

Drones present various opportunities for Agricultural Industry



There are plenty of opportunities that can be explored with the advent of Unmanned Aerial Vehicles (UAVs), commonly known as drones, especially in the modern agriculture setting.

According to CropLife Philippines Executive Director Ramon Abadilla, its benefits are being embraced by different countries and the Philippines has the potential to utilize this technology as well.

“We already have farms using drones for spraying, and we also have regulations in place to ensure its safe operations. We want to make more farmers aware of the possibilities that they can expect from UAVs which will greatly ease their work in their farms,” he said. “Perhaps, this may also

encourage our young folk to get into farming as well.”

Agronomic Advantages

Among the major advantages of using UAVs for crop spraying is the significant time and labor savings they offer, especially in smaller rice paddies. Unlike manual backpack sprayers that require a lot of effort in dealing with water-logged environments, UAVs can cover larger areas efficiently. UAVs can also access steep and hard-to-reach areas in vineyards that are inaccessible to ground-based sprayers. Their ability to reduce the time spent returning to the mixing and loading site further enhances their efficiency.

Variable-Rate Application and Pesticide Reduction.

UAVs offer the potential for variable-rate application, decreasing pesticide use by about 50 percent. While UAVs might not outperform large mechanized ground sprayers in vast row-crop agriculture fields, they are perfect for small- to medium-sized production units, especially in waterlogged or irregular terrains. They adapt the deposition patterns of manned aerial applications, treating larger areas in less time compared to manual backpack sprayers and small ground-based units. UAVs' access to fields regardless of wet soil conditions provides the flexibility required for effective pest management.

User Benefits and Reduced Risk

The separation of the applicator from the spray application process reduces the operator's exposure to pesticides significantly, making the exposure comparable to that of a bystander. Also, the risk associated with falling and slipping with a full tank during operation is eliminated with UAVs.

Potentials for the Future

UAVs have the potential to operate in swarms, covering vast areas rapidly, but regulatory adjustments are needed in some regions to accommodate this technology fully. In larger agricultural units, the relatively short flight time of individual UAVs can be overcome through swarm technology, making them more efficient for treatment.

Economic Viability and Transformative Impact

Agricultural spray drones offer more than just technological advancement. Ranging from \$1,500 to \$20,000 for commercial-grade multi-rotor models, these UAVs are a cost-effective investment compared to traditional farming equipment. The integration of scouting UAVs enables higher resolution crop data collection, identifying stressed areas, pest infestations, disease outbreaks, and accurate plant counts swiftly.

Indeed, there are many exciting developments that we can look forward to in the future.