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4th International Conference On

Current Approaches in Agricultural, Animal Husbandry and Allied Sciences for Successful Entrepreneurship (CAAHASSE-2021)

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Abstract

The field experiment was conducted during kharif season of 2019 at Fodder Production Unit of Livestock Farm Complex Department, Veterinary College Bidar. The aim of the experiment was to study the performance of different sources of livestock and poultry waste as organic manures on growth and yield of fodder maize. The experimental layout which was laid out in Randomized Block Design (RBD) with three replications. The results revealed that treatment T₅ (Poultry Manure 12 t ha⁻¹) has performed significantly better than all other treatments namely, plant height (206.47 cm), number of leaves plant⁻¹ (12.00), dry weight (28.82 g), leaf area index (5.57), stalk length (140.66 cm), stalk girth (13.47 cm), number of cobs plant⁻¹ (2.33), cob length (16.35 cm), cob girth (15.52 cm), cob weight per plant (85.35 g), cob weight per m² (3.17 kg), green cob weight per ha⁻¹ (3.17 t), green fodder yield plant⁻¹ (195.75 g), green fodder yield per m² (3.13 kg), green fodder yield ha⁻¹ (31.32 t), dry fodder yield plant⁻¹ (41.22 g), dry fodder yield per m² (0.65 kg) and dry fodder yield ha⁻¹ (6.60 t). Whereas, treatment T₁ (Control) has performed poor among all the treatments. However, treatment T₄ (Sheep Manure 12 t ha⁻¹), T₉ (Fermented Bio-Slurry {Dung + Urine (1:1)} Soil Application 20 t ha⁻¹ and Foliar Spray (10%) @ 15, 30 & 45 DAS) and T₈ (Fresh Bio-Slurry {Dung + Urine (1:1)} Soil Application 20 t ha⁻¹ and Foliar Spray (10%) @ 15, 30 & 45 DAS) were statistically at par with treatment T₅ (Poultry Manure 12 t ha⁻¹), respectively.

Key words: Bio-slurry, forage, FYM, organic material and silage.

**Pbs 29079b- A Novel Advanced Breeding Line With Large Seed Size In Groundnut
(*Arachis Hypogaea L.*)**

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Abstract

Groundnut is considered as an important oilseed crop throughout the world and having a unique nutritional composition. According to the utilization pattern groundnut can be categorized into oil types and confectionary types. In confectionary type, there are some important trade attributes. In developing new varieties with quality characteristics for confectionary products seed size is one of the important traits. Kernel size coupled with the nutritional quality will determine the worth of groundnut for direct consumption or export. Focusing on this objective at ICAR-DGR, Junagadh several crosses were attempted resulting in development of large seed advanced breeding lines (ABLs) from the past two decades. Evaluation of selected promising 40 large seed ABLs in two locations (Junagadh and Bikaner) in two seasons (*Kharif*, 2019 and 2020) along with three checks, RG 599-3, Mallika and Girnar 2 sorted a promising genotype, PBS 29079B, Virginia runner advanced breeding line developed using pedigree method. It recorded significant difference for seed characters like kernel length (KL), kernel width (KW), hundred kernel weight (HKW), shelling percent (SP), and hundred pod weight (HPW). At Bikaner it recorded large mean seed size (HKW -121.9 gm; KL- 2.21 cm and KW- 1.03 cm) with moderate oil (48%) and high protein (30.39%) in two seasons whereas at Junagadh it recorded high mean HKW of 72.52 gm, mean KL as 1.7 cm and mean KW as 0.74 cm with moderate oil (47.5%) and high protein (31.33%) in two seasons compared to checks. The overall mean for seed size in four seasons (two locations in two seasons) is 97.21 g of HKW, 1.95 cm of KL and 0.88 cm of KW. Even though the range for mean seed

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size varied because of soil effect, it showed stable superiority over checks in all the traits in both the locations. This Virginiarunner advanced breeding line is suitable for confectionery purpose which can be released as a variety after further evaluation or can be used as donor parent in groundnut hybridization program to improve confectionery qualities.

Key words: Groundnut, Confectionery, Seed Size, ABLs

**Phytoremediation of Pb polluted soils through *Chrysanthemum indicum* L. with the help of EDTA
and vermicompost**

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Abstract

The pot experiment was conducted to grow *Chrysanthemum indicum* L. for investigation of phytoremediation potential of Pb contaminated soils with the help of EDTA and vermicompost. The result show the combined application of EDTA (5 mmol kg⁻¹) and vermicompost (10 g kg⁻¹) enhanced the accumulation of Pb in root and shoot up to 42.21, 20.67 mg kg⁻¹ dry weight of plant. However, the accumulation of Pb increased by increasing the concentration Pb applied in the form of Pb(NO₃)₂ in soil from 0 to 40 mg kg⁻¹ up to 0.68 to 42.21 and 0.33 to 20.67 mg kg⁻¹ in root and shoot respectively. Maximum root and shoot growth observed in T₆ treatment (10 mg kg⁻¹ Pb, 5 mmol kg⁻¹ EDTA + 10 g kg⁻¹ vermicompost) 16.34, 42.82 cm and minimum in T₁₀ treatment 9.10, 29.42 cm respectively. Root and shoot biomass were found maximum in EDTA (5 mmol kg⁻¹) and vermicompost (10 g kg⁻¹) applied treatment up to 1.28, 4.27 g pot⁻¹ and minimum in only 40 mg kg⁻¹ Pb applied treatment 0.71, 2.25 g pot⁻¹. The concentration of lead was found higher in root than shoot. The combined application of EDTA (5 mmol kg⁻¹) and vermicompost (10 g kg⁻¹) show the maximum translocation factor 0.63 and bioaccumulation factor in T₆ (20 mg kg⁻¹ Pb, 5 mmol EDTA and 10 g kg⁻¹ vermicompost) 0.46 followed by T₁₂, T₁₁ and T₁₀. The result of present study reveals that the *Chrysanthemum indicum* had phytoremediation potential of Pb polluted soils and EDTA and vermicompost are the enhancers of phytoremediation.

Keywords: Bioaccumulation, *Chrysanthemum indicum* L. Phytoremediation, Pollution, Translocation, Vermicompost

Review on groundwater potential zone identification using remote sensing and GIS technology

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