

(For JSPS Fellow)

Form B-5

Date (日付) 07/01/3014

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): Muhammad Saqib (ID No. P13743)
- Participating school (学校名): Takezono High School, TSUKUBA, Ibaraki
- Date (実施日時): 03/12/13
- Lecture title (講演題目): (in English) Introduction to plant DNA and RNA viruses, their impact and control measures.
(in Japanese)
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Plant viruses are endogenous parasites that contain nucleic acid to propagate inside the plant cell and coat protein for its transmission. RNA and DNA viruses are found in many shapes, sizes and structures. Most RNA viruses are linear positive sense, negative sense and ambisense. DNA viruses are circular; single stranded or double stranded and varies in length shape and structure. RNA and DNA viruses produce various symptoms in infected plants.

Plant diseases caused by DNA and RNA viruses have serious economic losses around the world. Infections result in major reductions in crop production for human consumption and animal feed, and in pasture feed for dairy, meat and wool production. Economic effects of losses pass down the chain in the agricultural community in general.

Management of virus diseases in crops are based mainly on phytosanitary (e.g. healthy seed) and cultural control measures, and application of insecticides to control insect vectors. The best strategy for long-term virus control is to breed for durable virus resistance; however, this approach is limited by a shortage of available sources of virus resistance. There is at least one successful application and deployment of transgenic virus resistance, to *Papaya ringspot virus* in Hawaii, but acceptance of transgenic crops is still an issue. Clearly, there is a need to find new ways to control virus disease in crop plants. My current work in AIST Tsukuba, is to find novel strategies to control DNA and RNA virus in crop plants.

- Language used (使用言語): English
- Lecture format (講演形式): Powerpoint presentation
 - ◆Lecture time (講演時間) 50min (分), Q&A time (質疑応答時間) 10 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))

Powerpoint presentation using a projector

◆Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

No assistance in case of interpretation

◆Name and title of accompanied person (同行者 職・氏名)

Prof Masaru Takagi from AIST.

◆Other note worthy information (その他特筆すべき事項):

Students like the presentation

- Impressions and opinions from accompanied person (同行者の方から、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。):