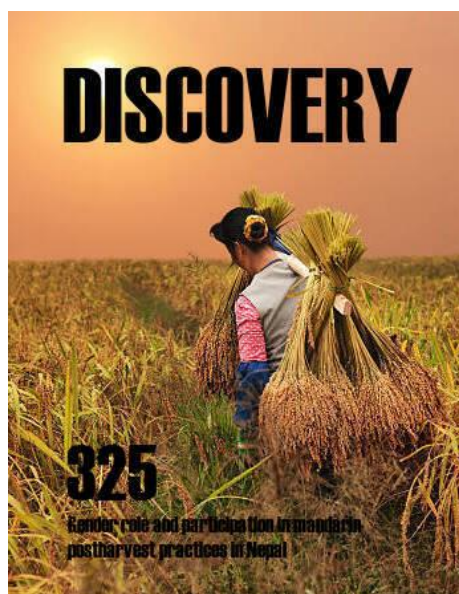


DISCOVERY

About the Cover



This study was conducted to assess gender role and participation in mandarin postharvest activities in Nepal. Two districts under Gandaki province, Tanahun and Syangja were selected for study purpose. A total of 90 Mandarin farmers, 45 from each district were selected using simple random method of sampling. Semi-structured pre-tested interview schedule was used for primary data collection. Two focus group discussions and field observation of mandarin orchard was carried out. Data were analyzed by using both descriptive and inferential statistics. This paper explored the gender involvement in four major postharvest activities of mandarin farming. The findings indicated that female participation was higher in mandarin grading (43.3%) followed by mandarin packaging (22.2%), mandarin marketing (16.7%) and mandarin harvesting (15.6%). Similarly, it was noticed that male participation was more (59.9%) in marketing operation than others. Likewise, study showed that among female respondents only 28% female were acquainted with post-harvest related information while awareness among males was 49%. Furthermore, it was also observed that male dominates female in terms of wage rate in mandarin post-harvest activities which was primarily due to social context, accessibility and out migration situation. To make an impact to increase gender role and participation in mandarin postharvest operation, concerned program and organization need to consider gender dimension (unbiasedness, awareness, personal behaviour) and post-harvest knowledge associated with it ensuring female farmers can be better empowered in reducing postharvest loss. (Ref: Acharya Y, Sapkota S. Gender role and participation in mandarin postharvest practices in Nepal. *Discovery* 2023; 59: e3d1012).

Evaluation of some rheological properties of *Jatropha curcas* L. Seed oil necessary in overcoming energy crisis problem

Egbe EW, Tulagha I, Tariibi K

This research was carried out to investigate the rheological properties of *Jatropha Curcas* L. seed oil. The parameters studied were the dynamic viscosity of the oil and the shear stress at different shear rate and temperatures. The dynamic viscosity was measured to be 151.8cp to 98.8cp at 6rpm, 82.0cp to 51.9cp at 12rpm, 42.2cp to 22.9cp at 30rpm and 25.3cp to 14.9cp at 60rpm all at varying temperatures of 30°C to 70°C using NDJ-S5 viscometer. The shear stresses obtained ranged from 91.8 N/m² to 59.28 (N/m²) at varying temperatures ranging from 30°C to 70°C at 10°C intervals, and were dependent on the shear rates. The results showed that viscosity decreased with an increase in temperature. Power law model was used to describe the viscosity to shear stress relationship and the flow behavior index (n) obtained which were closed to one indicated that *Jatropha Curcas* L. seed oil exhibited a Newtonian behavior. The results can be used to predict the design texture, storage and flow processes of *Jatropha Curcas* L. seed oil which is necessary overcoming the energy crisis issue and limiting environmental changes.

Discovery, 2023, 59, e1d1001

Comparative study and physico-chemical analysis of kinnersani, palair and wyra reservoir waters of khammam, Telangana, India

Mohammad MJ, Ravi Kumar T, Hari Teja K, Narsimharao T, Premkumar B, Sai Chand M, Mani kumar D

In order to determine the water quality, samples of water collected from Kinnersani, Palair and Wyra reservoirs of Khammam district, it was collected in acid wash bottles in early hours. Physico-chemical analysis different parameters were analyzed like PH, Turbidity (NTU), Electrical Conductivity (micro mhos), Total dissolved Solids (mg/l) Chloride (mg/l), Sulphate (mg/l), Nitrate (mg/l), total Alkalinity (mg/l), total Hardness (mg/l), Calcium (mg/l), Fluoride (mg/l), Iron (mg/l). Each parameter was compared with the standard desirable limits of different agencies like BSI (Bureau of Indian standards), WHO (World Health Organization) standards. In this Kinnersani, Wyra, Palair reservoirs best and within the limitations of results are shown by Kinnersani reservoir

Discovery, 2023, 59, e2d1006

Gender role and participation in mandarin postharvest practices in Nepal

Yogendra Acharya, Sudha Sapkota

This study was conducted to assess gender role and participation in mandarin postharvest activities in Nepal. Two districts under Gandaki province, Tanahun and Syangja were selected for study purpose. A total of 90 Mandarin farmers, 45 from each district were selected using simple random method of sampling. Semi-structured pre-tested interview schedule was used for primary data collection. Two focus group discussions and field observation of mandarin orchard was carried out. Data were analyzed by using both descriptive and inferential statistics. This paper explored the gender involvement in four major postharvest activities of mandarin farming. The findings indicated that female participation was higher in mandarin grading (43.3%) followed by mandarin packaging (22.2%), mandarin marketing (16.7%) and mandarin harvesting (15.6%). Similarly, it was noticed that male participation was more (59.9%) in marketing operation than others. Likewise, study showed that among female respondents only 28% female were acquainted with post-harvest related information while awareness among males was 49%. Furthermore, it was also observed that male dominates female in terms of wage rate in mandarin post-harvest activities which was primarily due to social context, accessibility and out migration situation. To make an impact to increase gender role and participation in mandarin postharvest operation, concerned program and organization need to consider gender dimension (unbiasedness, awareness, personal behaviour) and post-harvest knowledge associated with it ensuring female farmers can be better empowered in reducing postharvest loss

Discovery, 2023, 59, e3d1012

Separation and determination of the environmental toxic metals using polymer anchored Azomethine complexes

Sreenadha Sarma T, Sreeramulu J, Siddaiah M

The effects of Environmental Toxic Metals on human health have long been known and the literature dealing with the subject is immense. The analysis of pollutants by using suitable complexing agent is centered on the development of sensitive technique for detection, determination and remove of contaminants from polluted air, water and land. In view of the importance of Azomethine compounds in pharmaceutical as well as industry, the immobilized polymeric reagents for various analytical analysis, the studies mainly focused on the synthesis of new polymeric reagents for anchoring different Azomethine ligands to polymer matrix. The new polymeric reagents by linking Azomethines to different polymers (Polymer Anchored Azomethines) will be used for Extraction of toxic metal ions (Inorganic pollutants) present in Industrial effluents. The nature and amount can be understood in environmental trace chemistry of pollutants by employing advanced instrumental methods

Discovery, 2023, 59, e4d1007

The impact of flood relief funds on affected people's social wellbeing in Pakistan

Muhammad Imran, Khalid Zaman, Awais Rashid

The monsoon season triggered the worst floods in Pakistan's history, wiping out whole towns and putting an estimated 3.4 million children at risk of water contamination, drowning and famine. This research used a literature review and a survey of first-hand accounts to investigate how distributing flood relief aid in Pakistan affected the social well-being of those who received aid between August and September 2022. Affectees' social well-being increased after receiving social assistance (relief funds) and decreased after a natural disaster. Interviews and discussions about flood relief funds and financial support to affectees of the 2022 Pakistani flood also revealed much emotional and knowledge-based support from interviewees. Not to mention the unity that the country's many parts reflect via their cooperation. Affected communities get substantial assistance from natural disaster management teams, local teams, non-governmental organizations and private citizens. In the aftermath of a natural catastrophe, businesses and individuals from all walks of life band together to provide financial aid to those impacted by the flood. In addition, they received material to aid in building supplies for their homes and businesses. Not only that, but also the non-monetary aid provided to flood victims in the form of food, survival equipment and the restoration of a nation's economy. Similar criticism was leveled at how governments collected and dispersed flood relief funding, how natural disasters were managed and how those affected by floods were rebuilt. Improved disaster preparedness and response and more resilient rural infrastructure were among the study's recommendations. Predicting future climatic and environmental changes may also be aided by bettering natural information warning and natural disaster management systems and enhancing the efficiency and competence of urban-rural people with educational facilities

Discovery, 2023, 59, e5d1011

Model comparison of corrosion rate on saline and fresh water environments

Achinike W, Ekperi NI, Okogbule-Wonodi Achinike

In this research work, two coupons of equal mass were immersed in saline and fresh water environment respectively. The immersed coupons were observed to have lost weight. Their weight loss which was as a result of corrosion was measured periodically at intervals of one week for a total period of two months. The corrosion rates of the two different environments were then determined and compared accordingly. The fresh water, specimen the corrosion rate was slightly high in the beginning of the experiment but then continued at an approximate constant rate with an increase at the last week of the experiment, the low number of ions in the waters were responsible for this behavior since the available oxygen and the medium will form a corrosion cell and initiate the corrosion process until passive films were formed then rate became constant The examinations show that the corrosion rate in a saline environment is double of the corrosion rate in a fresh water environment

Discovery, 2023, 59, e6d1009

Variation in asphalt concrete properties with testing mode

Saad Issa Sarsam

Asphalt concrete beam specimens were tested under controlled strain and stress conditions for dissipated energy, phase angle, flexural stiffness and permanent deformation. It was observed that higher permanent deformation, flexural stiffness and cumulative dissipated energy is achieved under constant strain mode. However, lower phase angle could be observed under constant strain mode. The fatigue life of constant strain mode of testing is longer by 128.5 % and the permanent deformation is higher by 733 % than that of constant stress mode of testing respectively. After the first load repetition, the constant stress mode exhibits a high phase angle of 47° as compared with 17° for constant strain mode. It was concluded that higher dissipated energy is required in case of constant stress while lower dissipated energy is required in case of constant strain to exhibit a permanent deformation than that required for the constant stress mode. Choice of the testing mode of asphalt concrete is essential in the evaluation of asphalt concrete properties and the variation in such properties is significant among the testing mode.

Discovery, 2023, 59, e7d1010

SOCIAL SCIENCE

The awareness and effectiveness of environmental education among undergraduate students

Emmanuel Faith Igwe, Akinnubi Rufus T

This study examined the level of awareness and effectiveness of environmental education among tertiary students in Adeyemi College of Education, Ondo. A self-designed, structured questionnaire was used on a sample of one hundred (100) students to elicit information from them on their knowledge of environmental education. Mean, standard deviation and t-test were employed to analyze the data obtained. The findings revealed that most students were aware of the key environmental issues and they also understood the causes of some of these environmental issues. The findings further show that students had ideas about the problems facing the effectiveness of environmental education. This data was used as a springboard for exploring ways by which environmental education (EE) in tertiary institutions might capitalize on student knowledge and hence progress towards environmental action taking; and how this might occur through tertiary students being nurtured into the role of informed decision-makers and action-takers. Furthermore, it is therefore recommended that interactive teaching methodologies should be adopted in enhancing active teaching and learning of Environmental Education. The study finally concluded that environmental education in tertiary schools must be given equal importance like other conventional courses so that students who are the future citizens must be encouraged in eco- friendly activities for solving environmental problems

The effects of classroom exercise and home assignment on the academic performance of students in mathematics in Nigerian secondary school

Sunday IA, Ganiyu AA

This paper is designed to investigate the effects of classroom exercise and home assignment on the academic performance of students in Mathematics in Nigerian senior secondary schools. Random sampling technique was used for the purpose of the study. Three secondary schools were randomly picked for this study. Data for the study were collected from the selected schools through the use questionnaires, pre-test and post test. One hundred and twenty (120) students consisting both boys and girls were selected at random from each school. The data was analyzed using Pearson's Product Moment Correlation, Analysis of Variance and t-test. Analysis of the result shows that there is significant relationship between class work and home assignment and students' academic performance in Mathematics. Also, students taught using home assignment performed significantly better than students in the other groups who were not exposed to home assignment. This confirms the result of the hypotheses which states that with adequate classroom exercise and home assignment, students will have better performance in Mathematics. Based on the outcome of these findings, it was recommended that actions should be built into policies of Nigeria that teachers should endeavour to give home assignments to their students after classroom work daily and parents and wards should recon with take home assignments by monitoring their children at home in ensuring that they do the assignment given to them by their teachers on daily basis to improve the performance of their children in Mathematics

Discovery, 2023, 59, e9d1003

Safe spaces: Need and concern of "Trans" Community

Viney Dhiman, Anupama Bharti

Gender is a human social system with different sex, roles, characteristics appearances, identify among male and female. This system transit their norms and culture to both sex and gender into human body. According to stone, (2004) "Everyone has an internal sense of their gender and this sense is called gender identity". Transgender people are person with different age, sex, appearance, as compare with men or women. These people have existed in every culture, race and class since the story of human life has been recorded. The term "transsexual" is a new concept as different with the concept of transgender. In its broadest sense, transgender encompasses anyone whose identity or behavior falls outside of stereotypical gender norms. Transgender is a broad term used to describe those whose gender, gender identity, or gender expression is in some sense different from, or transgresses social norms for, their assigned birth sex. Transgender may include those who identify as being transsexual, cross dressers, androgynous, bi-gender, no-gender or multi-gender, gender queer and a growing number of people who do not identify as belonging to any gender category at all. Transgender term is always creating controversies because society just except only two genders i.e. male or female. This is the reason that "trans" community is facing struggle to gain their human rights or face difficult to accept them socially. Every person classified as by one gender only. India, there are a host of socio-cultural groups of transgender people like Hijras/ Kinnars and other transgender identities like-Shiv-Shaktis, Jogtas, Jogappas, Aradhis, Sakhi, etc. Hijras earn a livelihood through prostitution or performing traditional ceremony which occurs whenever a new baby is born and during marriages in the General community. The traditional ceremony composed of music, singing and dancing performed at the home of the new infant. The parents negotiate a payment before or after ceremony for Hijras.

Discovery, 2023, 59, e10d1008

ENGINEERING

Thermal behavior of asphalt concrete under various microstrain levels

Saadi Sarsam

Deterioration of asphalt concrete through the service life is related to the vehicular loading and environment impact. The present work assessed the influence of microstrain level and environment on the permanent microstrain and fatigue life of asphalt concrete. Beam specimens obtained from laboratory prepared slab samples of asphalt concrete were tested under dynamic flexural stresses under three microstrain levels of (750, 400 and 250). Two testing temperatures have been implemented, (5 and 30)°C. The permanent deformation in terms of microstrain was monitored. It was detected that the permanent microstrain increases by (153, 33.3 and 56.2,)% under microstrain levels of (750, 400 and 250) respectively at a testing environment of 30 °C as compared with that at testing environment of 5 °C. It was revealed that the fatigue life increases by (12.3, 2.3, 14 and 12.3) folds under microstrain levels of (750, 400 and 250) respectively when the testing environment rises from (5 to 30)°C

Discovery, 2023, 59, e11d1004

Morphological, electrical and magnetic properties of BaAl₂Fe₁₂O₂₂ nano sized powders using chemical co-precipitation technique

Akant AK, Rathod UV, Giriya MN, Khobaragade CL

In the present investigation, the samples with chemical composition $\text{BaAl}_2\text{Fe}_{12}\text{O}_{22}$ have been synthesized using perfect stoichiometric proportions of nitrates by chemical co-precipitation technique. The pellets of 15 mm diameter were prepared and sintered at 1100°C for 6 and 4 hrs and at 1000°C for 6 hrs separately. The characteristic studies have been done using XRD, SEM, electrical and magnetic properties. XRD studies of the samples showed hexagonal Y-type structure with unit cell dimensions 'a' and 'c' varies from $a = 5\text{\AA}$ to 6\AA and $c = 43\text{\AA}$ to 47\AA pertaining to space group $P6_3/mmc$ (No. 194). The variation in the values of lattice parameter has to be recorded with increase in Mn-Zn conc. The magnetic properties of prepared Y-type Ca-hexaferrite powder were investigated by VSM studies at 15,000 Gauss magnetic field. The transition temperature and activation energies have been investigated from electrical behavior of the samples

Discovery, 2023, 59, e12d1005