



TEST REPORT

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



Flatfan nozzle Agrifac HTA 10/39-TKSS4
(Stainless steel with plastic body)

Approved for spraying field crops

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

Approved on
9 January 2020

Assessment

The flatfan nozzle Agrifac HTA 10/39-TKSS4 (Stainless steel with plastic body) was tested with a standard nozzle tube (19 mm inside diameter) with quadruple nozzle body 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. 250 mm nozzle spacing,
3. 30 cm between nozzles and spray target (consistency of evenness of cross distribution proved satisfactory at a distance range from 20 cm to 40 cm),
4. Spray pressure – measured in front of the nozzle – between 2.0 and 6.0 bar combined with air pressures between 0.4 bar and 1.5 bar with a ratio of air : liquid pressure from 1:2 to 1:6; 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 adjustment tool offered by Agrifac should be used to align the TKSS4 nozzle tips. The nozzle tips must be aligned exactly vertically to achieve sufficient uniformity of the cross distribution. When using multiple nozzle bodies, pay attention to the exact alignment after changing the nozzle.

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) 20 / 30 / 40 (Vk %)	Droplet spectrum (ISO 25358)
0.3 / 2.0	-	-	- / 7.4 / -	-
0.4 / 2.0	0,57	-	- / 5.9 / 5.0	extreme coarse
0.6 / 2.0	0,53	-4.55 %	- / 6.1 / 5.0	-
1.0 / 2.0	0,45	-	- / 6.5 / 5.3	coarse
0.5 / 3.0	0,71	-	7.0 / 5.8 / 4.8	extreme coarse
0.6 / 3.0	0,70	-4.00 %	6.2 / - / 4.8	very coarse
0.8 / 3.0	0,67	-4.55 %	5.8 / - / -	very coarse
0.6 / 3.0	0,70	-	4.8 / - / -	-
1.0 / 3.0	0,62	-	4.9 / - / 4.9	-
1.5 / 3.0	0,54	-	5.5 / - / 5.5	medium
0.6 / 4.0	0,82	-	- / 6.9 / 5.9	extreme coarse
1.0 / 4.0	0,77	-4.62 %	- / 4.8 / 4.8	-
1.5 / 4.0	0,71	-	- / 5.0 / 5.0	medium
0.8 / 6.0	1,01	-	- / - / 6.7	very coarse
1.5 / 6.0	0,94	3.64 %	- / - / 5.0	coarse

Loss reducing properties

Included in the list „Loss reducing equipment“ (9 April 2020)

Drift reducing classification	Type of equipment and drift reducing parts	Regulations for use
90 %	Fieldsprayers with nozzle HTA 10/39-TKSS4	First 20 m from field edge spraying with 25 cm distance between nozzles with 5.0 bar fluid pressure and 1.0 bar air pressure, Nozzle height above target 30 cm.
95 %	Fieldsprayers with nozzle HTA 10/39-TKSS4	First 20 m from field edge spraying with 25 cm distance between nozzles with 3.0 bar fluid pressure and 0.5 to 0.8 bar air pressure, Nozzle height above target 30 cm.

Field test

The nozzles were used in the year 2019 on a total of 1117 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 (Guideline 2-1.1:2013) and of ISO 5682-1:1999. The requirements of EN 16119-2:2013 and of JKI-Guideline 1-2.1:2013 were fulfilled.

Field testing:

Landwirtschaftskammer
Nordrhein-Westfalen
Pflanzenschutzdienst, Ref. 62
Nevinghoff 40
48147 Münster

Technical testing:

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