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TO STUDY THE EFFECT OF ZN, FE AND FYM ON YIELD, ECONOMICS AND NUTRIENT UPTAKE OF DIFFERENT RICE (*ORYZA SATIVA* L.) VARIETIES

Uma Shanker Ram* and V.K. Srivastava

Department of Agronomy, Institute of Agricultural Sciences, BHU,
Varanasi, U.P. – 221005
Email: usabhu@gmail.com

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Abstract: A field experiment was carried out at research farm Institute of Agricultural sciences, BHU, Varanasi for two consecutive years during kharif seasons of 2006-07 and 2007-08. Testing variables consisting of two varieties i.e. NDR-359 and HUBR 2-1, two sources of fertilizer application i.e. 100% RFD of NPK through inorganic source and 75% RFD through inorganic and rest 25% through FYM. Two micronutrients, Zn and Fe through Zn-EDTA and Fe-EDTA were tested in different combinations either on soil or as foliar application or both @ 0.5 and 1.0 kg ha⁻¹. Amongst varieties, var. NDR-359 recorded significantly higher yield, economics and NPK uptake of rice than HUBR 2-1, while Zn and Fe uptake were significantly increased in HUBR 2-1. Fertilizer source as application of 75% RFD through inorganic and rest through FYM recorded significantly higher yield, economics and N, P, K, Zn and Fe uptake of rice than 100% RFD through inorganic source. Among the different micronutrient treatments, soil application of Zn-EDTA @ 1 kg ha⁻¹ recorded significantly higher Zn uptake in rice whereas application of Fe-EDTA @ 0.5 kg ha⁻¹ recorded significantly higher Fe uptake by rice as compared to other micronutrient treatments.

Keywords: RFD, FYM, Varieties, Yield attributes, Economics, N, P, K, Zn, Fe uptake

SCREENING OF 110-R ROOT STOCK BASED TABLE VAREITIES OF GRAPE VINE (*VITIS VINIFERA* L.) AGAINST ANTHRACNOSE DISEASE CAUSED BY *ELSONOE AMPELINA* (DE BARY) SHER IN MANDSAUR DISTRICT OF MADHYA PRADESH

R.P. Patel, G.N. Pandey, B.K. Patidar, Nitin Soni, S.B. Singh* and A. Haldar

RVSKVV, College of Horticulture, Mandsaur (M.P.)
Email: rajeshpatel179@gmail.com

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Abstract: Grape is most important refreshing, commercial fruit crop and planted in temperate, subtropical and tropical agro-climatic condition. It is rich in sugar, vitamin, tannin and mineral like calcium, phosphorus and iron. 30 table varieties of grape viz Sharad Seedless, Krishna Seedless, Flame Seedless, A 18-3, Fantasy Seedless, Kishmish Moldowsky, Black Seedless, Kishmish Rozavis Red, Crimson Seedless, Ruby Seedless, Kishmish Chorni, Thompson Seedless, 2-A Clone, Superior Seedless, Manjri Naveen, Seedless Merbein, H-5, Sonaka, New Perlette, New Perlette, Sultanin-2, Pusa Seedless, Pusa Urvashi, Kishmish Rozavis White, Red Globe, Christmas Rose, Rizamat, Italia, Dilkhush, Muscat of Alexandria, Anabe-Shahi planted for table purpose in Horticulture research farm located at Krishi Nagar under RVSKVV, KNK College of Horticulture, Mandsaur M.P., India. Intensity of anthracnose disease caused by *Elsonoe ampelina* on grape was recorded by 0-4 scale of visual rating in natural epiphytotic condition. The disease appeared during the first week of July 2018 (SMW-27) with disease intensity of 10.10% with the maximum temperature (32.27 °C), minimum temperature (22.58 °C), humidity (75.42%), and rainfall (26.25mm). It reached its peak at the second week of September (MSW-37) with maximum disease intensity of 60.26% with the maximum temperature (29.07 °C), minimum temperature (23.68 °C), humidity (89.71%), and rainfall (2.5mm). The higher disease severity during warm and wet weather was found. The disease intensity ranged between 10.10 to 60.26 per cent and cumulative disease intensity increased from July to September (SMW-27 to SMW -37). After categorization for disease intensity Fantasy Seedless (15.77%), Sultanin-2 (20.45%), Kishmish Rozavis White (25.80%) and Anabe-Shahi (24.66%) were recorded as moderately susceptible varieties. Sharad Seedless (42.00%), Krishna Seedless (40.50%), A 18-3 (34.34%), Flame Seedless (28.62%) and eleven varieties were treated as Susceptible. Further, Superior Seedless (60.00%), 2-A Clone (52.54%) and Manjri Naveen (51.76%) were considered as highly susceptible.

Keywords : *Vitis vinifera*, *Elsonoe ampelina*, Anthracnose

A STUDY ON FINANCIAL RATIO ANALYSIS OF SRI VENKATESWARA CO-OPERATIVE SUGAR LTD., RENIGUNTA, CHITTOOR DISTRICT.

K. Shiny Israel* and Y. Prabhavathi¹

*Department of Agribusiness Management, University of Agricultural Sciences,
Dharwad (Karnataka), India*

¹Department of Agribusiness Management, ANGRAU, (Andhra Pradesh), India

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Abstract: Sugarcane is an important commercial crop cultivated in about 120 countries in the world. Sugarcane is cultivated in an area of 42.40million hectares in the world. The total area under sugarcane cultivation is highest in Brazil (6.20 million hectares) followed by India (5.01million hectare). Brazil is the biggest producer of sugar accounting for 41.4 per cent of the world sugarcane production followed by India (17.7 per cent).The secondary data was collected fromthe sugar factory records in the study area for the year of 2009-10 to 2013-14. The performance of sugar industry was examined by the financial indicators. The results revealed that, ratios for period of five years were found to be positive and some years are shown negative performance.The financial leverage of the factory over the study period reveals that financial risk of the firm showed an increasing trend. An interest and principal repayment component was taken and analysis was made from 2009-10 to 2013-14. For a rupee of capital employed in fixed assets and current assets by the company, the sales revenue generated by the company was highly fluctuating.

Keywords: Sugar factory, Financial indicators, Ratio analysis

REACTION OF BT COTTON HYBRIDS AGAINST SUCKING INSECT PESTS IN MALWA REGION OF MADHYA PRADESH

S.B. Singh*, R.P. Patel, and G.S. Chundavat

RVSKVV, College of Horticulture, Mandsaur (M.P.)

Email: sbsmds@rediffmail.com

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Abstract: The experiment was undertaken on medium black cotton soil in *Kharif* season of 2015 at College of Agriculture Farm, Indore in randomized block design with nine selected cotton hybrids in three replications with the plot size of 3 x 3 m and plant to plant spacing of 0.6 x 0.6 m. Hybrids were sown on July 1, 2015. These hybrids were ACH-1BG –II, ACH-104-2 BG-II, ACH-152-2BG–II, ACH-115-2BG-II, ACH-1133-2BG-II, ACH-1199-2BG-II, RCH- 2 BG-II (standard check), ACHB-90-1BG-II and MRC-7918 BG-II (standard check). The population of aphid, jassid, thrips and whitefly, were recorded at 20, 30, 40, 50, 60, 70, 80, 90, 100, and 110 days after germination (DAG) on 5 observational tagged plants from two lower, two middle and two upper leaves per plants. The cotton yield was recorded on whole plot basis and converted into kg per hectare. All the received data were analysed statistically. On the basis of overall mean of all the intervals the minimum jassid population was noted in ACH-1199-2BG-II (5.85) and found at par with standard Check MRC-7918 BG-II (6.29). The continuous increasing trend from first to last observation was observed for whitefly, aphid and thrips. The mean whitefly population was recorded least in ACH-1199-2BG-II (8.04) and found at par with standard check MRC-7918BBG-II (8.51) and standard check RCH-2BGII (8.53). In relation to aphid, standard check RCH-2BG-II (17.57) showed minimum population and found at par with ACH-1199-2BG-II (17.83). The least thrips population was noted in ACH-1199-2BG-II (15.17) and found to be at par with standard check MRC-7918BBG-II (15.93), ACH1133-2BG-II (16.01) and standard check RCH-2BG-II (16.37). The Highest seed cotton yield was observed in ACH-1155-2BG- II (2669kg/ha) and showed no significant difference with ACH-1199-2BG-II (2602 kg/ha), ACH-152-2BG-II (2262 kg/ha) and other hybrids.

Keywords: Bt cotton, Hybrids, Aphid, Leafhopper, Thrips, Whitefly, Reaction

FORAGING BEHAVIOUR OF GIANT BEE, *APIS DORSATA* (HYMENOPTERA-APIDAE) ON *AGERATUM CONYZOIDES* IN NORTHERN HILL ZONE OF CHHATTISGARH

G.P. Painkra*

IGKV, All India Coordinated Research Project on Honey Bees and Pollinators, RMD College of Agriculture and Research Station, Ambikapur-497001 (Chhattisgarh) India
Email: gppainkrarmd@gmail.com

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Abstract: A field investigation was undertaken at Raj Mohini Devi College of Agriculture and Research Station, Ambikapur under substation of Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) during 2016-17 for the purpose of foraging behaviour of rock bee, *Apis dorsata* on *Ageratum conyzoides*. During the first week of October the bee visitation was recorded minimum at 0900hrs (0.83 bees/5min/m²) and it was suddenly increased at 1100hrs (2.77 bees/5min/m²), after that it was declined (1.66 bees/5min/m²) at 1300hrs and 1.11 bees/5min/m² at 1500hrs and the lowest was recorded (0.72 bees/5min/m²) at 1700hrs and the mean bee population was recorded (1.41 bees/5min/m²). The average maximum bee population (5.43 bees/5min/m²) was recorded during the 2nd week of January 2017 followed by 2nd week of Nov 2016 (5.00 bees/5min/m²). However, at the hours of the day the bee visitation was noticed (2.51 bees/5min/m²) at 0900hrs and increased its peak at 1100hrs (7.67 bees/5min/m²) and it was started declined (5.83 bees/5min/m²) at 1300hrs, 3.05 bees/5min/m² at 1500hrs and 1.37 bees/5min/m² at 1700hrs. The highest average population was recorded at 1100hrs (7.67 bees/5min/m²).

Keywords: *Apis dorsata*, *Ageratum conyzoides*, Foraging behaviour, Weed.

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GROWTH AND PERFORMANCE OF SRI VENKATESWARA CO-OPERATIVE SUGAR LTD.: A STUDY IN CHITTOOR DISTRICT

K. Shiny Israel* and Y. Prabhavathi¹

*Department of Agribusiness Management, University of Agricultural Sciences,
Dharwad (Karnataka), India*

¹*Department of Agribusiness Management, ANGRAU, (Andhra Pradesh), India*

Received-04.09.2018, Revised-24.09.2018

Abstract: Sugarcane is an important commercial crop cultivated in about 120 countries in the world. Sugarcane is cultivated in an area of 42.40 million hectares in the world. Sugar industry is the second largest in India and first being the textile. This study is mainly based on financial indicators. The secondary data was collected from 2009-10 to 2013-14. The performance of sugar industry was examined by the financial indicators through financial analysis. The results revealed that, the increase in share capital contributed by members was quite negligible because sugar factory was unable to maximize the profits. For a rupee of capital employed in fixed assets and current assets by the company, the sales revenue generated by the company was highly fluctuating. The factory was incurring losses over the study period and the operating expenses of the company were also kept on the higher side. Factory may follow the strategies on par with private factories in procurement of sugarcane, payment method to sugar farmers and marketing of sugar and it would increase the profits.

Keywords: Sugar factory, Financial indicators, Financial analysis

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INFLUENCE OF SOWING DATES AND PLANT DENSITIES ON GROWTH PARAMETERS OF SOYBEAN (*GLYCINE MAX (L.) MERRILL*)

B. Sivakumar*, M. Srinivasa Reddy, P. Kavitha and S. Tirumala Reddy

*Department of Agronomy, Agricultural College, Mahanandi,
ANGRAU, Hyderabad-500030 (A.P.), India*

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Abstract: A field experiment was conducted during *kharif* season, 2014 to study the influence of different sowing dates and plant densities on growth parameters of soybean. It was comprised of nine treatments with three sowing dates (June 28, July 14 and July 29) as main plot treatments and three row spacing of soybean (30 cm x 10 cm, 45 cm x 10 cm and 60 cm x 10 cm) as sub plot treatments and replicated three times. Plant height, dry matter production, leaf area index (LAI), and Days to

50 per cent flowering increased with early sowing crop on June 28 than other two delayed sowings July 14 and July 29. July 14 sown crop is on par to June 28 sown crop. Growth parameters of soybean were inconsistent with different row spacings. The highest plant height, dry matter production and leaf area index (LAI) was recorded at a spacing of 30 X 10 cm, more number of days to 50 percent flowering were recorded at spacing of 60 cm x 10 cm.

Keywords: Sowing dates, Plant densities, Soybean, Growth parameters

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ISOLATION AND CHARACTERIZATION OF ANTIBIOTIC PRODUCING *ACTINOMYCETES* AGAINST CERTAIN PATHOGENS

Vishal Kumar Deshwal* and Mohd Tarik

Department of Microbiology, BFIT Group of Institution, Dehradun (India)

Email: vishal_deshwal@rediffmail.com

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Abstract: Aim of the present study was isolation and identification of *Actinomycetes* against certain pathogens. *Actinomycetes* strains were isolated from cultivated field of Sudhowala, Dehradun and *Staphylococcus aureus*, *Escherichia coli*, *Salmonella typhi* were also isolated from sewage at Dehradun. Both *Actinomycetes* and pathogens were characterized on the basis of microscopy and various biochemical tests. Further, we evaluated antimicrobial activity of *Actinomycetes* strains against isolated pathogens. Microscopic examination and biochemical tests confirmed that isolated strains were *Actinomycetes*, *Staphylococcus aureus*, *Escherichia coli* and *Salmonella typhi*. *Actinomycetes* did not show inhibition zone against *Staphylococcus aureus*. But crude extract of *Actinomycetes* showed 191.66, 181.81 % more inhibition zone as compare to 25% extract concentration against pathogenic *E. coli* and *Salmonella typhi* respectively. It confirmed that *Actinomycetes* effectively control growth of *E. coli* and *Salmonella typhi*.

Keywords: *Actinomycetes*, Antibacterial, *Staphylococcus aureus*, *Escherichia coli*, *Salmonella typhi*