, fresh dug bore wells depth within 1 km area of eucalyptus plantation was more as compared to fresh dug bore wells within 1-3 km area of eucalyptus plantation.

Keywords: Eucalyptus, Adoption, Non-adoption, Bore well, Ground water level

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ASSESSMENT OF PREKHARIF GREEN GRAM IN RICE BASED CROPPING SYSTEM IN SRIKAKULAM DISTRICT OF ANDHRA PRADESH

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Abstract: On an average Srikakulam district received 105mm rainfall in summer showers and pre-kharif rains. Most of the farmers in the Srikakulam district were not utilising the pre and early monsoon rains for sowing of any crop and kept the ploughed land fallow up July 3rd week in the areas suitable to transplanting of rice. This results into high weed menace due to intermittent rains and no coverage, further it causes depletion of nutrients, evaporation of water and soil erosion. To create awareness on utilisation of land and improvement of net sown area, an On Farm Trial(OFT) was conducted for three years i.e 2020-21 to 2022-23 with the treatments of T1: Pre kharif Greengram – kharif paddy- Rabi Blackgram,T_2: Green manure - Paddy– Black gram and T3: Fallow-Paddy-Black gram (Farmer practice) in three locations in the district. Due to growing of green gram during Pre-Kharif prior to paddy given average yield of 598 kg/ha. Also it added manure to the soil which increased 14.07% in paddy yield (5983 kg/ha) and 13.65 % in black gram yield (673kg/ha). Average of three years results of OFT on assessment of rice based cropping system shows that the treatment 1(T1) pre kharif green gram –kharif paddy -rabi rice fallow black gram gave higher additional net income of Rs 39,355/ha with B.C ratio of 1:2.08 followed by treatment2 (T2) i.e Green manure-Paddy-black gram Rs20,459 with BC ratio of 1:2.02 when compared to treatment 3 (T3) Fallow-paddy-black gram gave BC ratio 1:1.79.

Keywords: Farmers, Green gram, Rice, Srikakulam district