*Review paper*

# *Sensor based weeding system for intra-row cultivation of corn and sugar beet*

***Abstract***

*In this study, the basic working principles and the development of the machines for the weeding (cultivating) maize and sugar beet between the rows as well as in the rows. In order to ease the mental effort of the tractor drivers and accelerate the working process, the use of sensor assistance based either on RGB images and the corresponding micro controllers, or recently with more easily affordable autonomous guiding RTK-GPS systems is required. For their use, it is necessary to precisely seed or plant with the same RTK-GPS systems and simultaneously create maps, which would serve as guiding directions of the weeding machine. The real future of maize and sugar beet weed control is the development and the introduction of autonomous robots that can autonomously position on the field at any time by using bi-spectral image analysis systems and RTK-GPS navigation, which are capable of operating for multiple hours of field working without direct manual control.*

***Keywords:*** *mechanical weed control, sensors, RGB image, RTK-GPS, weeding robot*