

Research Project Internship Form

Date: 12/08/2023

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Department/School: Department of Basic and Applied Science/SOES

Internship Project Name: Agriculture waste application in aged-oil biodegradation

Duration of Internship: 6 Months

Number of Students Needed: 2

Location of Internship (Lab/Company/Office): GDGU/Environmental Microbiology

Prerequisites: NA

Project Details: *(At least 150 words)*

Title: Potential of agriculture waste application in enhancing biodegradation of petroleum contaminated soil.

Rapid progress of the oil industry has been accompanied by rising concern over the environmental consequences of petroleum product contamination. Agricultural waste product has some ability to provide nutrients, can hold water and thus preserve the metabolism and enzymatic activity of indigenous microorganisms.

Objectives

1. Isolation and identification of novel degradative bacteria
2. Agriculture waste as a scaffold for bacterial immobilization.
3. Development of bacterial consortium and host-scaffold interaction

Materials and Methods

The media and chemical used for the study are LB, NB, SDS, and H₂SO₄. Infrared spectrum of rice straw, untreated and treated, and aged-oil soil sample will be analysed using an FT-IR. Isolation identification and characterization of isolated microorganisms will be done by using microbiological and molecular techniques. Optimization and development of bacterial consortium and further addition of agricultural waste which act as a scaffold for environmental purpose.

Expected outcomes:

