

(For JSPS Fellow)

Form B-2
(FY2018)

Date (日付)
20/11/2018

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Jain Rakeshkumar Manojkumar ID. No. P17095
- Participating school (学校名): Tokai University Shizuoka Shoyo Senior High School, Shimizu__
- Date (実施日時): 10/11/2018 (Date/Month/Year:日/月/年)
- Lecture title (講演題目): Application of soil microbes for bioremediation, biocontrol and PGPR__
- Name and title of your accompanying person (講義補助者 職・氏名)

- Lecture format (講演形式):
 - ◆Lecture time (講演時間) 75 min (分), Q&A time (質疑応答時間) 5 min (分)
 - ◆Lecture style (ex.: used projector, conducted experiments)
(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))
Projector
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Isolation, purification and identification of alkaliphilic bacteria from alkaline environments like sodic soil, sea sediment and water, alkaline industrial effluents and sludge samples, collected from Gujarat (India). Based on screening of alkaliphilic for their efficiency to neutralize alkaline medium, potential isolates were used for the biological neutralization and reduction of TDS in alkaline wastewaters of textile and chlor-alkali industries, in the presence of conventional and unconventional carbon sources. Alkaliphilic bacteria producing biosurfactant were screened by emulsifying activity and surface tension measurement. Physico-chemical characterization of biosurfactant by different analytical tools (Jain et al., 2012a and Jain et al., 2012b). The products were used for the bioremediation of lubricant oil from soil and cotton cloth to prove its emulsifying property and its ultimate application in detergent industry.

Plant growth-promoting rhizobacteria (PGPR) occur naturally in the soil and plant rhizosphere and can benefit plant development and production by improving their growths, and health. The study included isolation of potential PGPR and inoculation of bean and banana plants by consortium of effective bacterial isolates and assessment of their impact as PGPR under laboratory and greenhouse conditions. Four PGPR, newly isolated from a desert soil, composed the consortium and together enhanced growth of bean and banana plants. The inoculation of the roots with the consortium resulted in significant increase in shoot length, chlorophyll content, leaf area, fresh and dry biomass in both tested plants.
- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

I think no need to change. If possible to request participants to add some japanese word during presentation so student will feel easy to understand.

- Other noteworthy information (その他特筆すべき事項):

JSPS will arrange for highschool students some workshops. Workshop will be comprised of biology, physics, chemistry and other scientific field. Workshops will be conducted by JSPS postdoc and host mentor.

- Impressions and comments from the accompanying person (講義補助者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。)