ENGINEERING
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No compromises in weed control in sugar beet

Whitepaper

NO COMPROMISES IN WEED CONTROL IN SUGAR BEET

(Dr. Robert Heinkel, Lechler GmbH)

The basis for an economical and efficient cultivation of sugar beet is, among others, the effective control of weeds and grasses. In addition to maize, sugar beet is one of the field crops that cannot be grown successfully without efficient weed control.

The past years have shown again and again that weeds that were not sufficiently combated at the 1st herbicide treatment are usually controlled poorly with the subsequent herbicide applications or only with higher application rates. The insufficiently controlled weeds often lead to late weeding and as a result to firefighting measures, which are partly unjustifiable by the poor efficacy and the costs. In addition to the selection of the herbicides and the scheduling of the application, the recommendation is to carry out the herbicide applications in the morning and evening hours.

Optimum nozzle selection

The right nozzle selection is an important component in herbicide management. An optimized storage and covering of the still small weed or grass stages is best achieved via double flat fan nozzles.

The IDKT nozzle series offers the best conditions in terms of deposition and biological efficacy. The angled trajectory of the droplets in the direction of travel forwards and backwards improves the deposition to vertical target surfaces and effectively reduces spray shadow.

These advantages are particularly useful under mulch seeding conditions and the 2nd and 3rd herbicide application, when the sugar beet leaves produce spray shadows on weeds underneath.

Droplet spectrum and degree of coverage

The droplet spectrum of a nozzle has a great influence on the degree of coverage. In particular, good coverage must be ensured when applying contact active ingredients.

In general, as pressure increases, the droplet spectrum of a nozzle becomes finer. However, the application is often a compromise in compliance with weather conditions and the rules of use.

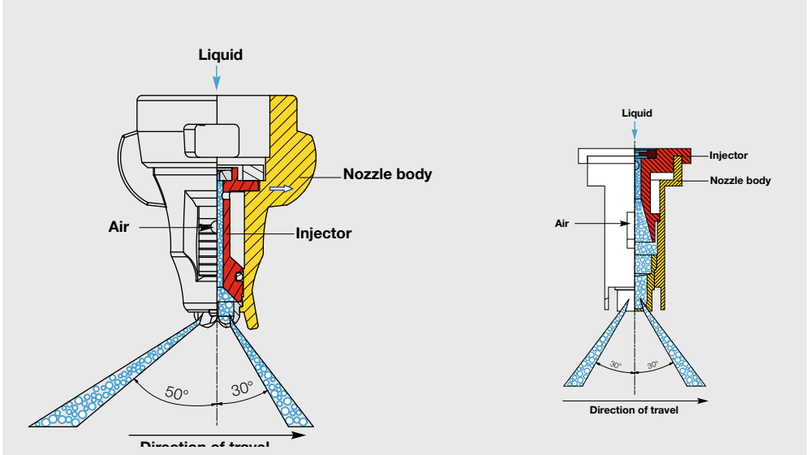
Ideally, the pressure range for the IDKT should be in the range around 3 bar, with the IDTA around 5 bar. The recommended pressure ranges are 1.5 – 3 bar for the IDKT and 4 – 8 bar for the IDTA.

Drift reduction

The nozzle sizes -02 to -06 of the IDKT series have a drift reduction of 90% in the pressure range of 1.5 and 1 bar respectively. The asymmetrical IDTA double flat jet nozzle is recommended for higher driving speeds and thus more impact in more hectares. A LERAP 4star rating in UK is already available.

Suspensionspräparate

Despite the good formulation of the sugar beet herbicides, special attention should be paid to the safe operation of the nozzles when using suspension formulations. In addition to the correct filtering, attention must be taken to ensure appropriate nozzle care and cleaning.



Schematic view of the double flat spray arrangement of IDTA (left) and IDKT air injector twin nozzles.

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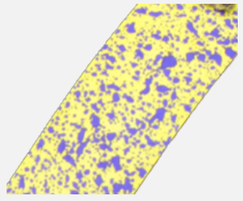
Advantages of IDKT and IDTA twin air-injector nozzles

Optimal deposition to vertical target surfaces, e.g. grasses

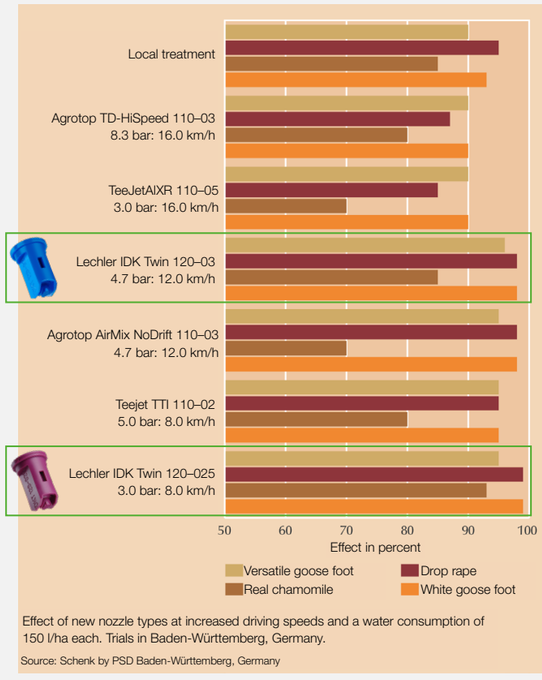
Image source: https://bisz.suedzucker.de/pflanzenschutz/ungraeser/acker-fuchsschwanz

Optimal coverage of contact active ingredients

The droplet spectrum is finer up to a droplet size class compared to the normal air-injector flat fan nozzle of the same design.



Increase of forward speed and thus more hectares without reducing the biological efficacy



Effect of new nozzle types at increased driving speeds and a water consumption of 150 l/ha each. Trials in Baden-Württemberg, Germany.

Source: Schenk by PSD Baden-Württemberg, Germany

Sugar beet: Herbicidal activity at higher speeds

Source graphic: DLG-Mitteilungen 02/2009 (DLG Messages Magazine)

Reduction of spray shadows

- on weeds covered by the crop
- on cloddy soils
- on mulch seeding

Straw mulch in sugar beets

Sowing in mulch seed

Cloddy soil in sugar beets

Please find detailed product information and further information here:

IDKT nozzle
Production formationen at
www.lechler-agri.com/products/idkt

IDTA nozzle
Production formationen at
www.lechler-agri.com/products/idta

Entries for drift-and-loss-reducing recognized Lechler nozzles
Current list at www.lechler-agri.com/driftandlossreducingtechnologies

Nozzle recommendations in sugar beet
Current recommendation at
www.lechler-agri.com/nozzlerecommendation-sugarbeet

Recommendation for correct nozzle cleaning
www.lechler-agri.com/recommendation-nozzlecleaning

Apple Android
Nozzle calculator app

www.lechler-agri.com

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