



Drones: Agriculture's New Best Friend!



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Opinion

Drones or Unmanned Aerial Vehicles (UAVs) are commonly associated with the military. Interest in drones has been growing by leaps and bounds and has become one of the hottest most popular emerging technologies today. They provide numerous opportunities in a wide range of industries from law enforcement to agriculture. The overall drone market is around \$127 million. Global Market Insights reports that the agricultural drone market will be set to surpass \$1 billion by 2024. [1] It is one of the industries that is reaping the benefits of drone technology. Michal Mazur writes, "that drone-powered solutions in all applicable industries is significant and that one of the most promising areas for drones is agriculture, as drones can address several major challenges" [2].

What are Drones?

There are as many definitions for drones as there are drones. However, the most common definition is a flying robot. The more formal definition for a drone is an Unmanned Aerial Vehicle or UAV. Drones are different from other aircrafts as they do not carry a human pilot. They are often controlled by an onboard computer that is flying autonomously through software-controlled flight plans embedded in software that works in conjunction with onboard sensors and Global Positioning Systems (GPS). Many can be flown from a remote location by a human pilot or operator. Drones can range in price from \$50 to several thousands of dollars, but agricultural drones can cost from below \$1,000 to more than \$25,000 and are designed specifically for data gathering for farmers and agriculture service providers to assist farmers.

Applications of Drones in Agriculture

As agricultural drone technology continues to gain in popularity, farmers are learning the benefits of this growing, emerging technology. Agricultural experts and scientists are seeing how agricultural drones allow farmers to constantly monitor the conditions of their crops and livestock by air to quickly and efficiently find and address problems. Agricultural drones are used to map and survey crops and to spray crops faster and better than traditional tractors. Lastly, agricultural drones help reduce the costs and protect workers from exposure to potential harmful pesticides and other chemicals [3].

Opportunities and Challenges for Agricultural Drones

There are several opportunities and challenges for agricultural drones. Some of the opportunities include:

- a) Drone can be used for soil and field analysis.
- b) Drones can be used for monitoring vast fields of crops.
- c) Drones can spray over vast areas of land faster and more efficiently than traditional tractors.
- d) Drones can assess when parts of fields are dry and can spray the necessary liquids.
- e) Drones can analyze and track the health of crops.
- f) Drones are easy, quick to deploy, and faster than more traditional farming methods.

Some of the challenges for agricultural drones include:

- a) It can be challenging to keep abreast of Federal Aviation Authority (FAA) rules and regulations
- b) The steep learning curve for drones can be prohibitive.
- c) The short flight times for drones of between twenty minutes to an hour can be challenging to drone operators. However, more expensive drones have considerably longer flight times.
- d) Costs for drones, accessories, and upgrades can be quite expensive.

Conclusion

In the future, there will be exponential growth in the area of drones as the cost of drones, agricultural drones in particular, continue to drop and become easier to use. Agricultural drones will allow farming to become a highly data-driven industry, which will lead to an increase in productivity, yields, and Return on Investments (ROI) [5]. Just remember that the next time you need your vast crops monitored, surveyed, analyzed, watered, and sprayed, call on your new best friend the agricultural drone to help you out.

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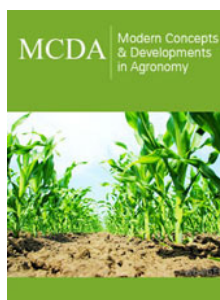
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