

Journal of Plant Development Sciences

(An International Monthly Refereed Research Journal)

Volume 8

Number 2

February 2016

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VARIABILITY, HERITABILITY AND GENETIC ADVANCE IN CHILLI

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Received-19.02.2016, Revised-27.02.2016

Abstract: Different parameters were estimated to assess the magnitude of genetic variability in 43 genotypes of chilli (*Capsicum annuum* L.). The analysis of variance indicated the prevalence of sufficient genetic variation among the genotypes from all the characters studied. The high phenotypic coefficient of variation (PCV) and genotypic coefficient of variation (GCV) were observed for fruit set per cent, number of fruits per plant, dry fruit yield per plant, number of seeds per fruit and average dry fruit weight. High heritability coupled with high genetic advance were observed for yield per plant, plant spread, fruit set per cent, days to first picking, number of fruits per plant, fruit weight, dry fruit recovery and number of seeds per fruit indicating these characters are governed by additive gene action. Hence, direct selection may be followed for the improvement of chilli for these characters.

Keywords: Chilli, Variability, Heritability, Genetic advance

STUDIES ON PHYTOTHERAPEUTIC PLANTS OF THOVALAITALUK, KANYAKUMARI DISTRICT, TAMIL NADU, INDIA

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Received-16.02.2016, Revised-24.02.2016

Abstract : Kanyakumari District, once known as the “granary of the south “, lies at the south western part of the Indian Peninsula. This district consists of four taluks – Agasteeswaram, Kalkulam, Thovalai and Vilavancode. Thovalai Taluk is the third largest taluk in this district with an area of 396.1 sq.k.m. (36.907 ha.). The people of this taluk traditionally are co-existing with their native environment and depend on plants and plant products for health and treatment of diseases. Studies were conducted with a view to identify the common plants of phytotherapeutic value naturally growing in this taluk. Plants were collected, identified and data regarding their utilization by local people and traditional medicine practitioners were recorded. However, in this paper 120 wild species were enlisted along with their therapeutic potential.

Keywords: Thovalai Taluk, Phytotherapeutic plants, Traditional medicine

INVASIVE ALIEN SPECIES IN URBAN ECOSYSTEM OF SARGUJA

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Received-06.02.2016, Revised-15.02.2016

Abstract: Biological diversity faces many threats throughout the world. One of the major threats to the native diversity is biological invasions, caused by the invasive alien species (IAS). These are the non-native species that are introduced in areas outside their natural habitat where they grow, survive, reproduce and produce self sustaining populations causing direct and indirect health effects. The effects are exacerbated by global climate change and chemical and physical disturbance to species and ecosystems. Change in climate may also produce more conducive conditions for the establishment and spread of invasive species as well as change the suitability of local climate for native species and nature of interactions among native species. The present study was undertaken to record the invasive alien species of Sarguja district of Chhattisgarh. The dominant invasive species mainly comprised of *Lantana camara*, *Parthenium hysterophorus*, *Cassia tora*, *Cyperus spp.*, *Ipomoea carnea* etc. *Parthenium* and *Lantana* were found to be most frequent species occurring in the region. The ecological diversity of invasive plants suggests wide ranging impacts which needs to be assessed.

Keywords: Biological diversity, Ecosystems, Habitat, IAS, Native species

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COMPATIBILITY OF ENTOMOPATHOGENIC FUNGI WITH IMIDACLOPRID FOR MANAGEMENT OF BROWN PLANTHOPPER, *NILAPARVATA LUGENS* STAL. (DELPHACIDAE: HEMIPTERA) IN RICE

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Received-20.02.2016, Revised-27.02.2016

Abstract: Compatibility between imidacloprid and entomopathogenic fungi studies were conducted at IIRR (Indian Institute of Rice Research), Hyderabad. Imidacloprid was tested at three concentrations viz., recommended concentration (RC), sub lethal concentration (0.5 RC) and more than recommended concentration (1.5 RC) against three entomopathogenic fungi viz., *Beauveria bassiana*, *Metarhizium anisopliae* and *Lecanicillium lecanii* (*Verticillium lecanii*) by using poison food technique under laboratory conditions. Imidacloprid was harmless to *B. bassiana* and *L. lecanii* at three tested concentrations and slightly harmful to *M. anisopliae* at 1.5 RC. Combined use of imidacloprid with entomopathogenic fungi at recommended concentrations against BPH under glasshouse conditions indicating increased mortality of BPH compared to imidacloprid alone spray.

Keywords: Compatibility, Entomopathogenic fungi, *Beauveria*, *Metarhizium*, *Lecanicillium*, Planthopper

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INVESTIGATION FOR FOREMOST DISEASES OF POTATO CROP IN SEEDS RECEIVED FROM DIVERSE SOURCES UNDER NORTH GUJARAT CONDITION

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Received-17.02.2016, Revised-24.02.2016

Abstract: During a survey in Gujarat, three types of tuber rots were recorded on potato tubers. A total of 125 seed samples containing 400 tubers each, representing five different seed sources viz., seeds from Himachal Pradesh, Uttar Pradesh, Punjab, Gujarat (Potato seeds produced by seed plot technique at Potato Research Station, Deesa) and Market seeds were examined before planting in respective years. The results of survey revealed that the Market seed was heavily infected with all the tuber rot diseases in comparison to other sources of seed. Dry rot and soft rot were observed in all the sources of seed. Maximum incidence of charcoal rot was observed in Market seed (6.00 %) and negligible in Uttar Pradesh (0.37 %) and Punjab (0.25 %) seed whereas, Himachal Pradesh seed and Deesa seed were free from charcoal rot disease.

Keywords: Incidence, Dry rot, Charcoal rot, Soft rot

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RAPID AND RELIABLE METHOD FOR HIGH QUALITY RNA ISOLATION FROM MAJOR SEED SPICES

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Received-20.02.2016, Revised-28.02.2016

Abstract: In plant molecular biology, isolation of high quantity with best quality of RNA is a crucial technique. The quality of RNA determines the reliability of downstream process like real time PCR. Isolation of RNA from seed spice crops is in itself a major challenge as there is an abundance of polysaccharides and oleoresin in the plant material. Three major seed spices Fenugreek, Coriander and Fennel were considered for this study. For all seed spices, where conventional isolation procedures gave poor results the present study describes a modified and more consistent method, which yields a greater quantity of RNA compared to the use of conventional protocols for seed spices. The protocol, in the present paper yielded 1.2-2.7 µg of RNA per 100 mg of fresh tissue and took only 3 hrs to complete. In spite of the quantity, RNA obtained was of high quality and proved suitable to RT-PCR.

Keywords: Seed spices, Coriander, Fennel, Fenugreek, RNA, RT-PCR, Nano-drop

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EFFECT OF *LANTANA CAMERA* AND *OCIMUM SANCTUM* EXTRACTS ON THE FECUNDITY OF MUSTARD APHID, *LIPAPHIS ERYSIMI* (KALT.)

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Received-21.02.2016, Revised-27.02.2016

Abstract: Naturally occurring compounds extracted from the plants have been identified to possess strong feeding deterrence to a number of insects. *Lantana Camera* and *Ocimum sanctum* extracts were also found priming against several pests. The present investigation has been done on the effect of *Lantana* and *Ocimum* extracts against the fecundity of mustard aphid, *Lipaphis erysimi* (Kalt.). The results revealed that both the plant extracts gave better results in comparison of control treatment. Therefore, use of both plant extracts can be incorporated in integrated pest management (IPM) in reducing the reproduction rate of aphids in mustard ecosystem.

Keywords: *Lantana*, *Ocimum*, Mustard aphid, Fecundity, Plant extract

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EMPOWERMENT OF RURAL WOMEN'S SHGS THROUGH AGRO BASED ENTERPRISES

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Received-04.02.2016, Revised-12.02.2016

Abstract: The present study was conducted in Deoria district of Uttar Pradesh state. Two blocks i.e. Salempur and Bhatpar Rani were selected purposively for this study. A sample of 120 respondents was purposively selected on the basis of their involvement in food processing and dairy management, considering 60 respondents from each block. The respondents were interviewed with the help of well structured interview schedule. The findings revealed that majority of the respondents had medium level of participation in food processing and dairy management practices. Majority of respondents faced the constraints of dominance of male members in family, lack of information about food processing dairy management, difficulty in marketing of processed products and animal rearing practices was observed.

Keywords: Participation, Empowerment, Food processing, Dairy management practices, Agro based enterprise

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EFFECT OF STORAGE TEMPERATURE AND HOLDING PERIOD ON INTERNAL QUALITY OF CHICKEN EGG

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Received-21.02.2016, Revised-28.02.2016

Abstract: The objective of this study was to evaluate the effects of storage temperature and holding period on internal quality of chicken eggs. A total of 108 fresh eggs were obtained from Vanaraja hens. Samples of 36 eggs each were stored in refrigerator (5°C) and at room temperature (40°C) for 5,10,15 days of holding period and 36 fresh eggs were evaluated for their internal characteristics within 2 hour of being laid. This study indicated that as the holding period increased egg weight, albumen height, yolk height, albumen index, yolk index and Haugh unit significantly ($p < 0.01$) decreased. Albumen index egg quality indicator was significantly ($p < 0.01$) decreased from 6.54% to 3.71% at 15 days of storage period. Storage temperature showed a significant difference ($P < 0.01$) between eggs stored at room temperature with that stored in refrigeration (5°C). Refrigerated (5°C) eggs have higher albumen height (5.9 mm), yolk height (19.1 mm), albumen index (7.39 %), yolk index (43.9 %) and Haugh unit (84.6) than eggs stored at room temperature. The results suggest that eggs significantly deteriorate in their internal quality with increasing by the storage temperature and holding periods.

Keyword: Storage temperature, Holding period, Albumen index, Haugh unit

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ASSESSMENT OF WEED MANAGEMENT IN SOYBEAN (*GLYCINE MAX. L.*)

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Received-22.02.2016, Revised-28.02.2016

Abstract: Soybean is known as 'golden bean' due to its various uses. It is two-dimensional crop as it contains 40-42 per cent high quality protein and 20-22 per cent oil. There are several constraints in the soybean one of them is weeds which often poses serious problem. Labour saving and eco-friendly weed management technology in soybean, which includes herbicides, can prove more economical and beneficial. Weed management by Imazethapyr 35% + Imazamox 35% WG 70g a.i./ha at 15 DAS found superior for Yield, Weed control efficiency, Gross return, Net return and benefit :cost ratio over No use of herbicide with Delayed manual weeding and weed management by Imazethapyr 10% S.L@ 75 g a.i./ha at 15 DAS. In the vertisol of Chhattisgarh.

Keywords: Soybean, Weed management, Imazethapyr, Imazamox