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The purpose of this experiment was to test the spread and droplet size of a drone application with and without a chemical surfactant adjuvant. It is hypothesized, the water with the chemical surfactant adjuvant will have less ultrafine particles than the water without the adjuvant.The process was to set up the target application area by laying the cardboard on the ground. After that, attach the water sensitive paper to the cardboard with tape. Next, do three separate flights with each drone filled with water, then empty each drone and refill each drone with 10 mL of chemical surfactant adjuvant mixed into 5 gallons of water, run three flights with both drones for each test. The results show that the adjuvant reduced the number of ultra fine particles that hit the desired area. The chemical surfactant adjuvant worked because it increased the number of total particles hitting the water sensitive paper. The t40 increased from 74 to 114 and the t100 increased from 233 to 254 droplets detected. In conclusion, this experiment proved the hypothesis correct. The adjuvant did help decrease the number of ultra fine particles and increase the desired amount of particles hitting the desired target in the testing.

Awards Won: