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Cooperative Extension Service

Farm Update

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AGRICULTURE & NATURAL RESOURCES EDUCATION
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Drone Sprayer Certificates and Licenses

Aerial drones used in agricultural seeding and pesticide application are growing at a rapid rate as technology quality improves and availability increases. While start-up costs are expensive, the opportunity these aircraft provide for application regardless of plant height or field conditions is quite appealing compared to the cost of hiring commercial aerial application services. Learning to use and maintain the equipment takes some time, but the greatest obstacle to adopting this technology is meeting FAA requirements which accompany drone aircraft used in commercial activities.

The operation of drone sprayers must follow the rules and regulations laid out by the Federal Aviation Administration (FAA), as well as state and local regulations. License requirements vary with the weight of the drone sprayer. The FAA Part 107 Remote Pilot Certificate is required for the operation of drone sprayers weighing less than 55 pounds at take-off. Drones over 55 pounds are operated under FAA Part 91 (General Operation and Flight Rules), but the Remote Pilot Certificate is still required. FAA Part 137 (Agricultural Aircraft Operator) regulates the dispensing of chemicals and agricultural products.

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Petitions for exemptions from certain FAA rules are needed, as specific sections of the FAA rules prohibit spraying or would not apply to drone sprayers. For example, Part 137 was originally passed in the mid-1960s and was specific to human-occupied aerial sprayers. While there have been updates and amendments to Part 137, sections related to seat belts and carrying of certificates on the aircraft, for example, do not apply to drone sprayers. Drone pilots must file petitions for exemptions to these non-applicable sections. These petitions must be completed 120 days prior to the exemption commencing. Once completed, FAA Part 137 requires that the Agricultural Aircraft Operator Certificate Application be turned in to the nearest Flight Standards District Office (FSDO), which is in Louisville for our area.

For drone sprayers weighing less than 55 pounds at takeoff, FAA Part 107 requires that individuals pass the FAA Remote Pilot Certification Knowledge Test. The knowledge test is composed of 60 questions and requires a score of 70 percent or greater to pass. The cost of taking the knowledge test is $175. Furthermore, Part 107 dictates that all drones must be registered with the FAA; the current cost of a three-year registration is $5.

Petitions for exemptions to non-applicable sections of Part 107 and 137 must be submitted to the Federal Docket Management System (FDMS) online or by mail. For instance, Section 107.36 (carriage of hazardous material) must be exempted, as several agricultural chemicals are dispensed that could be classified as hazardous materials. It is important to check the most current FAA regulations, which are available here: https://www.faa.gov/uas/advanced_operations/dispensing_chemicals. The EPA now requires specialized training for aerial applications, moving those private pesticide applicators into the commercial/non-commercial Category 11 certification.

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Currently, at least one visual observer in addition to the person in charge is required for the operation of drone sprayers weighing more than 55 pounds at takeoff. Also, the use of drone sprayers weighing more than 55 pounds requires adherence to a 500-foot buffer zone restriction from all persons, structures, and vehicles not participating in drone operations. If the person in charge meets certain conditions such as a minimum number of hours of experience, flying less than 20 feet above ground level, and other provisions/permissions, the drone sprayer could be operated within 100 feet of vehicles and structures.

Insurance is another fundamental aspect of commercial drone use. Before putting a drone in the air, speak with your insurance provider to make sure the aircraft is covered should damage occur to it. Second, make sure you are protected from liability should the drone cause property damage or injury. If your provider cannot provide the coverage necessary to offset liability, contacting a dedicated aviation insurance company will be necessary.

This article was adapted from UK Extension publication AEN-171, General Considerations for Drone Spraying. The complete document is available at the extension office or on my website at https://daviess.ca.uky.edu/anr.

Mark Your Calendar

The 2024 Agricultural Visionaries Hall of Fame inductee reception is January 30 from 5-6:30 p.m. in the Ag Expo area of the Owensboro Convention Center.

The 50th Annual Ag Expo is January 31. Doors open at 7:30 a.m. with programs starting at 8.

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