

(For JSPS Fellow)

Form B-5

Date (日付)

19/07/2016 (Date/Month/Year: 日/月/年)

**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): Claudia Sofia Leite Vicente (ID No. P14394)

- Participating school (学校名): Kariya High School, Nagoya, Aichi

- Date (実施日時): 06/07/2016 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) Microbial Interactions (in Japanese)

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The title of my lecture was Microbial Associations. The presentation began with self-presentation, my country facts, and a brief history about Portuguese in Japan. After, I introduce the term microbe and microbiology, history of microbiology, and applications. The third part of the presentation was dedicated to 2 on-going projects: nematode-bacteria interaction in Pine wilt disease; and bacteria-insect interactions. In the first topic, I have conducted two interactive experiments with the students: (1) guess which bacteria will resist on oxidative stress conditions; (2) observation of the plant parasitic nematode *Bursaphelenchus xylophilus*, growing on fungi. I have introduced the basic defence mechanism of plants. When subject to biotic (like nematode infection) or abiotic stresses, plant cells react by producing massive amounts of ROS (reactive oxygen species) which, more than trying to fight back the stress, also serve as systemic signalling molecules. The most predominant ROS produced is hydrogen peroxide. Based in this knowledge, my hypothesis was that associated bacteria of *Bursaphelenchus xylophilus* (pathogenic agent of PWD) were highly resistant to hydrogen peroxide and that by resisting to oxidative stress conditions, the bacteria can help the nematode to survive in the same conditions, for which the nematode is sensitive. First, we analysed the tolerance of both bacteria and nematode, alone and in association, and found that our hypothesis were corrected. Secondly, we have created a mutant bacteria sensitive to oxidative stress and tested once more the tolerance of wild-type bacteria, mutant bacteria and nematode, alone and in association. Our findings showed clearly the beneficial effect of associated bacteria in oxidative stress conditions towards *B. xylophilus*

In the second topic, I have introduced the term microbiome and the study of microbial interactions in insects, in particular in *Periplaneta sp.*, commonly known as cockroaches.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 15:50 – 17:50 (分), Q&A time (質疑応答時間) 30 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))

In the lecture, I have used the school projector. The experiment conducted was the observation of the the plant parasitic nematode *Bursaphelenchus xylophilus*.

◆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))

Koichi Hasegawa, my JSPS tutor, have accompanied myself to the highschool and helped in translating the students questions in japanese as well as monitoring (with myself) students observations.

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

Koichi Hasegawa, lecture and PI at Environmental Biology Department of Chubu University.

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

- 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。):