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VARIABILITY STUDIES IN CUCUMBER (*CUCUMIS SATIVUS* L.)

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Abstract: It is believed that cucumber has been originated from India and is acknowledged that China is the secondary center of diversity. Despite being originated in the Indian sub-continent and having substantial variety of plant traits, the crop remains underutilized with respect to its breeding value and economic potential. Cucumber improvement has a huge scope in India and overseas. A detailed knowledge on genetic variability, heritability, genetic advance, correlation, path coefficient of various quantitative characters and genetic diversity is essential for any crop, to achieve highest productivity. Studies in this aspect are minimal and are not carried out for every genetic materials and climatic condition. Hence, the information below provides a solid breeding plan for the improvement of cucumber crop.

Keyword: Cucumber, Variability, Correlation, Path coefficient, Genetic diversity

APPLICATION OF PLANT GROWTH REGULATORS IN ORNAMENTALS AND FLOWER PRODUCTION

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Abstract: Ornamental plants bear an important status in the horticultural industry of the world. Plant growth regulators consist of a large group of naturally occurring or synthetically produced organic chemicals and considered as helping tool in the modern production system of ornamentals. Most of the time plant growth regulators are being used by the commercial growers of ornamental plants as a part of cultural practice. Ornamental crops find extensive use of growth regulators for modifying their developmental processes. Plant growth regulators provide an immediate impact on crop improvement programmes and are less time consuming, applications of plant growth regulators must lead to quantifiable advantages for the user plant growth regulators must be specific in their action and toxicologically and environmentally safe. The physiological activities of flowering crops regulate by the application of growth regulators and finally affect the growth and flower production in flowering crops. Plant growth regulators have quicker impact on vegetative as well as flower yield of flowering crops. There are various methods of application of PGRs but the most popular are foliar sprays, drenching and pre-plant soaking while the efficacy of each method depends on the various factors including the mode of absorption of PGRs by different plant parts, method of application and environmental factors.

Keywords: Plant growth regulators, flowering crops, Auxin, GA3, Cytokinins, Application methods

POPULATION DYNAMICS OF INSECT PEST COMPLEX OF BRINJAL IN RELATION TO WEATHER PARAMETERS

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Abstract: An experimental trial was conducted to know the population dynamics of insect pest complex of brinjal in relation to weather parameters consecutively for two years during *Rabi* season 2018-19 and 2019-20 at BRAUSS campus, Mhow, (MP) India. Results revealed that the data on intensity and population fluctuation of major insect pests on *S. melongena*, along with prevailing weather conditions during *Rabi* 2018-19 and 2019-20 were recorded in field. Whitefly, *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae), Jassid, *Amrasca biguttula biguttula* (Ishida) (Hemiptera: Cicadellidae), Aphid, *Aphis gossypii* (Glover) (Hemiptera: Aphididae) and Shoot and Fruit borer, *Leucinodes orbonalis* (Guen.) (Lepidoptera: Pyraustidae) and predators viz., Ladybird beetle, *Coccinella transversalis* (Fabricius) (Coleoptera: Coccinellidae) and Green lacewing, *Chrysoperla carnea* (Stephens) (Neuroptera: Chrysopidae) were recorded during the crop growth period.

Keywords: Population dynamics, Whitefly, Jassid, Aphid, Brinjal, *Leucinodes orbonalis* weather parameters

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MORPHOLOGICAL CHARACTERIZATION OF SESAME (*SESAMUM INDICUM* L.) GENOTYPES USING DUS DESCRIPTORS

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Abstract: The aim of present investigation is to characterize 30 sesame genotypes (25 advanced breeding lines and 5 released varieties) based on DUS characteristics of Protection of Plant Varieties & Farmers' Rights Authority (PPV & FRA). The field experiment was conducted at Agricultural Research Station, Yelamanchili, Visakhapatnam District of Andhra Pradesh and twenty DUS descriptors were recorded in the genotypes. The study revealed the presence of significant variation for days to 50% flowering, plant height, branching, stem hairiness, leaf lobes, capsule hairiness, capsule length (cm), days to maturity, seed coat colour, 1000 seed weight (gm) and oil content (%) indicating variations due to genetic makeup of the lines and these descriptors can be utilized in genotype identification, characterization and maintenance.

Keywords: Genotypes, Morphological characterize, *Sesamum indicum*

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IN VITRO EFFICACY OF PLANT EXTRACTS AND FUNGICIDES TO CONTROL FRUIT ROT OF CHILLI IN INDIA

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Abstract: Fruit rot caused by *Colletotrichum capsici* (Sydow) Butler and Bisby is one of the most destructive diseases of chilli in India. The study on used of fungicides and different plant extracts as control measure for the fruit rot disease. The fungal inhibition capacity of six leaf extracts from different plants and six systemic and non systemic fungicides was used under laboratory condition. Among six plant extracts, NSKE was found most effective in inhibiting mycelial growth at 5 and 10 per cent (49.80 and 62.40 %,resp.) of *C. Capsici* followed by garlic (41.40 and 57.60%). Among six fungicides, propiconazole was found cent per cent inhibitory at 250 as well as at 500 ppm. This was followed by hexaconazole (84.80, 94.40, 98.00 and 100 % at 50,100, 250 and 500 ppm, respectively). Most of work on management of fruit rot of chilli has been done through fungicide alone. In view of the increasing disease incidence in chilli and prolonged and repeated use of fungicides may also result in environmental pollution and non-acceptability of the produce and also development of resistance in pathogen.

Keywords: Fruit rot, Chilli, *In vitro*, Plant extracts, Fungicides

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NUTRIENT UPTAKE OF ASH GOURD [*BENINCASA HISPIDA* (THUNB.) COGN.] GERMPLASM

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Abstract: A field experiment was conducted during *khari*f season of 2015-16 at All India Coordinated Research Project on Vegetable Crops, Odisha University of Agriculture and Technology, Bhubaneswar, to assess the nutrient uptake of different genotypes of ash gourd. Eighteen genotypes of ash gourd including 7 released variety (Kashi Dhawal, Kashi Ujwal, Kashi Surbhi, Pusa Ujjwal, Pusa Urmi, Pusa Sabji Petha and Pusa Shreyali) and 11 land races (BAGS-1, BAGS-2, BAGS-3, BAGS-4, BAGS-5, BAGS-6, BAGS-7, BAGS-8, BAGS-9, BAGS-10, BAGS-11) were used for the experiment. The nitrogen concentration of fruit showed a range of 0.59% (BAGS-6) to 1.18% (BAGS-3). Genotype BAGS-8 recorded maximum concentration of K (6.75%), S (0.80%) and Mn (229.70% mg kg⁻¹). BAGS-2, BAGS-10, Pusa Shreyali scored highest concentration of Zn (62.44 mg kg⁻¹), P (0.62%) and Ca (10.00%) respectively. Highest concentration of magnesium was seen in BAGS-6 as well as Pusa Ujjwal *i.e.* 5.60% where as Pusa Urmi and BAGS-10 found to be lowest *i.e.* 1.80%. BAGS-9 (6598.50 mg kg⁻¹) recorded highest concentration of iron followed by Pusa Shreyali (5230.40 mg kg⁻¹) and Kashi Surbhi (4852 mg kg⁻¹).

Keywords: Genotypes, Micronutrient, Nutrient, Season

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THE IMPACT OF CLIMATE VARIABILITY ON DEVELOPMENT OF FOLIAR DISEASES OF *SESAMUM INDICUM* L.

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Abstract: Leaf blight caused by *Alternaria sesami* and powdery mildew caused by *Erysiphe cichoracearum* are the major yield limiting factors in sesame. Environmental factors play an important role in development of foliar diseases of sesame. Three different dates of sowing was taken using the susceptible variety VRI-1 to study the influence of weather factors on the occurrence of foliar diseases of sesame. The weather parameters were recorded and correlated with the disease intensity. The results revealed that foliar disease severity was more in unprotected plots as compared to protected plots. The disease intensity was found to be increased with an increase in age of the plants. Correlation studies revealed that *Alternaria* leaf

blight intensity was significantly negatively correlated with maximum and minimum temperature. There was a positive relationship observed between powdery mildew incidence and Relative humidity.

Keywords : Sesame, Foliar diseases, Weather factors, Correlation

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IMPACT OF KVK TRAINING ON FARMERS OF JAGATSINGHPUR DISTRICT OF ODISHA

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Abstract: The study was conducted in Jagatsinghpur District of Odisha to find out the impact of training provided by KVK on the farmers of the District. This study accesses the technological development (2.61), economic development (2.46), social development (2.45), farm activity development (2.35) and infrastructure development (1.44). Gap analysis was maximum in infrastructure development (52%) and minimum in technological development (12.86%). Hence it was concluded that more emphasis need to be given to the future training programme to the KVK. The characteristics of the participants' viz. educational level, farming experience, extension need a constant positive influence on the knowledge level of the participant.

Keywords: Economic, Gap percent, Krishi Vigyan Kendra, Rural development, Training

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SOIL FERTILITY STATUS OF GUDAMALANI TALUKA OF BARMER DISTRICT OF RAJASTHAN

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Abstract: Within a soil, nutrient variability exists depending upon the hydrological properties of the soil and cropping system. In the present study 53 soil samples were collected from 9 gram panchayats and were analysed. The soil samples were collected from Pearlmillet-Cumin cropping sequence. Analysis of soil samples revealed that 100 per cent soil samples were deficient in available nitrogen and organic matter content, while all samples were medium range in P and K, respectively. Among the micronutrients tested copper and manganese were in sufficient range while iron and zinc were deficient in soil.

Keywords: Soil fertility, Nitrogen, Phosphorus, Organic matter, Micronutrients, Analysis

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EFFECT OF IBA ON VEGETATIVE PROPAGATION OF *NERIUM OLEANDER* 'VARIEGATA' THROUGH CUTTINGS

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Abstract: An experiment was carried out at Horticulture Nursery, M.S. Swaminathan School of Agriculture, Centurion University of Technology and Management, Paralakhemundi, Odisha during 2019-20. For the experiment sand was taken as rooting medium and experiment designed on Randomized Block Design (RBD) with 6 treatments and 4 replications. The treatments were T₁- Control, T₂- IBA @ 500ppm, T₃- IBA@ 1000ppm, T₄- IBA@1500ppm, T₅- IBA@2000ppm and T₆- 2500ppm. The results express positive response of IBA concentration towards rooting characteristics of Oleander. Application of IBA @ 2500ppm shows higher results on survival percentage, root length, root numbers, rooting percentage and fewer days taken for sprouting of cuttings.

Keywords: Cutting, IBA concentration, Nerium, Rooting