

Journal of Plant Development Sciences

(An International Monthly Peer Reviewed Journal)

Volume 12

Number 8

August 2020

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FARMERS DECISION ON ACREAGE RESPONSE OF MAJOR CASH CROPS IN GUJARAT BY USING PRICE AND NON- PRICE FACTORS

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Received-08.08.2020, Revised-29.08.2020

Abstract: In this study, an attempt has been made to examine the acreage response of Major cash crops i.e. Cotton and Sugarcane in Gujarat by using the Nerlovian partial adjustment model. The secondary data for last 30 years (1985-86 to 2014-15) on area, production, yield, rainfall etc., for main crop and competitive crop was collected from various official sources. The competitive crop was selected on the basis of logically as well as statistically by calculating the correlation coefficient between crop area. The results exposed that the estimated coefficient of lagged price of cotton, lagged price of competitive crop, lagged area of cotton, expected price and sowing season rainfall has the significant influence as per logic and expected signs. However, the results of acreage response of sugarcane crop indicated that the coefficient of lagged price, lagged yield and lagged area was positive and statistically significant. This implied that higher price, yield and last year area allocated leads to larger area of the crop in the next year. It is worthwhile to mention that farmers' experience about the obtaining price and yield of any crop plays a crucial role in determining its profitability and hence incentives for its further cultivation and expansion. As farmers at planting time are not aware of the price and yield to be obtained it is their past experience. Thus, our results suggest that if rising trend in prices, yield and lagged area persists it will help farmers' expansion of its cultivation in future.

Keywords: Cash Crops, Acreage response, Price and non-price variables, Nerlovian model

EXTENSION PERSONNEL'S KNOWLEDGE ABOUT INFORMATION AND COMMUNICATION TECHNOLOGY

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Received-03.08.2020, Revised-31.08.2020

Abstract: Information and Communication Technologies are emerging as important tools for agricultural extension and it is now essential for every extension worker to have working knowledge of ICT tools and devices like computers, internet, mobile phone, kisan call center, information kiosks, e-mails, expert systems, touch screen systems, and World Wide Web. The present study was conducted in Udaipur district of Rajasthan. The state department of agriculture extension was purposively selected as a government organisation and eight NGOs working in agriculture with more use of ICTs were also selected from Udaipur district. To select a sample of respondents from the GO, 80 extension personnel were selected on the basis of random sampling technique. Likewise, 80 extension personnel from selected NGOs were taken on the basis of proportionate random sampling. Consequently, a total of 160 respondents (80 from GO & 80 from NGOs) were included in the sample of study. For the purpose of study five commonly used ICT tools namely computer, internet, mobile phone, kisan call centers and information kiosks were selected. It was noted that overall knowledge of respondents about computer, internet, mobile phone, kisan call center and information kiosk was 61.16, 57.22, 75.50, 58.45, and 45.82 per cent respectively. The knowledge of NGOs personnel was significantly higher than GO personnel about ICT tools.

Keywords: ICT, Extension personnel, Agriculture, Knowledge, GO and NGO

MORPHOLOGICAL IDENTIFICATION AND BIOCHEMICAL CHARACTERIZATION OF *XANTHOMONAS CAMPESTRIS* FROM MUSTARD AND CABBAGE AND ITS MANAGEMENT BY BACTERIAL ANTAGONISTS

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Received-12.08.2020, Revised-30.08.2020

Abstract: Field experiments were conducted during 2018-19 crop seasons to identify resistant genotypes for the management of black rot caused by *Xanthomonas campestris* pv. *campestris*. Morphological and biochemical characteristics of the pathogen were studied. Symptoms of disease were recorded 40-45 days after sowing in different localities of Meerut district of U.P. The optimum temperature for the growth was found 30°C and white light supported maximum growth of the bacterium. Disease was characterized by the initial symptoms appeared as dark color streaks on the stem from ground level, which girdle the stem making very soft and hollow followed by rotting. Lower leaves showed midrib cracking 'V' shaped yellowing on the leaf margin, browning of veins and weathering. Nutritional studies revealed that sucrose gave maximum growth followed by maltose, lactose, dextrose and fructose as the carbon source in the nutrient broth. Black rot of cabbage pathogen also infected other crops of cruciferae family such as cauliflower, mustard, radish and rapeseed. These findings regarding the pathogen may help to formulate the more appropriate way and judicious application of different management options against the disease in this zone.

Keywords: Cabbage, Mustard, *Xanthomonas campestris* pv. *Campestris*

EVALUATION OF FUEL WOOD CHARACTERISTICS OF SOME DECIDUOUS TREES AND SHRUBS OF THE KASHMIR REGION

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Received-10.08.2020, Revised-30.08.2020

Abstract: Fuelwood characteristics viz. Calorific value, Density, Ash content (%), Moisture content (%) were evaluated for 11 deciduous trees viz. *Robinia pseudoacacia* (Black Locust), *Prunus armeniaca* (Wild apricot), *Morus alba* (Mulberry), *Quercus rober* (Oak), *Ulmus villosa* (Elm), *Salix alba* (White willow), *Melia azedarach* (Drek), *Ailanthus altissima* (Tree of Heaven), *Populus nigra* (Black Poplar), *Albizia julibrissin* (Siris), *Fraxinus floribunda* (Ash tree) and two shrubs namely *Amorpha fruticosa* (Desert false indigo) and *Parrotia jacquemontina* (hatab) of Kashmir region. The results showed that fuel wood potential of the different tree and shrub species is in order as *Parrotia jacquemontina* (hatab) > *Prunus armeniaca* (Wild apricot) > *Robinia pseudoacacia* (Black Locust) > *Albizia julibrissin* (Siris) > *Amorpha fruticosa* (Desert false indigo) > *Ulmus villosa* (Elm) > *Quercus rober* (Oak) > *Fraxinus floribunda* (Ash tree) > *Ailanthus altissima* (Tree of Heaven) > *Morus alba* (Mulberry) > *Melia azedarach* (Drek) > *Populus nigra* (Black Poplar) > *Salix alba* (White willow),

Keywords: Calorific value, Firewood, Fuelwood value index (FVI), Deciduous trees and shrubs, Kashmir

STABILITY ANALYSIS FOR GRAIN YIELD AND ITS CONTRIBUTING TRAITS IN BREAD WHEAT (*TRITICUM AESTIVUM* L.)

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Received-17.06.2020, Revised-04.08.2020

Abstract: The present investigation carried out by to assess the phenotypic stability for grain yield and its contributing traits under three varied environmental conditions using 10 diverse wheat genotypes and 45 F₁S. The mean sum of squares due to genotypes and environments were found to be significant for all the characters, indicating differential effect of environment on the genotypes. G x E interaction was found significant for all the characters except spike length and biological yield per plant. Similarly the pooled analysis of variance showed that the mean squares due to E + (G x E) interaction was partitioned into G x E (linear) and pooled deviation (nonlinear components). Mean sum of squares due to G x E (linear) component and pooled deviation (nonlinear component) was significant for all the characters. The genotypes Raj 3765, Raj 3777, Raj 4238 x WH 1021, Raj 3077 x Raj 3777 had higher yield and were suitable for variable environmental conditions. These genotypes could be utilized as a donor in routine breeding programme to improve grain yield and its contributing traits in bread wheat.

Keywords: Bread wheat, Stability, Grain yield, Genotype x environment interactions

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PERFORMANCE OF NEW HERBICIDE MOLECULES FOR WEED MANAGEMENT IN MAIZE

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Received-09.08.2020, Revised-28.08.2020

Abstract: A field experiment on “performance of new herbicide molecules for weed management in maize” was conducted on the RMD College of Agriculture & Research Station, Ambikapur, during the *kharif* season of 2019-20. Soil of the experimental field was sandy loam in texture. Nine treatments herbicidal combination of weed management practices were study in randomized block design and 3 times replicated under rainy season. weed control treatments atrazine 1000 g ha⁻¹ (P.E.) fb topramezone 25.2 g ha⁻¹ at 25 DAS was preformed mostly higher than all the other herbicidal treatments for growth, yield attributes viz., cob length, cob girth, number of kernel rows cob⁻¹, number of kernels row⁻¹, 100 kernel weight and kernel yield (5954.00 kg ha⁻¹) and also found lower weed density, lower weed dry weight and effective for complex weed flora. which was found statistically at par with atrazine 1000 g ha⁻¹ (P.E.) fb tembotrione 120 g ha⁻¹ at 25 DAS and atrazine 750 g ha⁻¹(P.E.) fb topramezone 25.2 g ha⁻¹ at 25 DAS. At 60 DAS, lower weed index and higher weed control efficiency recorded with atrazine 1000 g ha⁻¹ (P.E.) fb topramezone 25.2 g ha⁻¹ at 25 DAS. Although weed free check is most effective treatment as compare to herbicidal combinations. Highest net returns and B:C ratio was recorded in atrazine 1000 g ha⁻¹ (P.E.) fb topramezone 25.2 g ha⁻¹ at 25 DAS (66082.62 ha⁻¹ and 1.49) followed by higher net return under atrazine 1000 g ha⁻¹ fb tembotrione 120 g ha⁻¹ at 25 DAS (62573.43 ha⁻¹), atrazine 750 g ha⁻¹ fb topramezone 25.2 g ha⁻¹ at 25 DAS (62506.87 ha⁻¹) and higher B:C ratio atrazine 750 g ha⁻¹ fb topramezone 25.2 g ha⁻¹ at 25 DAS (1.42) and atrazine 1000 g ha⁻¹ fb tembotrione 120 g ha⁻¹ at 25 DAS (1.39).

Keywords: Maize, Weed management, Herbicide Combinations

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INTEGRATED NUTRIENT MANAGEMENT IN HYBRID MAIZE (ZEA MAYS)

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Received-04.08.2020, Revised-26.08.2020

Abstract: A field experiment was conducted to evaluate the effect of Integrated Nutrient Management in Hybrid Maize (NK 6240). Field experiment was conducted during kharif season with thirteen different treatments which were replicated thrice in Randomized Block Design (RBD). The influence of Beema green granules, Uphaar as organic foliar spray, Tracel as inorganic foliar spray on the growth, yield, nutrient uptake, and availability of nutrients in soil was observed. The application of RDF + Beema green granules (25 kg ha⁻¹) soil application + Uphaar (250gm ha⁻¹) and Tracel (3.75kg ha⁻¹) foliar spray has shown an increase in plant height (292.16 cm), dry matter production (16505 kg ha⁻¹), cob length (25.25 cm), cob diameter (6.25 cm), grain numbers cob⁻¹ (448), grain yield (6260.50 kg ha⁻¹) and stover yield (8840 kg ha⁻¹). Uptake of nutrients viz., Nitrogen, Phosphorus and Potassium was found maximum while the available status of NPK was minimum under the above treatment.

Keywords: Maize, Yield, Organic and inorganic nutrient, Foliar spray

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STUDIES ON PHYSICO-CHEMICAL CHARACTERISTICS OF ORANGE BASED PANEER WHEY BEVERAGE

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Received-05.08.2020, Revised-26.08.2020

Abstract: Whey is a nutritious by product obtained from paneer, channa, cheese containing valuable nutrients like lactose, proteins, minerals and vitamins etc., which have indispensable value as human food. The orange flavoured paneer whey beverage was prepared with the addition of different level of whey, sugar and orange juice. The paneer whey beverage was prepared by using different levels of orange juice@ 10, 15, 20, 25 and 30 per cent with 8 per cent sugar. The overall acceptability of paneer whey beverage prepared with 25 per cent orange juice level was significantly superior and more acceptable than other levels of orange juice. Also formulations were prepared was studied for the chemical analysis on an average the orange flavoured paneer whey beverage of treatment T₁, T₂, T₃, T₄ and T₅ contained fat 0.49, 0.45, 0.41, 0.33 and 0.23 per cent, protein 0.42, 0.49, 0.54, 0.58 and 0.65 per cent, total sugar 14.48, 15.10, 15.58, 15.89 and 16.19 per cent, acidity 0.49, 0.53, 0.57, 0.62 and 0.65 per cent, pH 4.71, 4.56, 4.33, 4.12 and 3.93, respectively. The percentage of fat and pH content of the product decreased with increasing level of orange juice but the percentage of protein, total sugar and acidity content increased with increasing level of sugar.

Keywords: Paneer whey, Orange juice, Beverage

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RESPONSE OF RAINFED MAIZE (ZEAMAYS) AS INFLUENCED BY VARIOUS INTEGRATED NUTRIENT MANAGEMENT PRACTICES

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Received-08.07.2020, Revised-29.08.2020

Abstract: A field experiment was conducted at Research farm, Ambikapur during the kharif season of 2018-19 to study the various integrated nutrient management practices on production and profitability of maize. The experiment was conducted in randomized block design and replicated thrice. The eleven nutrient combinations 100% RDF (150:80:60 NPK kg ha⁻¹), 75% RDF, 50% RDF excluding and including FYM and used *Azotobacter* and legume intercropping in three treatments and

compared with state practice. Amongst the various nutrient management practices, the higher grain yield was recorded with application of 100% RDF + FYM 5 t ha⁻¹ (7846.7 kg ha⁻¹) was significantly superior over all other treatments. However, it was on par with 100% RDF + Zn 5 kg ha⁻¹ (7313.3 kg ha⁻¹) and 100% RDF (6717.8 kg ha⁻¹). Stover yield, shelling percentage and harvest index was recorded significantly higher with 100% RDF + FYM 5 t ha⁻¹. Again 100% RDF + FYM 5 t ha⁻¹ was the best treatment with the highest net return (₹ 68814.9) and benefit cost ratio (1.58) found at par with 100% RDF + Zn 5 kg ha⁻¹ (₹ 64138.2 and 1.56, respectively) and 100% RDF (₹ 55957.4 and 1.38, respectively)

Keywords: Integrated nutrient management, Maize, Net return

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FIRST RECORD OF *FUSARIUM* TUBER ROT IN *BORASSUS FLABELLIFER* L. SEEDLINGS FROM INDIA

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Received-08.08.2020, Revised-30.08.2020

Abstract: This article reports the first case of *Fusarium solani* caused tuber rot in *Borassus flabellifer* from India.

Keywords: Fusarium, India, Palmyra, Seedling, Tuber rot