MICRONAIR
AU5000LD ATOMISER
Micron Sprayers Limited

- UK based and owned
- Established 45 years
- Inventor of CDA using rotary atomisers
- 50 employees
- Sales to over 90 countries
- Micronair Division on Isle of Wight
Bembridge Fort
Micronair AU5000LD Atomiser

Design Objectives:

• To produce spray droplets large enough to minimise off-target drift

• To produce these droplets within a narrow spectrum of sizes

• To work effectively over a wide range of airspeeds – from helicopters to fast turbine aircraft

• To be compatible with existing AU5000 atomisers
The Challenge

First:

• To produce spray droplets suitable for both Low Volume (LV) placement spraying and Large Droplet Placement (LDP) spraying with a narrow spectrum of sizes and a minimum of drift-prone fine droplets

And then …

• To release these droplets into the air around the atomiser without shattering as they accelerate into the airstream
AU5000LD Disc

GROOVE

TOOTH

PATH OF LIQUID
Effect of Airspeed

- A toothed disc produces a narrow spectrum of spray droplets
- These droplets will shatter if they are released directly into a fast airstream after they leave the atomiser
Shattering of Spray Droplets

- Large droplets shatter at lower airspeeds than smaller droplets
- Graph shows theoretical shatter velocity when droplet is introduced directly into airstream
Effect of Atomiser RPM & Airspeed on Droplet Size
Profiled Air Deflector

TRAJECTORY OF DROPLET

AIR
Profiled Air Deflector
Slotted Air Deflector

TRAJECTORY OF DROPLET

AIR
Slotted Air Deflector
VMD vs RPM & Airspeed

Droplet Diameter (µm VMD) vs Atomiser RPM for different Airspeeds:
- 100 MPH
- 110 MPH
- 120 MPH
- 130 MPH
- 140 MPH
RPM vs Airspeed & Blade Angle

Airspeed (MPH)

Atomiser RPM at 10 l/min Flow

- 35 Deg
- 45 Deg
- 55 Deg
- 65 Deg
- 75 Deg
- 85 Deg
Installation of AU5000LD

• Available as complete atomiser – directly compatible with standard AU5000

• Also available as conversion kit for existing AU5000 atomisers

• AU5000LD conversion replaces standard gauze

• Original hub, spindle, mounting clamp, pipework etc retained

• Atomiser can be re-fitted with standard gauze for ULV application
AU5000LD Conversion Kit
AU5000LD Discs with Fungicide
AU5000LD Fungicide Gauze
AU5000LD Fungicide Gauze
Operating Technique

• Regardless of atomiser technology, high airspeeds will always cause some secondary shattering of spray droplets and a decrease in overall VMD of the spray

• High airspeeds should be avoided for LDP application in critical areas

• Both atomiser RPM and airspeed must be considered when determining correct calibration of atomiser
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