

# STSM REPORT

**COST STSM Reference Number:** COST-STSM-FA 1203-14816

**Period:** 2013-10-10 00:00:00 to 2013-10-16 00:00:00

**COST Action:** FA1203

**STSM type:** Regular (from Lithuania to Austria)

**STSM Applicant:** Dr Ona Auskalniene Akademija Institute of Agriculture Lithuanian Research Centre for Agriculture and Forestry, LT-58344, ona@lzi.lt

**STSM Topic:** Methodology for soil sampling to estimate Ambrosia seeds

**Host: Dr.** Gerhard Karrer University of Natural Resources and Life Sciences Vienna, Institute of Botany A-1180, Austria (AT), gerhard.karrer@boku.ac.at

## PURPOSE OF THE VISIT

The main goal of my STSM was learning by doing the core methods that could be used in collecting soil samples, preparing them for the analyses, analysing the soil seed bank and estimating viability of *Ambrosia* seeds.

## WORKING DIARY

10/10/2013. *Arrival.*

11/10/2013. *Doing measurements of Ambrosia plants and taking soil samples for estimating seed bank of Ambrosia seeds in the soil from the roadside.*

I took part in doing biometrical measurements of *Ambrosia* plants in field trial by the roadside. Main goal of current trial was to estimate efficacy of mechanical *Ambrosia* control. 15 plants of *Ambrosia* randomly selected were measured in each plot to estimate plant height, number of internode, male and female flower and other parameters. Twenty soil samples were taken from one plot to estimate *Ambrosia* seeds number in the soil. For the taking soil samples was used device for undestroyed soil sores.

12/10/2013. *Taking soil samples from former places of ragweed cultivation (experimental plots) to estimate Ambrosia seeds in the soil.*

I took part in taking soil samples from building lot. This place for soil samples was choosing because of high amount of *Ambrosia* plants growing around. Ten soil samples were taken to estimate soil seed bank.

13-14/10/2013. *Soil samples washing with a wet sieving system (Retsch AS 200) and analysing*

I washed soil samples according to the instructions. Three sieves of Retch Company were used for wet soil sieving. Each soil sample was washed three minutes with Retch separator and three sieves (4 mm, 2mm). After washing different size fractions were analysed with magnifier to searching for *Ambrosia* seeds. Found seeds were taken into Petri dishes for germination test or viability test.

15/10/2013. *Seeds viability analysing Triphenyl tetrazolium Chloride test (TTC), discussion, plans for future collaboration.*

I tested the viability of *Ambrosia* seeds by TTC test. Seeds were imbibed in tap water at room temperature over night after that they were cut with surgical scalpel in a vertical line into two pieces and both parts of seed were taken into small vessel with 1 % TTC solution, tightly closed, and put to react at 30°C for 6 hours in darkness. After this time seed parts were rinsed under distilled water and under microscope the seed halves are removed from the integument. Seeds were counted in 3 classes: a) alive; b) intermediate c) dead.

Finally, we had a talk about plans for future collaboration (see below).

16/10/2013. *Departure*

## **DESCRIPTION OF THE SOCIAL PROGRAMME**

All the STSM period was not only well planned in the field and laboratory where I had the opportunity to learn research methods under the current analysis protocols but the social programme was rich itself too. I have possibility to take part in the lecture of prof. G. Karrer about plants in vineyards and also to visit a "Heurigen" with traditional Austrian food and customs. The Hosts presented whole information about remarkable places of Vienna.

## **FUTURE COLLABORATION**

The STSM provides an opportunity for the further collaboration with the University of Natural Resources and Life Sciences Vienna Institute of Botany. The future joint research will focus on the Ambrosia mechanical control and soil seed bank estimation.

## **CONFIRMATION**

The successful execution of the STSM is confirmed by the host institute in a separate letter.

## **ACKNOWLEDGEMENT**

I would like to thank Gerhard Karrer for his excellent supervision for all the time and effort, which he put on my visit to succeed. I would like to also thank Nina Waldhäuser, Ivana Milakovic and Melinda Leitsch-Vitalos for their time and willingness to teach me new methods and to spend the time with me during the working and non-working hours.

I thank to COST Program, for funding this mission.

