

FLY ASH MANAGEMENT AS CARRIER IN BI-FERTILIZERS AND BIO-PESTICIDES FORMULATIONS

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ABSTRACT

Fly ash alone and in combination with lignite /talc was tested to explore its possible use as carrier for bio-fertilizer and bio-pesticide formulations. Fly-ash being generated in large quantity in thermal power stations is generally recognized as waste and an environmental hazard. However, it has been reported to promote crop growth in various trials conducted under National Fly-ash Mission Programme of GOI. The objective of the present study was to develop fly-ash based bio-formulation of selected microbes and to evaluate shelf-life of these formulations. Bio-Formulations of selected bio-fertilizer/bio-pesticide species were obtained by mixing both cultures/ground sorghum cultures with fly-ash and lignite/talc, respectively, the cfu were maintained as recommended under FCO/CIB guidelines. A general decline in cfu count was noticed in all the three carrier combination in all the tested bio-formulations. Fly-ash based bio-fertilizer and bio-pesticide formulations showed better results compared to routine talc or lignite formulations in our study w.r.t shelf-life, bio-efficacy.

PRETREATED LIGNOCELLULOSIC WASTES ALTERNATIVE OF VALUE ADDED PRODUCTS PRODUCTION

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ABSTRACT

Pretreated lignocellulosic wastes such as domestic and agro-industrial residues by mechanical, physical and biological treatment can be used as a potential substrate or alternative to other biomass for production of several value added products. The main value added products from lignocellulosic wastes are summarized in a manner which pinpoints the most recent trends and the future directions. Physicochemical and biological treatment systems seem to be the most favored options while bio-fuels, biodegradable composites and biosorbents production paints a bright picture of the current and future bio-based products. Although the main challenge facing lignocellulosic waste utilization is the high costs involved in treatment and production processes, some recent affordable processes with promising results have been proposed this review presents the art of the dual advantage of handling lignocellulosic wastes for cleaner environment and production of renewable bio-products.

Key words: Lignocellulosic wastes, pretreatment systems, value-added products.

REDUVIID PREDATORS THE NATURALLY OCCURRING BIORESOURCES, THEIR ROLE IN BIOLOGICAL CONTROL

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ABSTRACTS

Reduviids (Hemiptera: Reduviidae) are one of the largest land heteropteran predators distributed almost in all the ecosystems. 6500 reduviids have been recorded from India. In this review distribution of reduviids in various agroecosystems of the world in large and India particular was listed out. General and specific characteristics features of the reduviid were listed out. In addition adaptive features of the reduviids and their in predation and life defense were mentioned. Though they are polyphagous predators and life defense were mentioned. Though they are polyphagous predators, they preferred certain preys to feed. Reduviids preferred to feed lepidopteran larvae than other pests available in the test arena or fields. Many field cage and field experiments were proved their biological control potential. Mass production technology was available now. Factitious hosts like *Corcyra Cephalonica Stainton* and artificial rearing using meat-based diet was available. This naturally occurring predator can be used in the pest management programme to reduce the synthetic pesticides which cause environmental pollution and cause health hazards to human being and domestic animals.

RECLAMATION: A MANAGEMENT PRACTICE IN MINING INDUSTRY

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ABSTRACT

Mining is an industry causing adverse impact on the environment due to loss of fertile soil, air water, flora and fauna. Open cast mining results in enormous disturbances on land due to excavation on a large scale, top soil removal , overburden dumping laying roads , deforestation etc; While underground mining cause subsidence. As mining is only intermediate phase of land use, the vast area cannot be left as such but measures are to be taken to put it to potential use after mining.

Reclamation and ecological restoration of the area are some of the management practices needed in mining industry in addition to monitoring and abatement of air, water, soil pollution etc. Though impact of mining vary with the mineral depending on the method of extraction, machinery used , geomorphological conditions of the area, land use pattern etc, the basic method of reclamation and ecological restoration are similar for all conditions. The technological measures developed and extended to mining industry in reclamation involve a sequence of activities like removal of top soil and overburden , slope stabilization , management of top soil, replacement of top soil, application of fertilizers , mulches and other soil amendments , seeding , plantation, etc. The article deals with types of mining, instruments used, OB characters, shelf-life concept, topsoil replacement, soil amendments for enhancing ecological succession, species selection and other physical and bio-engineering techniques for the renewal of damaged land for sustainable and beneficial use with special emphasis on coalmining. Conservation, reclamation, ecological restoration and rehabilitation efforts are essential in management practices of the mining industry and for environmentally sustainable economy called eco-economy.

Key words: Mining, Mine-spoil, over burden, reclamation, re-vegetation, ecological-Restoration and rehabilitation.

ENVIRONMENT PROTECTION AND RESOURCE MANAGEMENT THROUGH ORGANIC FARMING

Roti, Kapda aur Makan with Shudha Vatavaran - Need of the Day!

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ABSTRACT

Environment protection remains at risk due to continued population growth shrinking cultivable land resources etc. The price of food is skyrocketing; more than 850 million people in the world go to bed hungry every night. So the demand to produce more and more food per unit area has resulted agriculture becoming heavily dependent on chemical inputs viz. Fertilizers and pesticides. But increasingly and indiscriminately use of chemicals are posing a threat to life and environment. Besides this, in India to be around 40 percent of total production food are wastage mainly due to the lack of post-harvest infrastructure such as cold chain facilities, transportation and proper store facilities. In modern day society the 'Waste Management' is serious one. In India about 700 million metric tones bio-degradable waste is produced each year. We do not return back to soil thirtieth of the same and is a cause of environmental pollution besides posing serious health hazards to human and livestock. Now this is the time to finding ways for efficient utilization and management of waste so as to recognize it as an asset and resource rather than waste through suitable technology intervention as fertilizers for organic inputs. Organic farming establishes an ecological balance with nature and take a proactive approach towards environment.

BIOMEDICAL WASTE MANAGEMENT

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INTRODUCTION

The problem of environmental pollution started with the advent of men on earth and now has become extremely acute both in developed and developing places. Due to loss of self-cleaning capacity of the air, developed countries have laid stringent safety standards and measure to maintain the power of the balance of the nature in the area of waste management, particularly in the area of Bio-Medical waste management. But the developing countries have either delayed or ignored such pollution problems, which are more harmful, detrimental or injurious to the public health, safety and welfare of the people. Paul Harrison in his book 'the third world Tomorrow' at pp.38-40 has warned that there would be no tomorrow for the third world countries if such pollution strategies. Therefore it can be emphasized that eco-development is one of the sensible pre-condition of sustainable development and for that matter immediate measures are required to be taken to stanch the terrible implication of nature resulting from non-scientific disposal of bio-medical wastes.

AEROMYCOLOGICAL RESEARCH IN THE NEW MILLENNIUM

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ABSTRACT

Aeromycology is the study of dispersal and distribution of fungal spores in the air and their dependence on meteorological data like temperature, rainfall, relative humidity, etc. Since Louis Pasteur's practical demonstration of presence of microbes in the air , the hunt for airborne fungi has begun and in the new millennium , it has gathered momentum . Aeromycology has become a very attractive field of interest for many researchers throughout the world in the recent times. Hence, an attempt has been made to give a brief review of the work done throughout the world in the field of aeromycology.

Key Words: Aeromycology, spores, meteorology.

STUDIES ON FUNGAL SUCCESSION AND DISTRIBUTION

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INTRODUCTION

“Succession is one of the oldest, most basic, yet still in some ways, most confounded of ecological concepts” (McIntosh, 1980). Ecological succession is the process of temporal change in community composition (Morin, 1999) with various mechanisms such as facilitation, tolerance and inhibition driving the compositional change (Connell and Slatyer, 1977). Rayner and Todd (1979) defined fungal succession “as the sequential occupation of the same site by thalli (usually mycelia) either of different fungi or of different associations of fungi”. Frankland (1981) mentioned that “Community life for a fungus in dynamic” Frankland (1992) defined succession of both plants and fungi “as a directional change in the composition relative abundance and spatial pattern of species comprising communities”. Importance is placed on the occupation of sites by mycelium. A succession has occurred if one (or more) mycelium has replaced (not necessarily actively) another mycelium. Fungi replace one another as their dynamic communities of mycelia alter in space and time (Frankland, 1998). Each succession is unique, the outcome of the interplay of a bewildering number of different circumstances, but some general patterns and processes can be discerned. In genera, it can be said that an increase in the diversity of fungal species is accompanied by an increase in nutrient release from the system (Juliet C., et al.,) Fungi replace one another at different stages of succession and this has been observed by several authors (Frankland, 1976, 1998; Leong et al., 1991; Leung, 1998; Tokumasu, 1998; Ho et al., 2002). Studies of fungal biodiversity and succession on plant substrates are well documented. This chapter endeavours to consolidate some of the fungal biodiversity and succession studies done in India and elsewhere.

**FISH DIVERSITY AND ITS CONSERVATION STATUS IN KAPILA RIVER IN
AND AROUND NANJANGUD INDUSTRIAL AREA MYSORE DISTRICT,
KARNATAKA**

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ABSTRACT

Present study deals with fish diversity and physicochemical properties of kapila River in and around Nanjangud industrial area. Forty species of fishes belonging to fifteen families, thirty genera have been identified. Fish species belonging to genus *puntius* were more common in the study. Forty species were recorded during January to December 2008. However, it was observed that the fish diversity was decreasing since last two years unprecedentedly, mainly due to manifold human activities. Fish diversity in the lakes is becoming rare and about five species of fish were identified as endangered. Out of the forty identified fishes, four fish species were identified as threatened species. Tor Khudree, also known as Deccan mahseer and seven other species were identified as vulnerable fish species. though there were forty species of fish endemic to this region, their number decreased with introduction of more exotic species. Conservation of endemic fishes, propagation of endangered and threatened fishes should be therefore, undertaken to preserve and protect fish diversity in the wetlands of Mysore district. Various physico-chemical properties such as pH, temperature, TDS, Total hardness, Total alkalinity, electrical conductivity, dissolved oxygen, COD, chlorides, nitrates, ammonia nitrogen and salinity were recorded on monthly basis which were suitable for growth and stocking of fish species.

keywords: Fish diversity, COD, TDS DO, Ammonia nitrogen, Endangered, Threatened.