Teaching Precision Farming for Agricultural Engineers: Experiences and Lessons Learned

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SUMMARY

In recent decades, innovations of the agricultural sector are increasingly driven by digital technologies. The so called precision farming solutions provide attractive advantages for farmers. The challenge for farmers and enterprises is to effectively measure, collect and analyze spatial data to make effective management decisions. Although the introduction of precision agricultural technologies was initially rapid, its spread has slowed down due to the lack of high-quality educational programs providing the right level of knowledge and rapid technological development.

In the last few years postgraduate engineering training in this topic has been launched at several universities in Hungary. This paper describes the results and the experiences gained during the postgraduate education in precision farming at the Óbuda University Alba Regia Technical Faculty. The new technology is largely based on knowledge that previously belonged to the field of geomatics, such as remote sensing, UAS, terrain modeling, GNSS, etc., so there is a need to teach them. A new course was created after studying educational requirements of precision agriculture and state of the art technologies. In addition to the basic knowledge of precision farming technology, the training focuses on data acquisition and data processing as well as special thematic applications are also part of the curriculum. The focus is on case studies covering a wide range of applications.

In our article we present a specific curriculum, examples, and experiences to address the real challenges proposed by farms in using these technologies. Cooperation with farmers and agricultural companies corresponding to the education is also presented.

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