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GENAPLANT: Genetic parameters as tools for selection of indicators of sustainability, diversity and recognizing new native plant genotypes for industrial use

Renata Silva-Mann

Universidade Federal de Sergipe, Brazil

There is growing interest in defining indicators of sustainability which are important for monitoring the conservation of native forest particularly in areas of permanent protection. These indicators are references for assessing the state of the forest and the status of the depredated area and its ability to maintain species populations. The aim challenge is to select genetic parameters as indicators of sustainability for native forest species in fragments located in riparian areas in Brazil. This study was carried out using the indicators suggested by the Organization for Economic Cooperation and Development which were identified as Driving-Pressure-State-Impact-Response (DPSIR) factors. The genetic parameters were obtained by DNA molecular markers analysis in populations located in different biomes in Brazil. The framework for species conservation suggests 17 indicators of sustainability. In accordance with genetic parameters, the populations could be isolated and these genetic parameters can be used to monitor the sustainability of those populations with the aim of defining strategies for forest restoration and to select ecotypes for industrial use.

renatamann@gmail.com

Biosensors: A promising alternative to improve the agricultural sector of an Indian economy

Ruchi Singla

Chandigarh Group of Colleges, India

Green Revolution plays a crucial role in replacing the trends of ancient agricultural practices with the modern agricultural tools to increase productivity and prevention of crops against diseases by different types of pests. Increased needs enhance the usage of chemicals also termed as Pesticides in different parts of the world that can produce toxic effects. These chemicals enter into the atmosphere through air, water, soil and through the food chain. Owing to their indiscriminate and excessive use over the crops, their detection and analysis is of prime concern today. Conventionally, chromatographic and spectroscopic methods are employed for determining their presence to prevent contamination of environment against their alarming effects. These techniques are highly expensive, laborious and time consuming. This immediate need leads to the development of biosensors as a promising alternative over conventional ones for detection of pesticides. Biosensors consist of Bio-recognition element and transducer part. We can classify them either on the basis of input recognition element or on the basis of methods employed to convert the signal into the usable form like electrical, Optical or Fluorescence based. In this paper, we introduce novel ways for the development of transducers classification for antibody based input bio-recognition element biosensors upon the certain types of pesticides that are much harmful and creates irreversible effects. The success of the use of biosensors lies in their uniqueness to interface the biological element with transducer component and senses for the specific analyte. The biosensors specifically combines the property of biological elements with the physical transducer. The type of transducer employed depends upon the concentration of analyte in the sample. With their efficient use, alarming effects of different pollutants can be controlled. The contribution of biosensors to the agricultural sector is really amazing.

hod.ece@cgc.edu.in