STUDY ELLS WHERE

EWRS

Robotic weeding in sugar beet

University of Hohenheim, Germany, 10 – 14 June 2024

The background of this workshop is to combine basic principles of Artificial Intelligence, sensor- and application technologies in plant protection with practical applications in robotic weeding in fields with sugar beet. The ELLS summer school is combined with a meeting of interested members of the EWRS working groups on "Site-specific weed management" and "Physical and Cultural Weed Control", therefore facilitating knowledge exchange between experienced researchers, master and PhD students.

Workshop program

At Ihinger Hof, we will set up two field experiments in sugar beet examining hoes and spot/band sprayers that utilize different sensor systems for machine guidance and weed/crop identification. The following robots will be tested: Farm Droid FD 20, Naïo-Tech Orio, K.U.L.T.-iVision, Farming GT by Farming Revolution, Ecorobotix ARA, Hohenheim In-row hoe, Hohenheim hoe and band sprayer. We will use Neural Networks to train weed species for automatic classification during the workshop and compare the sensor systems in terms of guidance and identification accuracy, evoked crop stress, weed control efficacy, and perform an economic and ecological analysis of these systems. It is intended to summarize the results in a scientific paper.

Time	Mon. (10.06.)	Tue. (11.06.)	Wed. (12.06.)	Thu. (13.06.)	Fri. (14.06.)
7 - 8	Arrival	Breakfast			
8 - 12	Introduction and farm tour	Companies introduce their robots, visit of field trials	Assessments in the field experiments in small groups	Data analysis, structure of the paper	Visit of weed biodiversity field, dam cultivation
12 - 13	Lunch				
13 - 17	Lectures and exercise 'Sensor and application systems and AI in Weed Research'	Adjusting robots, establishing treatments	Assessments in the field experiments in small groups	Excursion to K.U.L.T. and winery	Students present results, Exams for students
18 -	Dinner				

➢ *Costs: 180€ (incl. food and accomodation)*

➢ *Venue: Research Station Ihinger Hof, Renningen, Germany*

➢ *6 ECTS*

➢ *Further information and contacts: www.euroleague-study.org/en/robotic-weeding*

University of Copenhagen, Faculty of Life Sciences (LIFE)
Denmark (former KVL)

Swedish University of Agricultural Sciences (SLU)
Uppsala, Sweden

Czech University of Life Sciences Prague (CULS)
Prague, Czech Republic

University of Hohenheim (UHOH)
Stuttgart, Germany

Warsaw University of Life Sciences (SGGW)
Warsaw, Poland

Wageningen University and Research Centre (WUR)
Wageningen, The Netherlands

University of Natural Resources and Applied Life Sciences (BOKU)
Vienna, Austria

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