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UNIVERSIDADE FEDERAL DE SANTA MARIA

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DEPARTAMENTO DE SOLOS

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**Project "Diversity of ectomycorrhizal fungi in
soils and oligochaetes in Brazil and Slovenia",
grant by CNPq, No. 490648/2010-0 process.**

Visit to Brazil of the Dr. Tine Grebenc

Period: 04/07/13 to 19/07/13

Department of Soil / UFSM - Santa Maria / RS



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Activities

The visit at the UFSM in July 2013 was divided in two parts. The first part took place in Natal (RN), followed by the regular visit to UFSM. The additional tasks executed in the north-eastern part of Brazil (Natal and vicinities) required an additional travelling but is in concordance with aims and tasks within the project.

In the UFRN (Natal) we have performed a 3-days presentation on the collection, identification and biology of ectomycorrhizal fungi, followed by a field trip, dedicated to the support of the PhD thesis of a project partner (Marcelo Sulzbacher). In the time of the visit to RN we have collected, separated and in parts identified 29 different types of ectomycorrhizae and prepared a material for the molecular characterization. In addition we have visited the Atlantic forest ecosystem for the collection of the reference (sporocarps) material needed for the identification of ectomycorrhizae and the ongoing taxonomic work of several project partners.

The return to Santa Maria and on site there we have done the proposed actions and some additional tasks in favor of the success of the project:

- 1) Visit the Botanic Garden in Porto Alegre/RS and Botanic Garden UFSM/RS with an introduction to the regional flora and recording of the introduced and native ectomycorrhizal fungi which were fruiting in the time of the visit.
- 2) Preparation and organization of a talk in the Workshop Diversity of ectomycorrhizal fungi in soils and oligochaetes in Brazil and Slovenia. This Workshop take place at the Soil Department from 8:30 to 12:00 with the following participants and about 15 students and other members of the UFSM (not listed)
 - Introduction (Dra. Zaida Inês Antonioli)
 - Report activities from the execution of the project (Dr. Tine Grebenc, Dra. Andressa Oliveira Silveira, Dr. George Brown, PhD Students Manoeli Lupatini and Marcelo Sulzbacher)
- 3) Field collection of the material from the Salicaceae plants in the University Campus with an aim to check which types of mycorrhizae are present in the native (and some introduced) Salicaceae species.
- 4) A half-day visit to the side land and in the native pasture area to check the presence and the diversity of earthworms within the campus UFSM. In particular we have focused on the genus of the earthworms *Eukerria*, which is a known pest of rice.

5) Field trip to Fepagro-Floresta, where all participants of the workshop were introduced with the facilities, ongoing research projects and living collections (ectomycorrhizal fungi, biological control fungi and sterile cultures of selected plant species) at the Fepagro institution. The introduction was followed by a short, purposive sampling of sporocarps of ectomycorrhizal fungi in native and in plantation forest (*Eucalyptus*, *Acacia*) to obtain the winter ectomycorrhizal fungi diversity on sites previously included in samplings and workshops within the bilateral project. The material will be used in future as a reference material for identification of ectomycorrhiza.

6) Discussion and assistance in the preparation of scientific papers. In particular we have focused on the *Descomyces* and the *Rhizopogon* points that still need some additional analyses and fine-tuning of the research ideas or discussion. We have also continued on the analyses of the *Coccoloba* ectomycorrhizae and a preparation of the review paper of the hypogeous fungi in South America.

7) An official meeting with all participants of the current bilateral project in the office of UFSM in order to prepare the potential or ongoing topics, tasks, models and innovations for the submission of the next application for a new project to Brazil/Slovenian Government. In this meeting same topics are discussed:

- Works the subjects in Pampa and Caatinga Bioma.
- Bioinformatic analysis.
- Long term evaluation of fungi diversity and functioning in various soil types or biomes.
- Potential technical innovations or improvements of the measuring equipment, in particular in the area of micrometeorology and a completely new design of a prototype for tracing the fungal diversity in distant and difficult-to-access sites using a stand-alone device.

9) We have also defined the potential new members who would like to associate in this future project proposal;

- Dr. Iuri Goulart Baseia (Departamento de Botânica, Ecologia e Zoologia UFRN/Centro de Biociências).
- Dr. Domingos Benício Oliveira Silva Cardoso (Programa de Pós-graduação em Botânica PPGBot-UEFS).
- Dra. Debora Regina Roberti e Dr. Hans Rogério Zemmermann (Departamento de Física – UFSM).
- Dra. Gerusa Pauli Kist Steffen (Fundação Estadual de Pesquisa Agropecuária).

In addition to the bilateral cooperation we have also considered other options of the official cooperation among participating institutions from both countries, including future European project, individual calls for visiting scientists or students from the Brazilian side and potential options for the formalization of the students exchange, in particular for a PhD students who could do parts of their experimental work in partner institutions

The visit was self-evaluated as successful in terms of organization of the workshop, the executed research tasks, analyzed material and in terms of the discussion for the future common research and publishing actives.

Dr. Tine Grebenc

Project leader in Slovenia

Slovenian Forestry Institute

Prof. Dr. Zaida Inês Antonioli

Project Leader in Brazil

Department of Soil, UFSM



DEPTO DE SOLOS-CCR - UFSM

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Santa Maria, 19th July 2013.

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