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## Research trends in precision farming

**Victor I Balabanov**

Russian State Agricultural University, Russia

Educational and scientific center of precision agriculture was opened in 2007 based on the experimental field of the Russian State Agrarian University - Moscow Timiryazev Agricultural Academy (Timiryazev RSAU-MAA). The framework of the implementation of innovative educational program for the organization and implementation of educational, research and development of innovative activities based on the use of modern agricultural technologies and principles coordinate agriculture. Long-term results of research in a field experiment scientific center of precision agriculture demonstrated the advantage of the individual elements of precision farming technologies, crop and landings of agricultural crops, for growing potatoes, fertilizing of winter wheat herbicides in crops, indirect determination of the content of nutrients in the soil, with the preparation of electronic maps of yields. For example, it has been found that the pesticide and the flow of the working solution by using precision farming techniques is reduced by 25-30%, saving of fertilizers and averages 20-30%. Currently, the most advanced technologies, which paid close attention to the Timiryazev RSAU-MAA - is the use of unmanned aerial vehicles (UAVs) and the development of robotic systems for agricultural purposes. The use of UAVs allows you to quickly and effectively conduct an inventory (geofencing) of agricultural land, create field maps to assess their inventory value, build orthophotos field surface, to monitor the state of fallow fields, agricultural crops, carry out the calculation of standardized biomass vegetation index and other plant indices, as well as to carry out various kinds of control and management of agro-technical measures. Russian agrarian sector as in the entire world agriculture still lags in the use of robots than on other sectors of the economy, so research in this area will grow with each passing year more and more rapidly.



### Biography

Victor I Balabanov is a Doctor of Technical Sciences, Professor and Dean of the faculty "Processes and Machinery in Agribusiness" at Russian State Agrarian University - Moscow Agricultural Academy named after K A Timiryazev. He is Head of Sub Committee (SC 8) "Radio navigation and control system in agriculture" of the Technical Committee for Standardization (TC 363) "Radio navigation" Federal Agency for Technical Regulation and Metrology (Rosstandart). He is an Author of over 300 scientific and educational works, including 25 monographs, scientific journals and popular science books, 25 descriptions of inventions and 11 on scientific research reports.

vbalabanov@rgau-msha.ru

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