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Souvenir

International Conference on

Agriculture, Rural Development and Health Science

(ICARDH-2022)

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7th International Conference on Agriculture, Rural Development and Health Science (ICARDH-2022)

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About Conference

7th International Conference on Agriculture, Rural Development and Health Science (ICARDH-2022)

During the worldwide lockdown due to COVID 19 pandemic, a lot of important activities have come to a halt. However, when we look at the brighter side, all of us have more time for adding to our knowledge and insights.

With this aim, to keep contributing to learning and motivation International research and development Center for publication is going to organize a two-day International Conference with the title "**7th International Conference on Agriculture, Rural Development and Health Science (ICARDH-2022)"** on Aug 13-14, 2022 through hybrid mode.

We hope, this online mode of the conference in COVID-19 pandemic will be an appreciable step in promoting the research activities and new information between researchers, developers, students, academicians and practitioners working in and around the world by keeping the social distance in view to stop the spread of COVID-19 disease. This conference aims is to present the current researches being carried out in the field of social science and education development around the globe.

Prospective authors from academia as well as industry are invited to submit their abstracts that illustrate original/unpublished works and industrial applications describing advances and significant innovations in the field.

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Message

I am extremely pleased to share that International Research and Development Center for Publication (IRDCP) is organizing a two days **7th International Conference on Agriculture, Rural Development and Health Science (ICARDH-2022)"** on Aug 13-14, 2022.

I am sure the state of art lectures from the invited experts and the research findings of researchers, academicians, utility engineers will enrich the knowledge of all the participants. It will provide an excellent opportunity for students to learn new ideas.

I offer my best wishes to the whole team of the organizing committee, the participants, and volunteers for the grand success of the conference.

Dr. Kiran
Convenor **ICARDH** -2022

Message

I am happy to know that International Research and Development Center for Publication (IRDCP) is organizing a two days **7th International Conference on Agriculture, Rural Development and Health Science (ICARDH-2022)"** on Aug 13-14, 2022. I am sure that, this conference would provide an ideal platform for the academicians, scholars and experts to present and exchange their research findings and Ideas.

I wish the conference a great success.

Prof. (Dr.) Hamid Saremi
President (Chancellor)
Assrar Higher Institute of Eduction (Deemed to be University)
Mashad - Iran
(Ex- Vice- Chancellor Islamic Azad University ,Quchan Branch - Iran)

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Abstract of ICARDH-2022

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Magnetized cellulose nanofiber for the application of hexavalent chromium removal using the adsorption method

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Abstract— Water pollution is one of the most severe worldwide issues today. Among water pollution, heavy metals are becoming a concern to the environment and human health due to their non-biodegradability and bioaccumulation. This study employed a magnetite-cellulose nanocomposite derived from renewable resources for hexavalent chromium elimination by adsorption. Magnetite nanoparticles were synthesized directly from iron ore using solvent extraction and the co-precipitation method. Cellulose nanofiber was extracted from sugarcane bagasse using alkaline and acid hydrolysis methods. Before and after the adsorption process, the MNPs-CNF composites were evaluated using X-ray diffraction (XRD), Scanning electron microscope (SEM), Fourier transform infrared (FTIR), Vibrator sample magnetometer (VSM), and Thermogravimetric analysis (TGA). The impacts of several parameters such as pH, contact time, initial pollutant concentration, and adsorbent dose on adsorption efficiency and capacity were examined. The kinetic and isotherm adsorption of Cr (VI) was also studied. The highest removal was obtained at pH 3, and it took 80 minutes to establish adsorption equilibrium. The Langmuir and Freundlich isotherm models were used, and the experimental data fit well with the Langmuir model, which has a maximum adsorption capacity of 8.27 mg/g. The kinetic study of the adsorption process using pseudo-first-order and pseudo-second-order equations revealed that the pseudo-second-order equation was more suited for representing the adsorption kinetic data. Based on the findings, pure MNPs and MNPs-CNF nanocomposites could be used as effective adsorbents for the removal of Cr (VI) from wastewater

Keywords— adsorption, bagasse, hexavalent chromium, magnetite-cellulose nanocomposite

A Study on the Impact of Farmer Producer Organisations (FPOS) in Mizoram

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Abstract— The existence of millions of small and marginal land holders who lack sufficient marketing facilities, purchasing power, infrastructure support, and other factors has contributed to India's agricultural crisis. Farmer Producer Organizations have made significant progress to become an effective solution to all of these difficulties. Several studies have previously been undertaken across the country to depict the function of FPOs and their impact on rural livelihood. Similar studies in the state of Mizoram, however, are few in the previous research. The current study aims to assess the impact of FPOs on Mizoram's rural livelihoods by gathering primary data using a well-designed questionnaire and personal interviews. The paired t-test was used to determine the economic impact of FPOs on member farmers. Garrett's ranking approach was utilised to identify the constraints of the FPO members. The findings show that joining FPOs enhances income, employment, and savings significantly. The top constraints faced by FPOs were marketing of produced items, followed by financial constraints and infrastructure and storage constraints. Proper monitoring and mentoring, as well as limiting the number of members, are important for the FPOs' future growth and performance. Besides that, timely grant availability, a focus on output-related activities rather than input-related activities, the use of ICT for service and monitoring, diversifying the sphere to allied agricultural activity, and a focus on increasing the income of member farmers will be important for the FPOs in the study area. A comprehensive strategy including all stakeholders will be crucial for the FPOs to function effectively in the future.

Keywords— FPOs, Farmer members, Livelihoods, Income, Constraints.

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Effect of mineral and organic fertilizer on the performance of Cassava (*Manihot esculenta* Crantz) in the forest area of the Central African Republic

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Abstract— Inefficient and unbalanced use of fertilizer are some of the plausable reasons contributing to the large cassava yield gaps in Sub-Saharan Africa. However, there are limited research regarding the responses of cassava to organic and inorganic fertilizers use in these agrological settings. We conducted a study in forest areas with the participation of members of an agropastoral group to improve the cassava yield in rural areas of the Central African Republic. The experimental layout was a completely randomized block (CRB) design with four treatments replicated four times and comprising 16 elementary plots of 25m² (5m by 5m). The treatments were randomly assigned from 1 to 4 (T1, T2, T3, and T4). According to treatments, the variabilities between the growth, yield, and economic productivity of cassava (*Manihot esculenta* Crantz) in pure culture were measured and quantified. The data were subjected to Analysis of Variance (ANOVA) using linear model of R statistical software version 3.1.2. Principal Component Analysis (PCA) was also performed on several parameters. This study shows that treatments, T4 (cassava + NPK + cow manure) and T3 (cassava + NPK) resulted in plants that have better growth in heights and diameters, unlike T1 (control plot) and T2 (peasant practice), which have the lowest values. Also, the principal component analysis (PCA) confirmed that the variability between the treatments is up to 52.12% on the two axes (1 and 2) and confirms that the yields obtained during the study show a highly significant difference; T4 (cassava + NPK + cow manure) gave the highest yield and also generated a good profit compared to other treatments. There was no correlation between treatments in terms of growth and

productivity parameters. The T4 treatment proposed by the International Atomic Energy Agency (IAEA) has a better performance on all the evaluations. Therefore, organo-mineral fertilization can contribute to the improvement of cassava production.

Keywords— Cassava, Fertilizers, Yield, RCA.