How atomizers really work

It is not true that rotary atomizers sling half the chemical down toward the target area and the other half up into turbulent, unstable air from the wing.

The atomizer is driven by the airflow past the unit by means of three highly efficient fan blades. These are adjustable in pitch, enabling the rotational speed of the atomizer to be varied as required.

The spray plume from each atomizer remains very narrow for many meters behind the atomizer gauze. Initially, the droplets are thrown away from the gauze but they have very little inertia and the airflow parallel with the axis of the gauze changes the trajectory of the droplets very rapidly and they remain in a very narrow plume.

On all modern aircraft the boom is well below the trailing edge of the wing and the diameter of the spray plume immediately behind the atomizer is very small compared with the distance below the wing. Once behind the aircraft the trajectory of the spray droplets is determined entirely by the turbulent wake, gravity and the wind. The initial movement of the droplets within the first few centimeters after leaving the gauze is completely insignificant to how the pattern develops.

The rotational speed of an atomizer will increase with airspeed, so it is necessary to adjust the blade angle of the blades on the rotary . In both the ASC and Micronair, it is the blade angle of the atomizer that controls the atomizer rotational speed.

Because of this ability to adjust blade angle, it is quite possible to see an atomizer VMD be very similar to a flat fan VMD. The atomizer operator can choose his target VMD by adjusting the blade angle.

The ability to control droplet size in the atomizer results in the ability to create a much tighter, more uniform spectrum - fewer small droplets and less big droplets.

Investing in atomizers for your operation takes a significant financial commitment -$12,000 for a small aircraft and up to $25,000 for larger planes. Those who adopt this technology become highly informed of operation, calibration and maintenance of this system. Given the sizable dollar investment, operators considering atomizers spend a great deal of time understanding atomization and how it will do a quality job for the grower. There is lot to learn and without proper research and understanding the technology bad assumptions can lead to incorrect thinking.

Results, not opinion, are what matter.

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ASC Atomizer

Micronair AU5000