

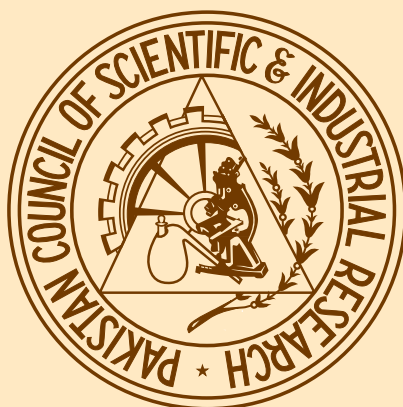
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Emerging Antimicrobial Resistance in *Helicobacter pylori* Strains Isolated from Gastric Disease Patients in Karachi, Pakistan

Faisal Rasheed^{a*}, Adnan Khan^a, Amber Farooqui^a, Tanvir Ahmad^b, Hamid Manzoor^c, Syed Shakeel Akhtar^c, Mohammed Saeed Quraishy^d and Shahana Urooj Kazmi^a

^aImmunology and Infectious Diseases Research Laboratory (IIDRL), Department of Microbiology, University of Karachi, Karachi-75270, Pakistan

^bLife Science Group, Isotope Application Division (IAD), Pakistan Institute of Nuclear Science and Technology (PINSTECH), Islamabad, Pakistan

^cMedical Unit II, Civil Hospital, Dow University of Health Sciences, Karachi, Pakistan

^dDepartment of Surgery, Dow University of Health Sciences, Karachi, Pakistan

(received July 28, 2010; revised February 7, 2011; accepted February 28, 2011)

Abstract. In the assessment of the antimicrobial susceptibility of *Helicobacter pylori* strains isolated from gastric biopsies of patients with gastric diseases against commonly prescribed antibiotics in Pakistan, 31 strains were subjected to antimicrobial susceptibility testing using disk diffusion method against seven antimicrobial agents. Most of the isolates showed resistance to metronidazole (93.5%), while only 6.5% isolates were resistant to ofloxacin. The isolates also exhibited variable resistance to other five antibiotics including clindamycin (61.3%), tetracycline (48.4%), erythromycin (41.9%), clarithromycin (38.7%) and amoxicillin (29.0%). Multiple drug resistance in local *H. pylori* isolates was also observed.

Keywords: antimicrobial resistance, *H. pylori*, culture, disk diffusion

An Integrated Nutrient Management Approach for Improving Maize (*Zea mays* L.) Yield

**Naveed Iqbal, Asghar Ali, Muahammad Ather Nadeem, Muhammad Waseem*,
Muhammad Tahir, Muhammad Shahid Ibni Zamir and Asif Iqbal**

Department of Agronomy, University of Agriculture, Faisalabad, 38040, Pakistan

(received May 10, 2010; revised September 8, 2010; accepted September 16, 2010)

Abstract. The study of integrated use of chemical fertiliser and compost showed beneficial effects on growth and yield of maize. Plant height, number of grain rows per cob, number of grains per row, number of grains per cob and 1000-grain weight were significantly affected by all the treatments. However, grain yield, biological yield, harvest index and grain-pith ratio were significantly affected by compost and chemical fertiliser alone or in certain combinations. The highest grain yield of 7.18 t/ha was obtained with the application of 25% nitrogen from compost + 75% nitrogen from chemical fertiliser.

Keywords: maize, compost, chemical fertiliser

Effect of Methods of Nutritional Administration on the Development of Silkworm *Bombyx mori* L.

Rashid Mahmood^a, Saima Asad^b, Shazia Raja^{a*}, Ghulam Sarwar and Farida Iftikhar^a

^aHoneybee Research Institute, National Agricultural Research Centre, Islamabad, Pakistan

^bPMAS-Arid Agriculture University, Murree Road, Rawalpindi, Pakistan

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Abstract. The effect of nitrogen in different concentrations (0.1, 0.2, 0.3 and 0.4 %) through soil, foliar application and dipping of mulberry leaves on food consumption, larval development and cocoon weight of silkworm (*Bombyx mori* L.) was studied. Larvae when fed on wet mulberry (*Morus alba laevigata*) leaves dipped in 0.2% N concentration proved the best, as it consumed maximum food (5726.26 mg), gained significantly more weight (3182.30 mg) and produced heavier cocoons (424.65 mg) as compared to all other treatments. Food efficiency ratio (FER: 4.43) and coefficient of utilization (CU: 67.61) were also maximum for the leaves dipped in 0.2% N.

Keywords: *Morus alba laevigata*, larvae, farmyard manure, nitrogen, *Bombyx mori* L, cocoon weight

Peste Des Petits Ruminants of Goats, Outbreak and Economic Losses : A Case Study

Ausraful Islam^{*ac}, Amitav Singha^a, Mohammad Amirul Islam^b and Shankar Majumder^b

^aProgramme on Infectious Diseases and Vaccine Sciences, Health Systems and Infectious Diseases Division, International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh

^bDepartment of Agricultural Statistics, Faculty of Agricultural Economics and Rural Sociology, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh

^cGPO Box 128, Dhaka 1000, Bangladesh

(received May 13, 2010; revised August 5, 2010; accepted August 25, 2010)

Abstract. In the determination of outbreak of peste des petits ruminants (PPR) and the economic losses caused by the disease 1392 distributed goats at Dimla thana of Nilfamari district, purchased from different markets, were studied during March, 2007 to May, 2007. Among the distributed goats, 54.7% died before treatment, 14.7% died after treatment and 30.6% survived after treatment. Survival rate was 67.51%. Maximum number (77.6%) of goats died before treatment in the flocks of Modhupur. Survival rate of the treated goats in the locally purchased flock was the highest (98.9%) whereas that in the goats purchased from Lalmonirhat was the lowest (34.3%). Survival percentage of the non-vaccinated goats was higher (71.60%) than that of the vaccinated goats (64.95%). Among the treated goats, 7.9% were pregnant, 4.4% of them aborted and 3.5% remained pregnant though they were infected. Infectious keratoconjunctivitis (IKC) was observed in 2.5% PPR infected goats. The total economic loss was estimated at Bangladesh Tk 10,16434 (\$ 14520.49). Locally collected goats had the highest probability (80.6%) of survival after treatment whereas those collected from Rangpur had the highest probability (81.3%) of death before treatment. Probability that the goats will die after treatment was the highest among the goats purchased from Lalmonirhat (59.5%). Survival of goats was significantly ($P < 0.05$) associated with place of purchase. Goats purchased from the local areas were 26.8 times more likely to survive than those collected from Modhupur. Goats of Lalmonirhat were 1.993 times more likely to survive than those of Modhupur.

Keywords: Peste des petits ruminants, goats, mortality rate, economic losses, Bangladesh

Nematicidal Potential of the *Galinsoga parviflora*

**Sadia Ferheen^a, Musarrat Akhtar^a, Agha Nisar Ahmed^a, Muhammad Aijaz Anwar^{a*},
Mahboob Ali Kalhoro^a, Nighat Afza^a and Abdul Malik^b**

^aPharmaceutical Research Centre, PCSIR Laboratories Complex, Karachi-75280, Pakistan

^bHEJ Research Institute of Chemistry, International Centre for Chemical and Biological Sciences, University of Karachi, Karachi-75270, Pakistan

(received May 10, 2010; revised December 16, 2010; accepted December 21, 2010)

Abstract. Seven pure compounds of the *Galinsoga parviflora*: β -sitosterol (1); octacosanoic acid (2); ursolic acid (3); 4-hydroxybenzoic acid (4); 3,4-dihydroxybenzoic acid (5); gallic acid (6); β -sitosterol' 3-O-, β -D glucopyranoside (7) and the plant crude extract fractions were assayed in the laboratory for their nematicidal properties against plant parasitic nematodes *Meloidogyne incognita* (root-knot) and *Cephalobus litoralis* in different concentrations after 24 and 48 h. It was observed that crude extract, hexane, chloroform, ethyl acetate, methanol fractions and compounds no 1, 3, 4, and 7 showed significant activity whereas compounds 2, 5 and 6 showed low order of mortality.

Keywords: *Galinsoga parviflora*, alcoholic extract, *Meloidogyne incognita*, *Cephalobus litoralis*, nematicidal activity.

Effect of Added Modified Water Chestnut (*Trapa bispinosa*) Starch on Physical and Sensory Properties of Yeast Leavened Breads

Zubala Lutfi*, Ayesha Siddique and Abid Hasnain

Department of Food Science & Technology, University of Karachi, Karachi-75270, Pakistan

(Received May 5, 2010; revised September 4, 2010; accepted October 18, 2010)

Abstract. The effects of using different concentrations of chemically and physically modified water chestnut (*Trapa bispinosa*) starch (WCS) on loaf weight, volume and specific volume of yeast leavened bread were studied. The highest loaf weight was obtained by the addition of native water chestnut starch at 3 % concentration, while the opposite effect was observed regarding the loaf volume and specific volume. The highest loaf volume and the specific volume was obtained on addition of WCS, pregelatinized and acetylated (pga), at 1% concentration. Maximum mean score (7.8) was obtained by native water chestnut starch at concentration of 5% and minimum mean score was obtained by pgaWCS at 1% concentration with respect to the taste of bread. Regarding the texture, the maximum mean score (7.5) was that of the bread containing 5% pga (pregelatinized and acid thinned) WCS and minimum mean score (4), that of the bread containing 5% acetylated water chestnut starch.

Keywords: water chestnut, loaf weight, loaf volume, specific volume

Antioxidant Activity of the Extracts Derived from *Terminalia catappa*

**Rahmanullah Siddiqi*, Shahina Naz, Syed Muhammad Ghufraan Saeed and
Syed Asad Sayeed**

Department of Food Science & Technology, University of Karachi, Karachi-75270, Pakistan

(received April 6, 2010; revised February 7, 2011; accepted March 28, 2011)

Abstract. The extracts derived from *Terminalia catappa* leaves and fruit following antioxidant activity directed isolation, were screened for their antioxidant activity through their ability to scavenge DPPH radicals. Only fractions which exhibited >50% DPPH scavenging effect at each step of isolation were selected for further purification and judge their ability to reduce peroxide formation (peroxide value) in heated corn oil. The results indicated that crude ethanolic extract, aqueous fraction of crude extract and its sub fractions (petroleum ether and ethylacetate) possessed prominent antioxidant activity. In addition, phytochemical analysis showed that the five fractions obtained finally contain simple phenols, anthocyanins, phenyl propanoids and flavanols.

Keywords: *Terminalia catappa*, antioxidant activity, activity directed isolation, phytochemical analysis

Effect of Mild Treatments on Some Physicochemical and Pasting Characteristics of Flour from Two Cocoyam Cultivars

Daramola Bode

Department of Food Technology, Federal Polytechnic, PMB 5351, Ado - Ekiti, Ekiti State, Nigeria

(received March 4, 2010; revised September 30, 2010; accepted October 6, 2010)

Abstract. Effect of mild treatments namely; one-step annealing (AN), partial-nixtamalization (NIX) and phenolic-admixture (VAN) on some physicochemical and pasting characteristics of flour prepared using two cocoyam cultivars was studied. Both annealing treatment and phenolic admixture resulted in high peak viscosities ($PV^{AN}_{white} = 322.50$ RVU; $PV^{VAN}_{white} = 306.67$ RVU) of samples comparative to low peak viscosity ($PV^{control}_{white} = 227.25$ RVU) of the control for white cultivar. Similarly, the peak viscosities ($PV^{AN}_{red} = 310.70$; $PV^{VAN}_{red} = 296.45$) of samples were higher than the peak viscosity ($PV^{red}_{control} = 225.42$ RVU) of the control for red cultivar. Assessment revealed positive set back viscosities ($SBV^{AN}_{red} = + 9.30$ RVU; $SBV^{AN}_{white} = + 21.33$ RVU) for both the varieties after annealing treatment. Partial- NIX treatment showed molecular depolymerization. Interaction of treatments at levels employed in this study showed no synergistic effect. The pH of treated and control samples were within low acid range for foods. Mild treatment could be useful for tempering cocoyam flour for preparation of bakery and similar pasta products.

Keywords: cocoyam cultivars, flour, pasting characteristics

Effect of Bran Roasting Temperature and Time on Yield and Quality Attributes of Rice Bran Oil

James Abiodun Adeyanju^{a*}, Rahman Akinoso^b and Emmanuel Adedapo Akande^a

^aDepartment of Food Science and Engineering, Ladoke Akintola, University of Technology,
LAUTECH, Ogbomoso, Nigeria

^bDepartment of Food Technology, University of Ibadan, Ibadan, Nigeria

(received December 1, 2010; revised April 4, 2011; accepted May 3, 2011)

Abstract. The effects of bran roasting temperature (160-200) °C and time (5-35 min) on the yield and quality attributes of 'Ofada' rice bran oil were studied so as to optimize the processing conditions for maximum oil yield with least deterioration of qualities. The physico-chemical parameters of oil studied included: yield, free fatty acids, peroxide value and colour, which were recorded as 14.50%, 5.80% (as oleic), 8.25 meq / kg and 1.51 abs, respectively. The optimum conditions were 200 °C roasting temperature and 15 min roasting time. With increasing the roasting temperature from 160-200 °C and the time 5-35 min, the oil yield and colour increased 11.31-14.50% and 1.51-1.58 abs, respectively, while free fatty acid and peroxide values decreased from 12.75-5.80% and 13.75-8.25 meq / kg, respectively.

Keywords: rice bran, roasting time, roasting temperature, rice bran oil

Short Communication

Response of Rice to Zn Application Under Salt Affected Soil in Hafizabad District, Pakistan

Arshad Ali, Muhammad Arshadullah*, Imdad Ali Mahmood, Syed Ishtiaq Hyder and Badr-uz-Zaman

Land Resources Research Institute, National Agricultural Research Centre, Islamabad, Pakistan

(Received August 10, 2010; revised October 8, 2010; accepted October 10, 2010)

Abstract. The effect of different levels of Zn (0, 5, 10 and 15 kg/ha) was evaluated on growth and ionic concentration of rice variety (cv. CM.204) directly sown on raised bed under saline-sodic soil. Tillering, number of grains/spike, 1000 grain weight and paddy yield significantly ($p = 0.05$) increased with the increase in the rate of Zn application. Paddy yield was the maximum at the application of 15 kg Zn/ha, being 29% more than the control treatment. The maximum number of tillers/hill (62), number of grains/spike (121) and 1000 grain weight (26.40 g) were recorded with Zn application @ 15 kg/ha. The maximum paddy yield (7906 kg/ha) was attained @ 15 kg Zn/ha. The maximum Zn (45 ppm) in grain was determined from treatment receiving 15 kg Zn/ha followed by 10 kg Zn/ha (38 ppm).

Keywords: rice response, Zn application, saline-sodic soil

Short Communication

Physicochemical, Toxicological and Hypoglycemic Activities of *Jatropha curcas*

Muhammad Aijaz Anwar, Mahboob Ali Kalhoro*, Rashid Ali Khan and Nighat Afza

PRC, PCSIR Laboratories Complex, Shahrah-e-Dr. Salimuzzaman Siddiqui, Karachi - 75280, Pakistan

(received June 3, 2010; revised March 5, 2011; accepted April 28, 2011)

Abstract. Hypoglycemic, toxicological and physicochemical studies of the aerial parts of *Jatropha curcas*, were undertaken. For the toxicological activities the aqueous fraction, alcoholic extract, chloroform fraction and petroleum ether fraction were used, whereas alcoholic extracts of leaves and stem were used for hypoglycemic activities. The leaves extract of the plant showed rich hypoglycemic properties.

Keywords: *Jatropha curcas*, physicochemical properties, toxicological properties, hypoglycemic properties
