ISPA Newsletter 7(2) February 2019 : Poland PA, PA Events

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International Society of Precision Agriculture

MONTHLY NEWSLETTER



Precision Agriculture in Poland

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The total agricultural land area in Poland in 2017 was 14.6 million ha, while the total sown area was 10.8 million ha. Cereals consisted of 70.7% of the sown area. The total number of farms, 1.4 million, is decreasing but is still one of the highest in Europe. Farms of 50 and more hectares account for of only 2.5% of the total number of farms, but cover about 31% of the agricultural land area. The average agricultural land area per farm is varies greatly depending on the region of Poland, the smallest in the southeastern part reaching only 4.1 ha in Małopolskie Voivodship and the highest, 30.8 ha, in the Zachodniopomorskie Voivodship (northwestern Poland). Much bigger farms are usually located in the northern and northwestern part of Poland are characterized by more intensive agricultural production than those located in southeastern Poland. That range of farm size helps explain why Polish farms differ in terms of precision agriculture (PA) adoption. Due to glaciation, fields are often characterized by high spatial variability of topography and soil properties, which increases the potential for adoption of PA solutions. Environmental conditions (growing season, annual rainfall, soil quality) result in a yield potential is about 30-40% lower in Poland than in Western European countries.

The current PA situation is:

- the number one PA tool used, due to its most rapid pay back, is Global Navigation Satellite Systems (GNSS) autosteer and lightbars,
- auto section control of spreaders, sprayers and planters are being used more often even on medium size farms due its simplicity in use and savings on agricultural inputs. On irregularly shaped fields and fields where tramlines are not established these savings are estimated by the farmers as 5-15%.
- yield mapping is used mostly for grains and winter rape. The total number of combines equipped with a yield mapping system is estimated to be a few hundred. There is one potato harvester with yield mapping,
- the quality of yield mapping is quiet often limited by the lack of proper calibration of the system. Moreover, yield data due to its information-intensive nature and lack of proper processing are not often used for decision-making,
- there is one combine with a grain protein sensor used for research purposes,
- soil sampling together with a creation of soil fertility maps has been offered by PA companies and crop consultants for about 15 years,
- variable rate application of potassium, phosphorus and lime fertilizers is used on big and very big farms, mostly based on grid soil sampling,
- a few companies offer soil electro-conductivity mapping to do soil sampling by management zones,

but the within field soil electro-conductivity patterns are usually not verified even by soil texture or other soil characteristics determination,
- small and very small farms very often do not do any soil sampling,
- a few companies started to offer processing of satellite images via website applications to estimate biomass production and yield potential, and to produce maps, mostly for variable application of nitrogen,
- the total number of active optical sensors used for variable application of nitrogen in cereals is estimated to be several dozen including all the makes offered worldwide,
- variable rate application of pesticides and variable rate seeding is estimated to be used only on a few to dozen farms,
- the biggest farms use software based on GNSS technology to improve work efficiency of farm tractors and machinery,
- PA is taught at a few universities and recently also in technical, agricultural secondary schools.

PREGA: Next Week in Hungary, 19-20 February 2019



Demonstration of Drone Technology for Aerial Spray

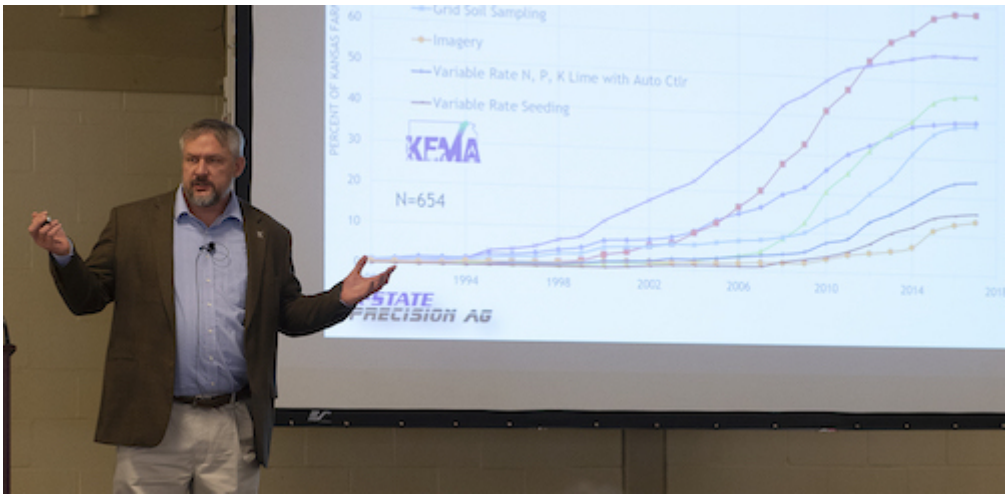
Recently, on January 14, 2019 a high level delegation headed by the Dr. Yubin Lane from South China University, China visited University of Sargodha, Punjab-Pakistan. The purpose of the visit was to introduce precision agricultural technologies to the researchers and farmers of the province of Punjab-Pakistan. Dr. Yubin presented the documentary and slides to demonstrate the applications of Drone technology in the field of agriculture. The delegation visited the agricultural fields in the agricultural campus of the University of Sargodha and practically demonstrated the applications of drone technology first time in the history of the agricultural campus of the University of Sargodha, Punjab-Pakistan. The delegation explained the effectiveness of the drone technology for precise applications of sprays on the crops and other input resources in the field.
<more online>

PA Book in Persian Recently Published

ISPA member Hossein Navid (Ph.D., Associated Professor, Department of Biosystems Engineering, University of Tabriz in Iran, mailto:navid@tabrizu.ac.ir), together with his colleague J. Robati, have recently published a book in Persian entitled “An Introduction to Precision Agriculture”. The book

consists of 10 chapters. Chapter 1 includes PA definitions, objectives, cycle components and history. In chapters 2 and 3, types of field data, their collection, interpolation and mapping are discussed. In chapter 4, global positioning systems and their use in PA are addressed. Yield monitoring treated in chapter 5 and variable rate technology in chapter 6. Remote sensing, its application for within-field spatial variability study, satellites and sensors are presented in chapter 7. Off-road vehicles auto guidance and commercial systems are discussed in chapter 8. The last two chapters are dedicated to precision livestock farming and smart irrigation. Please contact Dr. Navid for more information about the publication.

ISPA Treasurer delivers keynote at LSU AgCenter Digital Ag Data Conference



Terry Griffin, an economist with Kansas State University, explains a graph showing adoption rates among Kansas farmers of various technologies during his presentation at the inaugural LSU AgCenter digital agriculture conference at the State Evacuation Shelter near Alexandria on Jan. 29, 2019. Photo by Olivia McClure/LSU AgCenter
<more about the conference>

Upcoming Events

25-27 FEB 2025
GIS & Drone Applications in Agriculture Conference

29 JUN - 3 JUL 2025
15th European Conference on Precision Agriculture
Barcelona, Spain
ecpa2025.upc.edu/

22-31 AUG 2025
XXXII ISSCT Centennial Congress
Cali, Colombia
issctcennial.com/

14-16 OCT 2025
11th Asian-Australasian Conference on Precision Agriculture
Chiayi, Taiwan
ispag.org/Events/ACPA

2-4 FEB 2026
International Crop Modeling Symposium (iCROPM2026)
Florence, Italy

Week of 13 JUL 2026
17th International Conference on Precision Agriculture and the 11th Brazilian Congress on Precision Agriculture
Porto Alegre, Brazil
ispag.org/icpa

See the ISPA website for a complete list of events.
Do you have an event that would be of interest to our members? Send us an email to let us know.

Precision Agriculture Definition

Precision Agriculture is a management strategy that gathers, processes and analyzes temporal, spatial and individual plant and animal data and combines it with other information to support management decisions according to estimated variability for improved resource use efficiency, productivity, quality, profitability and sustainability of agricultural production.

The International Society of Precision Agriculture (ISPA) is a non-profit professional scientific organization.
The mission of ISPA is to advance the science of precision agriculture globally.

Contact newsletter@ispag.org to suggest content for future newsletters or visit www.ispag.org for more about the Society