

SOME CONCEPTUAL AND THEORETICAL APPROACHES TO THE EXPLOITATION OF DRONES IN AGRICULTURE

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Unmanned aerial vehicles represent a key technology for farmers, as it minimizes costs and increases productivity through usage reduction of fertilizers, insecticides, herbicides, fungicides and other pesticides, therefore rising the general security of crops and yield. The major advantages of drones will make possible for UAV to spread in the agricultural community in the following years. Via this article, we clarify some aspects regarding to regulation of agricultural drone utilization and exploitation, highlighting, especially, the advantages of this technology implementation, but also its actual state in the Republic of Moldova.

In order to conduct the study, the following research methods will be employed: the Observation Method, the Survey Method, the Comparative Method and the Monographic Method.

An agricultural drone is an unmanned aerial vehicle (UAV) employed in agricultural operations, primarily for optimizing crop yields and monitoring crop growth and production. Agricultural drones provide information about crop growth stages, crop health, and soil variations. Multi-spectral sensors are used on agricultural drones to visualize electromagnetic radiation beyond the visible spectrum, including near-infrared and shortwave infrared.

Currently, only two main operators specializing in agricultural drone services operate in the Republic of Moldova. Their area of operation covers the entire country, with operators transporting their equipment to requesting farms by road. Lately, agricultural drone services have been in high demand during the peak months from April to July. Requests are scheduled at the beginning of the new calendar year, and the service providers' schedules are filled well in advance of the start of the season's work. These services are particularly sought-after during periods of herbicide application, even though they prioritize fields with a minimum working area of 50 hectares. The cost of treating one hectare varies between 250 to 300 Moldovan Lei. The convenience of these services also lies in the precise calculation of the quantity of solutions required for spraying an area of 50 hectares, treated water with the appropriate pH according to the chemical compounds used, fungicides, herbicides, etc., or 5-10 hectares of orchards. Approximately 70% of the services provided are for areas planted with cereal crops.

Keywords: agriculture, agricultural robot, drone, software, UAV.