J Ecosyst Ecogr 2012, 2:4
http://dx.doi.org/10.4172/2157-7625.S1.010

OMICS Group Conferences
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International Conference on
Biodiversity &
Sustainable Energy Development

September 14-15, 2012 Hyderabad International Convention Centre, India

Study on homestead vegetation of plain-land homes of the Brahmaputra basin

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Detailed study was conducted on traditional homestead vegetation of the Old Brahmaputra basin to explore the scientific basis of their establishment and cultures. Unique biodiversity combination and association of hundreds of species including trees, shrubs, climbers and herbs; terrestrial and aquatic flora are grown in the homesteads. The diversified vegetation reflects its importance to such a level that, one can say 'home is made in vegetation' or 'vegetation is raised for the home'. The people of that region are social, agriculture-dependent and comfort-loving. Single family homes are rare but most of the homes are with multi-families with same descendants. Usually a home is demarcated into covered area with houses, kitchen and cow-shed etc., which is about 25%; open area 15%, water source 20%, passage and walkways 5%, vegetation 33%, garbage and latrines is 2%. Vegetation covers the highest area of a home and is used for essential purposes e.g. building materials, windbreaks, hedges and fences, fruits and vegetables, drinks and spices, green manures, mastication, beverages, medicinal, and for beautification etc., with as many as 190 species in a single home. It is usually grown considering sunlight, face of home, windbreaks, and habitat. Homes face south or east to get maximum sunlight and aeration for a healthy environment. Vegetation of a typical village home is nicely modeled with right plant species considering essentiality, multipurpose uses, easy culture, and growing habit. Traditional practices and wide-range uses of hundreds of species in a limited space widened the implication of biodiversity for maximum productivity.

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Ligninolytic enzyme production & degradation of corn cob by different white-rot fungi

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The white-rot fungi (WRF) namely Cereporopsis subversipora, Daedalea flavida, Dichomitus squalens, Phlebia floridensis and P. brevispora have been studied to evaluate their potential to degrade corn cob with associated enzymes – Lignin Peroxidase (LiP), Manganese Peroxidase (MnP) and Laccase (Lac). The data has been compared with Phanerochaete chrysosporium. The fungus has been found to be capable of degradation of corn cob with respect to loss in total organic matter and lignin. The fungus grew luxuriantly on corn cob and produced three ligninolytic enzymes on various days of incubation. The laccase activity has been reported for the first time in corn cob grown cultures of P. chrysosporium. This study shows that WRF are good producer of manganese peroxidase on corn cob. Phlebia brevispora is a best producer of manganese peroxidase. Daedalea flavida has been found to be the best producer of lignin peroxidase and causes maximum percent lignin. So D. flavida and Phlebia sp. needed to be explored for employing their delignification potential in various Biotechnological applications such as degradation of industrial dyes, colourants an various other coloured industrial effluents.

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