

Environmental-compatibility criteria for agricultural spray nozzles

Integrated plant protection is a term used to describe the application of physical, biological and chemical processes with allowance for economical damage thresholds. In that connection, ecologically viable techniques are becoming increasingly important, with the loss-reducing application of plant protectants enjoying a special place value.

CEN and JKI (former BBA)

Compliance with CEN and JKI (former BBA) standards (practically identical) regarding flow-rate tolerance and uniformity of distribution is instrumental to the optimal, selective use of plant protectants. The flow rates of new agricultural spray nozzles must remain within +/- 5 % of the table values.

The maximum allowable coefficient of cross-distributional variation within the stated pressure range and corresponding spray heights is 7 %.

These requirements derive in good part from the dependable quality of Lechler nozzles.

Drift

In the field of plant protection, the agent-laden droplets that do not land on the target surface but are instead carried off by the wind or thermal currents are referred to as drift.

Such errant additions to surrounding areas can damage adjacent crops, contaminate nearby waters, endanger man and animals, emburden other crops and adulterate the dosage applied to the target crop.

Drift is caused by a number of equipment-specific and meteorological factors, e.g.:

- droplet size
- sprayer velocity
- spray height
- wind velocity
- relative temperature
- ambient humidity

Technical know-how and knowledge of the determining factors enable good control of drift. Good, modern practice therefore includes:

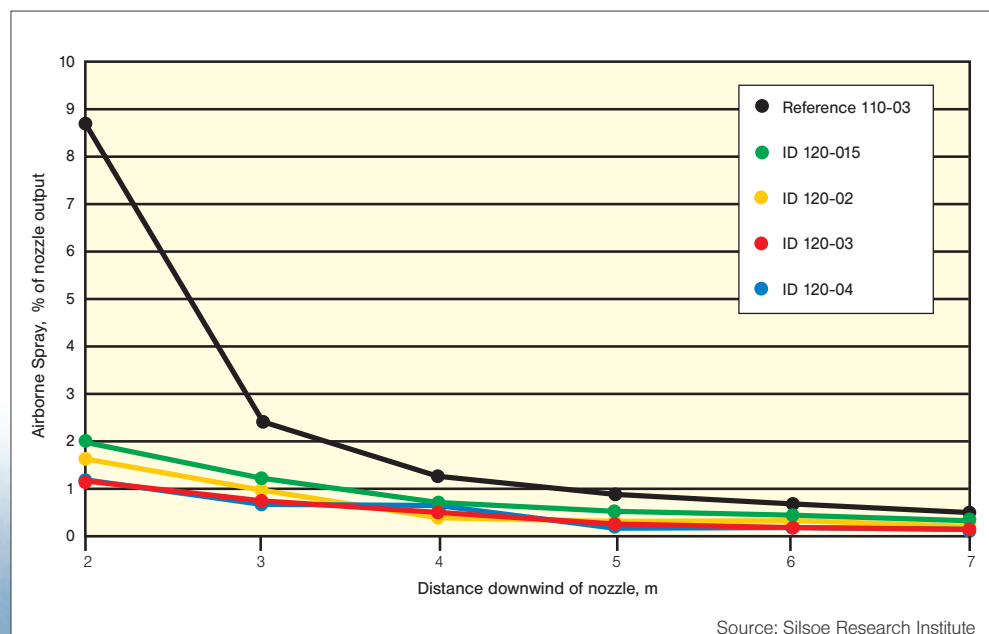
- such drift-reducing measures as very coarse-droplet application through ID/IDN/IDK/IDKN/IDKT nozzles
- allowance for the direction and velocity of the wind

- limitation of plant protection measures via ID/IDN and IDK/IDKN/IDKT-nozzles to wind velocities of 5 m/s or less, AD nozzles to 4 m/s or less, and LU nozzles to 3 m/s or less

- interruption of plant protection measures at ambient temperatures above 25 °C and relative humidity levels below 30 %

- sprayer speed in accordance to national agricultural practice

- adherence to the optimal (in special cases the minimal) spray height.



Airborne Spray Profiles of Lechler ID-Nozzles in comparison to conventional Flat Fan Nozzle