NEW ZEALAND AGRICULTURAL ENGINEERING INSTITUTE

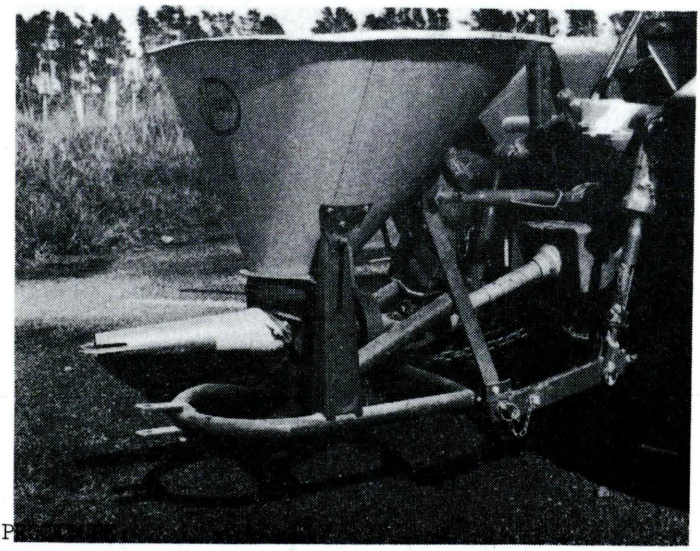
LINCOLN COLLEGE CANTERBURY NEW ZEALAND

Public TEST REPORT No T/46

THE VICON VARI SPREADER WITH STANDARD SPOUT SPREADING CROPMASTER HI YIELD (9N-12P-15K)

MANUFACTURER OF MACHINE: Vicon N.V. Nieuw Vennep, HOLLAND, and Dalhoff & King N.Z. Ltd, WELLINGTON, N.Z. for the New Zealand content.

SOURCE OF THE FERTILISER: Kempthorne Prosser & Co., CHRISTCHURCH



TEST P

A full description of the test procedure and equipment is contained in Project Report P/6 to be issued by the New Zealand Agricultural Engineering Institute. In the interim see NZAEI Project Report P/5.

BRIEF DESCRIPTION OF THE MACHINE:

The Vicon Vari Spreader is a tractor three point linkage mounted, P.T.O. driven, oscillating nozzle fertiliser distribution. The volume of the hopper of the machine tested was approximately 6.9 cubic feet.

For a full description of the machine together with operating instructions and settings, see Vicon Operating Instructions Handbook B75.

SIEVE ANALYSIS OF THE MATERIAL (CROPMASTER HI YIELD)

B.S. Sieve No.	% by weight
4	0.2
6	1.9
8	28.5
12	27.2
16	13.5
22	11.9
30	7.8
Pan	9.0

BUKL DENSITY OF THE MATERIAL (CROPMASTER HI YIELD)

The bulk density was 68 lb 7 oz per cubic foot

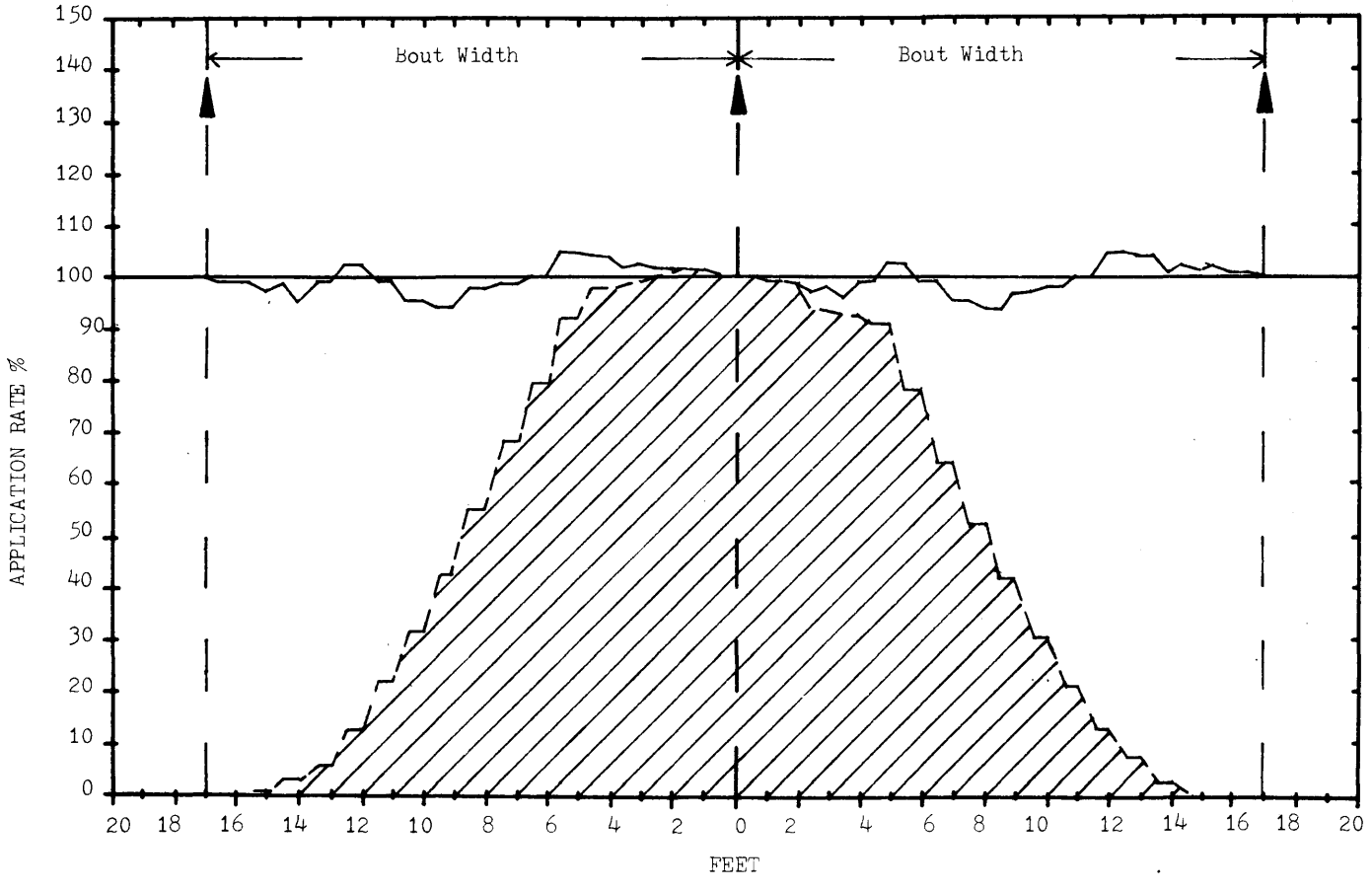
HOPPER OUTPUT OF MACHINE TESTED:

Hopper Outlet Setting	Bout Width in Feet	Application Rate in lbs				
8	17	186	140	112	93	80
9	17	250	187	150	125	107
10	17	320	240	192	160	137
11	17	394	295	236	197	169
12	17	497	373	298	249	213
Ground Speed in M.P.H.		3	4	5	6	7

TRANSVERSE DISTRIBUTION PATTERN

Name of Machine: Vicon Vari Spreader
P.T.O. Speed: 540 R.P.M.
Hopper Outlet Setting: 12
Bout Width: 17 feet

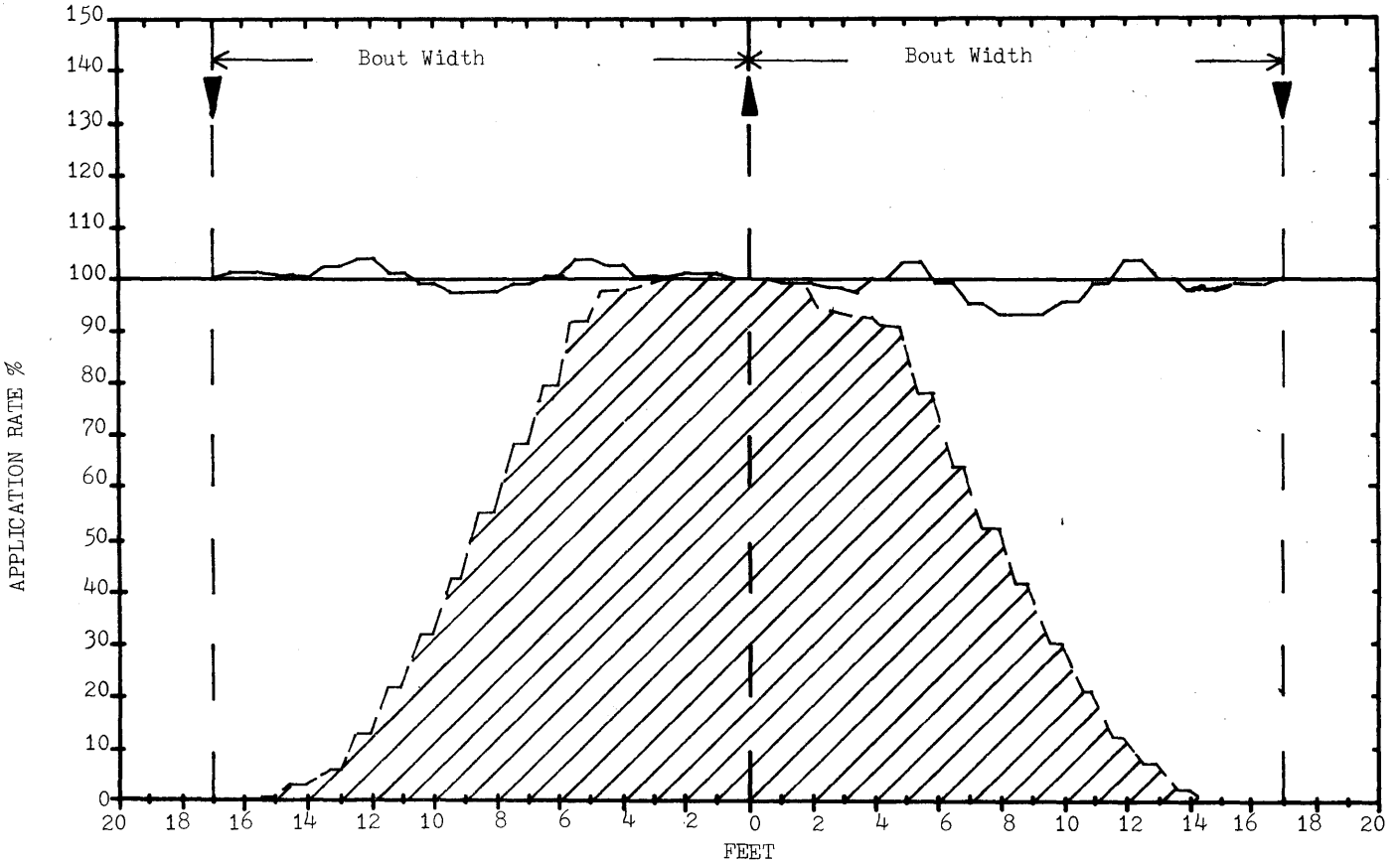
Material: Cropmaster Hi Yield
Spout Height: 22"
Mode of Travel: Round & Round



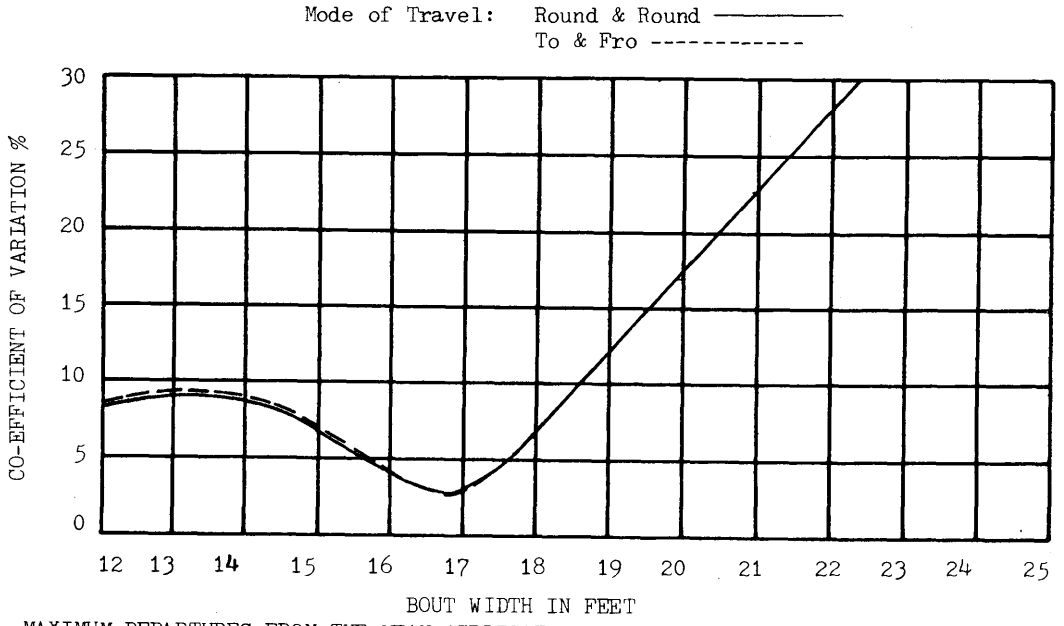
TRANSVERSE DISTRIBUTION PATTERN

Name of Machine: Vicon Vari Spreader
P.T.O. Speed: 540 R.P.M.
Hopper Outlet Setting: 12
Bout Width: 17 feet

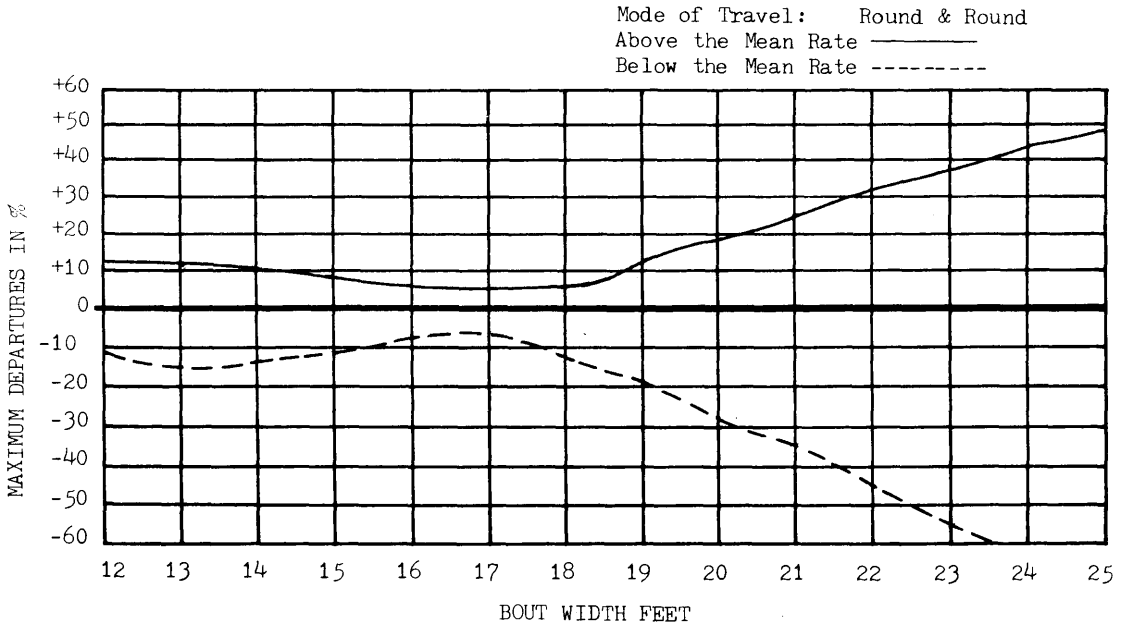
Material: Cropmaster Hi Yield
Spout Height: 22"
Mode of Travel: To & Fro



SENSITIVITY TO FLUCTUATIINS IN BOUT WIDTH:

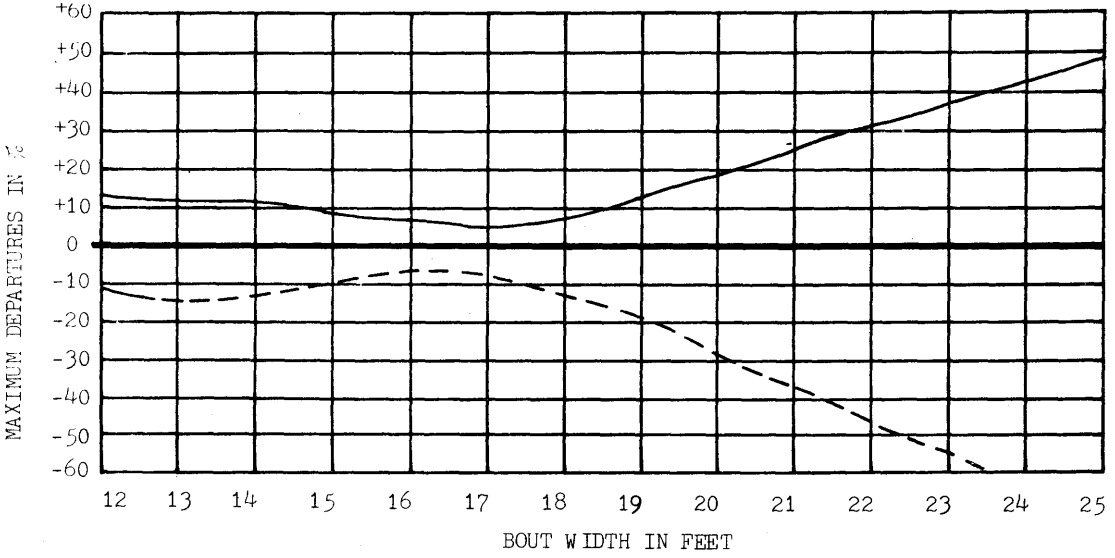


MAXIMUM DEPARTURES FROM THE MEAN APPLICATION RATE
OVER A SELECTED RANGE OF BOUT WIDTHS:



MAXIMUM DEPARTURES FROM THE MEAN APPLICATION RATE
OVER A SELECTED RANGE OF BOUT WIDTHS:

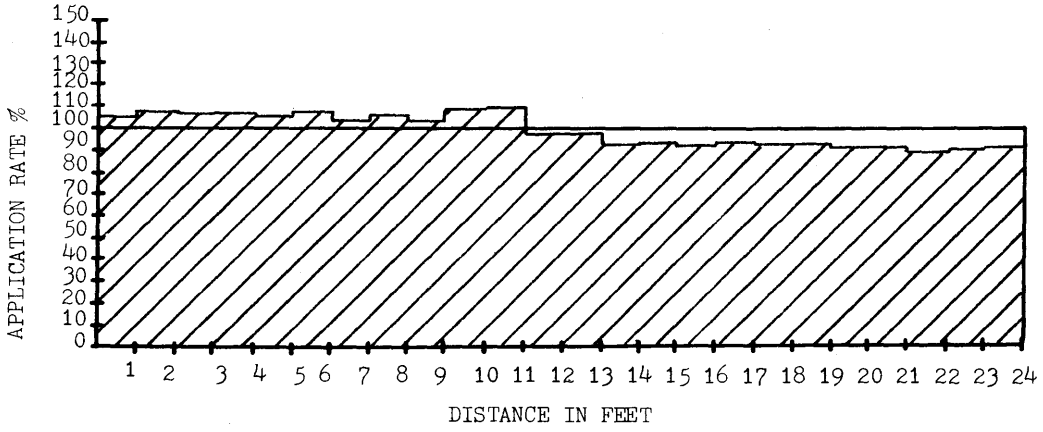
Mode of Travel: To & Fro
Above the Mean Rate ————
Below the Mean Rate --------



LONGITUDINAL DISTRIBUTION:

Name of Machine: Vicon Vari Spreader
P.T.O. Speed: 540 R.P.M.
Hopper Outlet Setting: 12

Material: Cropmaster Hi Yield
Spout Height: 22"
Actual Test Speed: 4 m.p.h.



COMMENTS ON PERFORMANCE:

The Co-Efficients of Variation at the illustrated bout widths of 17 feet for the Modes of Travel "Round & Round" and "To and Fro" were 2.9% and 2.8% respectively. (N.B. The lower the Co-efficient of Variation is the more even will be the distribution, perfect spreading being 0.0%. See N.Z.A.E.I. Project Report P/6).

The shape of the curves on the Sensitivity to Fluctuations in bout width graph for both Modes of Travel indicate a machine/material combination sensitive to driving errors. To maintain the spreading pattern displayed on the Transverse Distribution pattern graph maintenance of the correct bout width involving accurate driving will be required.

MANUFACTURERS COMMENTS:

The manufacturers of the machine considered that no comment was required on the machine/material combination.

Testing Officer [redacted]

Date 30.11.1970

DIRECTOR [redacted]