



# TEST REPORT

of the  
**Julius Kühn-Institut**  
Federal Research Institute  
for Cultivated Plants, Braunschweig



**Flatfan nozzle Agrifac HTA D3-21 TKSS 5 (37.5 cm)**

**(plastic body with stainless steel nozzle TKSS 5)**

**Approved for spraying field crops**

**Applicant and Manufacturer**  
Agrifac Machinery B.V.  
Eesveenseweg 15  
8332 JA STEENWIJK  
NETHERLAND

**Approved on**  
**13 February 2019**

## Assessment

The flatfan nozzle Agrifac HTA D3-21 TKSS 5 (plastic with stainless steel nozzle TKSS 5) was tested with a standard nozzle line (19 mm diameter) with nozzle holders and membrane valve. The nozzle is suitable for spraying field crops, provided that the following technical requirements are fulfilled:

1. Installation in a spray boom with a sufficient and a steady amount of liquid flow,
2. 375 mm nozzle spacing,
3. 50 cm between nozzles and spray target (consistency of evenness of cross distribution proved satisfactory at a distance range from 40 cm to 50 cm),
4. Spray pressure – measured in front of the nozzle – between 2.0 and 4.0 bar combined with air pressure between 0.4 and 2.0 bar with a relation of air- : liquid pressure from 1:1 to 1:5, liquid volume flow per nozzle as stated in table below.

Suitable precautions should be taken to assure that the nozzles do not get blocked up or drip when in use. The nozzle bodies must be straightened precisely vertically. By the use of multiple nozzle bodies it is essential to check the exact adjustment after every nozzle change.

Pressure (bar) air / liquid	Liquid flow volume without accessories (l/min)	Max. deviation of single nozzle flow from the dosage tables	Evenness of cross distribution at (cm) 40 / 50 / 60 (CV %)	Droplet spectrum (BCPC-Standard)
0.4 / 2.0	-	-	4.9 / 4.6 / -	-
0.6 / 2.0	0.52	-	5.0 / 4.6 / -	-
1.0 / 2.0	-	-	5.3 / 5.2 / -	-
0.6 / 2.5	-	-	-	very coarse
0.6 / 3.0	-	-	4.8 / - / -	-
0.8 / 2.5	-	-	-	medium
1.4 / 2.5	-	-	-	fine
1.0 / 2.5	-	-	-	-
1.0 / 3.0	-	-	4.9 / - / -	-
1.5 / 3.0	0.53	-	5.5 / - / -	-
0.6 / 4.0	-	-	5.9 / 4.9 / -	extreme coarse
1.0 / 4.0	0.77	-	4.8 / 4.7 / -	medium
1.5 / 4.0	-	-	4.9 / 5.0 / -	fine
1.4 / 2.0	-	-	-	-
1.6 / 2.5	0.67	-1.59 %	-	-
1.4 / 3.0	0.87	3.12 %	-	-
2.0 / 3.0	-	-	-	-
2.0 / 4.0	0.97	4.81 %	-	-

## Field test

The nozzles were used in the year 2015 on a total of 4500 hectares, a sufficient effect of the plant protective measures was confirmed.

## Basics for testing

The tests were carried out on basis of the Regulations for Testing Plant Protection Equipment (JKI-Guideline 2-1.1:2013) and of ISO 5682-1:1999. The requirements of ISO 16119-2:2013 and of JKI-Guideline 1-2.1:2013 were fulfilled.

### Field testing:

Landwirtschaftskammer Niedersachsen  
Pflanzenschutzamt  
Wunstorfer Landstraße 9  
30453 Hannover

### Technical testing:

Institute for Application Technique in  
Plant Protection  
Messeweg 11-12,  
38104 Braunschweig