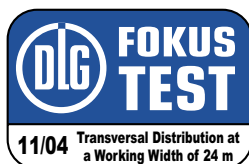


Sulky-Burel S.A.S

Transversal Distribution at a Working Width of 24 m

Twin-Disc Fertilizer Broadcaster Sulky DPX expert

DLG Test Report 5433 F



Manufacturer and registering company

Sulky-Burel S.A.S.

B.P. 92111 – Rue Fabien Burel
F-35221 Châteaubourg Cédex
Telephone: ++33 - 2 99 00 84 84
Telefax: ++33 - 2 99 00 84 95
e-mail: info@sulky-burel.com
web: www.sulky-burel.com



Deutsche Landwirtschafts-
Gesellschaft e.V.
Prüfstelle für Landmaschinen

Short Description

- Mounted solid fertilizer broadcaster with two mechanically driven spreading discs
- Setting elements and spreading discs out of stainless steel
- Hopper volume between 1,500 and 2,700 litres
- 3 sets of spreading discs for working widths from 12 to 18, 18 to 28, and 28 to 36 m for both normal field spreading and border spreading (with an additional, rigidly mounted border spreading vane).
- Border spreading system „Tribord“: through remote control, the drop point is adjusted such that the fertilizer is spread by an additional, rigidly mounted border spreading vane.
- Metering is done by slides which can optionally be controlled from the tractor cab (with the aid of the on-board computer VISION).
- The drop point is set by swivelling the feeding spout. Both sides can be adjusted separately.

Evaluation – Short Version

Test criterion	Test results	Evaluation
Lateral distribution during the spreading of granulated CAN	CV 4.8%	++
Lateral distribution during the spreading of prilled NPK fertilizer	CV 6.3%	+
Lateral distribution during the spreading of compacted potash	CV 7.1%	+

Scale of marks: ++ / + / o / - / -- (o = Standard)

Scope of the Test

The FokusTest included technical measurements of the evenness of transversal distribution on the test stand of the Research Centre Bygholm of the Danish Institute of Agricultural Sciences in Horsens. Transversal distribution during normal field spreading was evaluated according to EN 13739 parts 1 and 2 (solid fertilizer broadcasters and full width distributors – environmental protection). Other criteria were not tested.

Of the five fertilizer types (A through E) defined in EN 13739, the registering company chose the following types:

- A (granular material, bulk density $\rho_s > 0.9$ kg/l): Calcium ammonium nitrate Nutramon 27 % N + 4 % Mg from DSM Agro B.V. (NL)

- C (prilled material, $\rho_s > 0.9$ kg/l): NPK 21-3-10 from Hydro Agri, Porsgrunn Norway

and

- E (compact material): Potash 40 from Kali und Salz AG, Salzgitter

The working width chosen to be tested was 24 m.

The average application rate per hectare required by EN 13739 is 70 kg pure N and 170 kg K_2O . In the case of late top dressing, a low application rate (20 kg pure N per hectare) is required for the test. From these values, the application rates to be set for each fertilizer can be deduced. The machine is adjusted according to the instructions of the manufacturer's handbook (setting H), and distribution is mea-

sured. Up to two optimization steps (settings O_1 and O_2) according to the methods described in handbook are allowed.

The evaluation criterion is the coefficient of variation (CV) of transversal distribution, which should not exceed 15%. Other criteria were not tested.

Test Results and Individual Evaluations

The measurements were taken in October 2004. For the test, the machine was equipped with 28 to 36 m spreading discs.

The table shows the results of the individual measurements for CAN fertilizer, the multi-nutrient fertilizer NPK, and potash 40 which were achieved at the chosen working width of 24 m.

The two nitrogen fertilizers tested enabled good transversal distribution to be achieved if the spreader was set according to the handbook. Further optimization steps allowed the CV values to be improved.

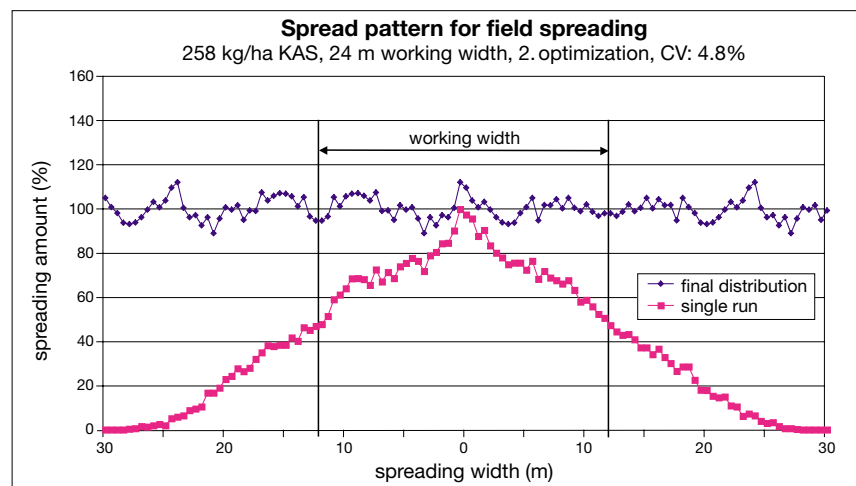


Figure 1:
spread pattern for CAN at a working width of 24 m

CAN reached a very good 4.8%. For potash, a good value (7.1%) was only able to be achieved after an optimization step with the aid of the test trays. Setting according to the handbook provided a CV of 10.5%. Figures 1 to 3 show the spread patterns of the three fertilizers at a working width of 24 m.

Based on the present results, the solid fertilizer broadcaster Sulky DPX expert fulfills the requirements (standard (o) or better) for the granting of the test sign DLG FokusTest with regard to the test criterion "distribution accuracy – transversal distribution" at a working width of 24 m. Other criteria were not tested.

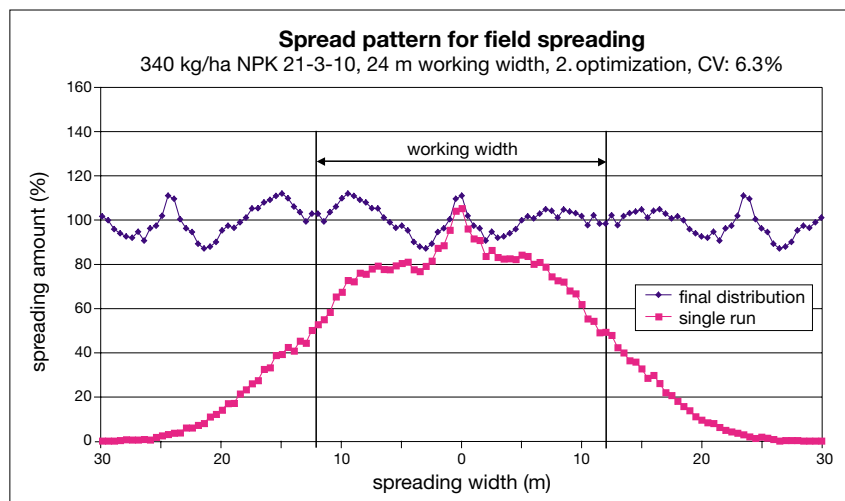


Figure 2: spread pattern for prilled multi-nutrient fertilizer (NPK) at a working width of 24 m

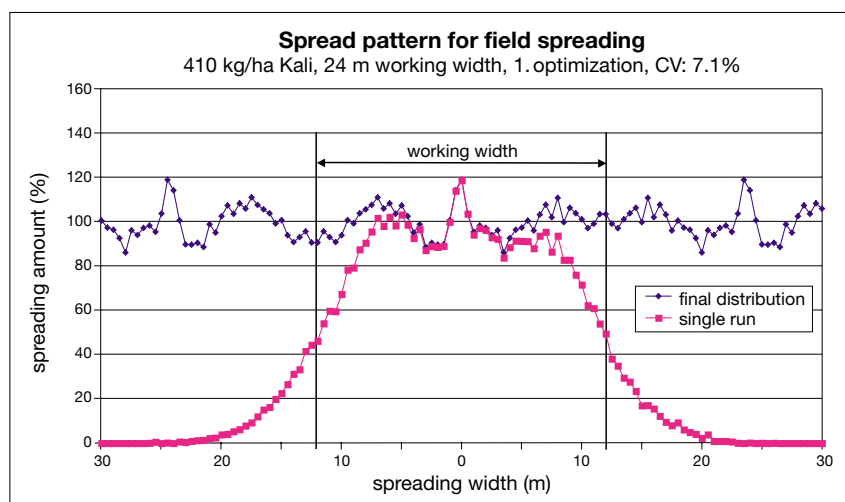


Figure 3: spread pattern for potash at a working width of 24 m

Table 1: Distribution accuracy at a working width of 24 m; normal field spreading

Working width: 24 m				Application rate (kg/ha)		Distribution accuracy	
Fertilizer	Type	Settings drop-point	feeding device	intended	obtained	CV (%)	Evaluation
Type A:							
Granulated material	H	123 / 123	28 / 28	259	260	6.7	+
CAN (DSM)	O ₁	125 / 125	28 / 28	259	258	5.2	+
ρ: 1.06 kg/l	O ₂	127 / 127	28 / 28	259	258	4.8	++
Type C:							
prilled material	H	127 / 127	33 / 33	333	335	9.5	+
NPK 21-3-10 (Hydro Agri)	O ₁	124 / 124	33 / 33	333	337	7.7	+
ρ: 1.01 kg/l	O ₂	121 / 121	33 / 33	333	340	6.3	+
Type E:							
Compact material	H	106 / 106	47 / 47	425	424	10.5	○
Potash 40 (Kali & Salz)	O ₁	104 / 104	47 / 47	425	410	7.1	+
ρ: 1.15 kg/l							

Type: H = setting according to the manual. O₁ = 1st optimization. O₂ = 2nd optimization

Realization of the test

DLG-Prüfstelle für Landmaschinen
Max-Eyth-Weg 1
D-64823 Groß-Umstadt

Authors of the report

Krister Persson
Dr. Alexander von Chappuis

Test stand

Danmarks Jordbrugs Forskning
Forskningscenter Bygholm
Postbox 536
DK-8700 Horsens



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Deutsche Landwirtschafts-
Gesellschaft e.V.
Prüfstelle für Landmaschinen
Max-Eyth-Weg 1, D-64823 Groß-Umstadt
Telefon: 0 60 78/96 35-0, Fax: 0 60 78/96 35-90
E-Mail: Tech@DLG-Frankfurt.de
Internet: www.dlg-test.de

Deutsche Landwirtschafts-
Gesellschaft e.V.
Prüfstelle für Landmaschinen
Lerchensteig 42, D-14469 Potsdam
Telefon: 03 31/5 67 02-0, Fax: 03 31/5 67 02-90
E-Mail: Tech@DLG-Frankfurt.de
Internet: www.dlg-test.de

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