

WEED MAPPING AS A TOOL IN PLANT ECOLOGY AND WEED MANAGEMENT

PRAGUE, CZECH REPUBLIC, 16-21 JULY 2018

SUMMER SCHOOL PROGRAM

Lecture rooms: Czech University of Life Sciences Prague, Faculty of Agrobiological Sciences, Food and Natural Resources, rooms A 132 (lectures) and A 55 (PC room)

SUNDAY 15 JULY

19:00 Welcome Reception, room A 132 (meeting at 18:45 in the dormitory lobby)

MONDAY 16 JULY (room A 132)

9:00-9:15 Welcome speech (Garifalia Economou, Coordinator of EWRS Weed Mapping Working Group)

9:15-9:30 Welcome speech (EWRS Representative)

9:30-9:45 Welcome speech (Local Organisers)

9:30-9:45 Status and outlook in weed mapping activities in the EWRS (Garifalia Economou, WG Coordinator)

9:45-10:15 Introduction of participants (origin country, background)

10:15-10:30 *Coffee break*

10:30-12:00 **LECTURE:** Historical changes and variability in weed communities, main drivers in 20th century (Hansjoerg Kraehmer)

12:00-13:00 *Lunch*

13:00-14:30 **LECTURE:** Definition of survey areas, weed categorization and purposes of mapping (Hansjoerg Kraehmer)

14:30-16:00 *Practical training:* Species determination in field (Josef Holec)

16:00-17:00 *Coffee break, summary of the day (all teachers)*

TUESDAY 17 JULY (room A 132)

8:30-10:00 **LECTURE:** Classical methods for weed surveys and sampling (Garifalia Economou)

10:00-10:30 *Coffee break*

10:30-12:00 **PRACTICAL TRAINING:** Weed sampling in different crops (Garifalia Economou, all teachers present)

12:00-13:00 *Lunch*

- 13:00-16:00 **PRACTICAL TRAINING:** Computer assisted collecting and management of field data (Dionissios Kalivas, all teachers present), Presentation of UAV in field (Pavel Hamouz, Milan Kroulík)
- 16:00-17:00 *Coffee break*, summary of the day

WEDNESDAY 18 JULY

- 9:00-18:00 Full day **EXCURSION** (by bus):
- vegetable farm in Zálezlice
 - visit of Mělník city (castle, confluence of the Labe and Vltava rivers)
 - university vineyard in Chloumek (vegetation, wine testing)

THURSDAY 19 JULY

- 8:30-10:00 **LECTURE:** Assessment of species diversity (parameters, indices), statistical methods explaining the weed distribution (Michaela Kolářová, Pavel Hamouz), room A 132
- 10:00-10:30 *Coffee break*
- 10:30 – 12:00 **PRACTICAL TRAINING:** Usage of statistical methods on own and training datasets (Michaela Kolářová, Pavel Hamouz), room A 55
- 12:00-13:00 *Lunch*
- 13:00-14:30 **LECTURE:** Spatial analysis of data and GIS tools – field, landscape, country, world (Dionissios Kalivas), room A 132
- 14:30-15:00 *Coffee break*
- 15:00-17:00 **LECTURE:** Remote sensing using different platforms and sensors and image analysis for weeds detection (Hanan Eizenberg, Mohsen Mesgaran), room A 55
- 18:00 Prague city walking tour + dinner in the city center

FRIDAY 20 JULY

- 8:30-12:00 **PRACTICAL TRAINING:** Creating of maps - spatially analyzing field data: ArcGIS, WeedMap (Pavel Hamouz, Dionissios Kalivas), room A 55
- 12:00-13:00 *Lunch*
- 13:00-14:30 **LECTURE:** Specific cases of mapping: invasive species, rare species, and herbicide resistant species (Ahmet Uludağ, Josef Holec), room A 132
- 14:30-15:30 *Coffee break*, movement to the field
- 15:30-17:00 **PRACTICAL TRAINING:** Invasive and rare species – in field (Josef Holec)

SATURDAY 21 JULY

- 8:30-10:15 **PRACTICAL TRAINING:** Use of remote sensing data from UAV platform (Dionissios Kalivas), room A 55
- 10:15-10:30 *Coffee break*
- 10:30-11:15 **LECTURE:** Using a fully convolutional neural network for detecting locations of weeds in images from cereal fields (Rasmus Nyholm Jørgensen), room A 132
- 11:15-12:00 **LECTURE:** Spatial variability of optimized herbicide mixtures and dosages (Rasmus Nyholm Jørgensen), room A 132
- 12:00-13:00 *Lunch*
- 13:00-15:30 Final test, presentation of results by teams
- 16:00-17:00 Closing part
- 18:00 *Final barbecue* in the experimental field
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