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TRIAL NUMBER		33		TRIDIPHANE		4.00 kg/ha	
SPECIES		0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
MAT PERF	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(33)	86	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
SEN VULG	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(34)	79	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
POL LAPA	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	94	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(35)	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
GAL APAR	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(38)	50	XXXXXXXXXXXX	36	XXXXXXX	29	XXXXXX	XXXXXXXXXXXXXXXXXXXXX
CHEN ALB	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(39)	71	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	43	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
STEL MED	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(40)	79	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
SPER ARV	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(41)	71	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
VER PERS	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(42)	71	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	14	XXX	XXXXXXXXXXXXXXXXXXXXX
VI ARVE	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(43)	79	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
RUM OBTU	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	81	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(44)	71	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	21	XXXX	XXXXXXXXXXXXXXXXXXXXX
EL REPEN	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(47)	86	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
CIRS ARV	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(50)	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
MAIZE+S	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX
(56)	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

TRIDIPHANE

SPECIES		0.25 kg/ha		1.00 kg/ha		4.00 kg/ha
MAIZE (57)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
SOL. NIG (81)	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	100 43	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXX	100 29	XXXXXXXXXXXXXXXXXXXXX XXXXXX

POST-EMERGENCE SELECTIVITY TEST

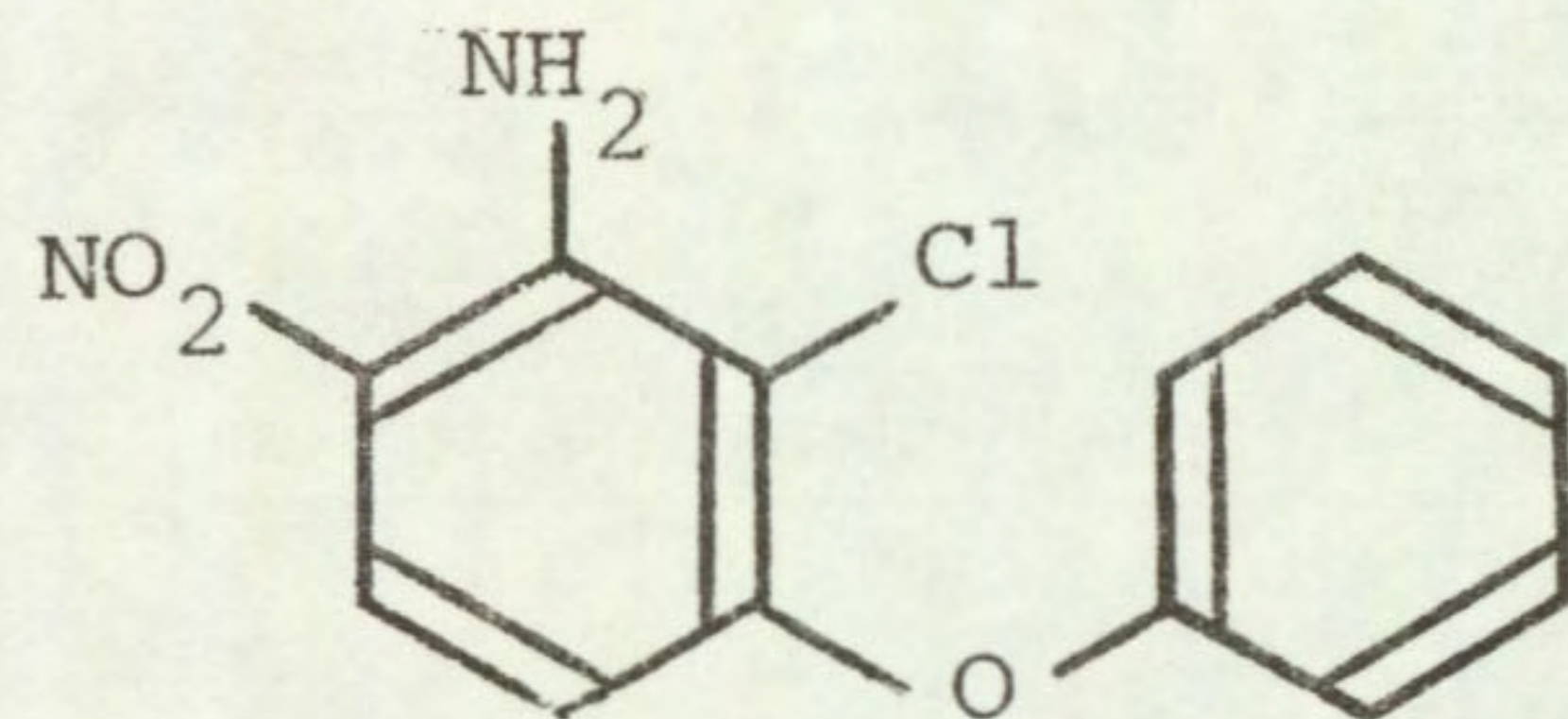
Aclonifen

Code number/s CME 127
CME 12750
KUB 3359

Trade name/s Bandur

Chemical name 2-chloro-6-nitro-3-phenoxyaniline

Other name/s Acloniten

Structure

Source Celamerck GmbH & Co KG
Ingelheim
Federal Republic of Germany

Information available and suggested uses

Pre-emergence residual control of blackgrass and broad-leaved weeds in winter wheat; grass and broad-leaved weeds in potatoes, peas, field beans and carrots. Doses 2.4 - 2.7 kg a.i./ha.

Formulation used Suspension concentrate 60% a.i.

Spray volume 370 l/ha

RESULTS

Full results are given in the histograms on pages 33-37 and potential selectivities are summarised in the following table.

RATE (kg a.i./ha)	CROPS: vigour reduced by 15% or less	WEEDS: number or vigour reduced by 70% or more
4.00	Wheat+safener (NA) Barley+safener (NA) Maize+safener (NA)	<u>Beta vulgaris</u> <u>Alopecurus myosuroides</u> <u>Poa annua</u> <u>Sinapis arvensis</u> <u>Polygonum lapathifolium</u> <u>Veronica persica</u> + species below
1.00	Species above + maize	<u>Poa trivialis</u> <u>Raphanus raphanistrum</u> <u>Chenopodium album</u> <u>Viola arvensis</u> + species below
0.25	Species above + oat perennial ryegrass carrot parsnip	<u>Galium aparine</u> <u>Stellaria media</u> <u>Rumex obtusifolius</u> <u>Solanum nigrum</u>

Comments on results

Activity experiment

The foliar spray was more active than the soil drench, post-emergence. However, greatest activity resulted from the pre-emergence surface treatment, the latter being much more active than with incorporation. Annual species were more susceptible than perennials, especially the smaller-seeded kale and ryegrass. This activity spectrum is thus very similar to other diphenyl-ether herbicides. Dwarf bean showed considerable tolerance to all of the soil treatments.

Symptoms on susceptible species

The most striking symptom, common to both pre- and post-emergence treatments was a pronounced chlorosis, or rather albinism, of leaves. Necrosis and death of plant tissue followed. Sprayed foliage of dwarf bean and kale was scorched rather rapidly, the chlorosis/albinism appearing more on the newer leaves, such as the newly developing trifoliates of dwarf beans. Thus symptoms are fairly typical of other diphenyl-ethers, though there was more evidence of chlorosis/albinism with acetonifene.

Post-emergence selectivity

Annual broad-leaved weeds were particularly susceptible. Of those controlled, Galium aparine at 0.25 kg/ha, Viola arvensis at 1.0 kg/ha and Veronica persica at 4.0 kg/ha are especially noteworthy. Composite weeds were not controlled however. Annual grass weed control was restricted to Poa trivialis at 1.0 kg/ha, Poa annua and more impressive, Alopecurus myosuroides at 4.0 kg/ha. Perennial weeds were resistant.

Tolerance was greatest with the cereals, wheat, barley and maize, all of which withstood the higher doses. Oat, perennial ryegrass, carrot and parsnip tolerated 0.25 kg/ha. White clover and lettuce are very sensitive.

Although aclonifen is considered to be primarily a pre-emergence herbicide, which the activity results confirm, selectivity post-emergence would also seem possible, giving it a greater flexibility of use. The potential control of Galium aparine, in cereals demands further study. The control of Stellaria media, must also be considered an advance for the diphenyl-ether group of herbicides. Lack of control of certain weeds, notably composites, will necessitate studies of mixtures and/or sequences with other herbicides. The weed control and crop tolerance spectra post-emergence, corresponds with that found earlier pre-emergence (Richardson and West, 1984, in press).

ACTIVITY EXPERIMENT

ACLONIFEN

		0.67 kg/ha	2.0 kg/ha	6.0 kg/ha
DWARF BEAN	F	XXXXXXXXXXXX XXXXXX	XXXXXXXXXXXX XXXXXX	XXXXXXXXXXXX XXXXXX
	S	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	I	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
KALE	F	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXX
	S	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P	XXXXXXXXXX XXXXXXXXXXXX	XX XXX	X XX
	I	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX
<u>POLYGONUM AMPHIBIUM</u>	F	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	I	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
PERENNIAL RYEGRASS	F	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX
	S	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX
	P	O O	X X	O O
	I	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX
<u>AVENA FATUA</u>	F	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX	XXX XX
	I	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
<u>ELYMUS REPENS</u>	F	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX
	I	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX

KEY: F = post-emergence, foliar application
 S = post-emergence, soil drench
 P = pre-emergence, surface film
 I = pre-planting, incorporated

TRIAL NUMBER 33

ACLONIFEN

SPECIES	0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
	100	100	100	100	100	100
WHEAT (1)	100	100	100	100	100	100
WHEAT+S (2)	100	100	100	100	100	100
BARLEY (3)	100	100	100	100	93	100
BARLEY+S (4)	100	100	100	100	86	100
OAT (5)	100	86	100	79	57	100
PER RYGR (6)	100	86	100	71	64	100
ONION (8)	100	71	100	71	64	100
DWF BEAN (9)	100	57	100	57	43	100
FLD BEAN (10)	100	71	100	71	71	100
W CLOVER (12)	100	50	31	29	0	0
RAPE (14)	100	57	100	43	36	100
KALE (15)	100	71	100	57	57	100
CABBAGE (16)	100	57	100	43	43	100

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

ACLONIFEN

SPECIES	0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
	100	86	100	71	100	71
CARROT (18)	100	86	100	71	100	71
PARSNIP (19)	100	86	100	71	100	71
LETTUCE (20)	100	64	0	0	0	0
SUG BEET (22)	100	57	100	43	20	29
BETA VUL (23)	100	64	90	43	10	14
BROM STE (24)	100	100	100	100	100	79
AVE FATU (26)	100	93	100	79	100	79
ALO MYOS (27)	100	86	100	57	30	14
POA ANN (28)	100	100	100	64	12	21
POA TRIV (29)	60	71	20	14	0	0
SIN ARV (30)	100	50	100	36	100	29
RAPH RAP (31)	100	57	100	29	40	14
CHRY SEG (32)	100	86	100	86	100	71

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

ACLONIFEN

SPECIES	0.25 kg/ha	1.00 kg/ha	4.00 kg/ha
MAT PERF (33)	100 86 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 50 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
SEN VULG (34)	100 57 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	100 50 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	100 43 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
POL LAPA (35)	100 71 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	87 57 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	0 0
GAL APAR (38)	43 14 XXXXXXX XXX	29 29 XXXXXX XXXXXX	0 0
CHEN ALB (39)	70 57 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	30 29 XXXXXX XXXXXX	50 21 XXXXXXXXXXXXX XXXXX
STEL MED (40)	19 21 XXXX XXXX	0 0	0 0
SPER ARV (41)	100 71 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	80 43 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
VER PERS (42)	100 79 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	90 50 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	60 21 XXXXXXXXXXXXX XXXXX
VI ARVE (43)	70 64 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	20 43 XXXX XXXXXXXXXXXXX	0 0
RUM OBTU (44)	0 0	0 0	0 0
EL REPEN (47)	100 100 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
CIRS ARV (50)	100 57 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	100 50 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	100 50 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
MAIZE+S (56)	100 93 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86 XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

ACLONIFEN

SPECIES	0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
MAIZE (57)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
SOL NIG (81)	37 21	XXXXXXX XXXX	25 21	XXXXX XXXX	12 7	XX X

POST-EMERGENCE SELECTIVITY TEST

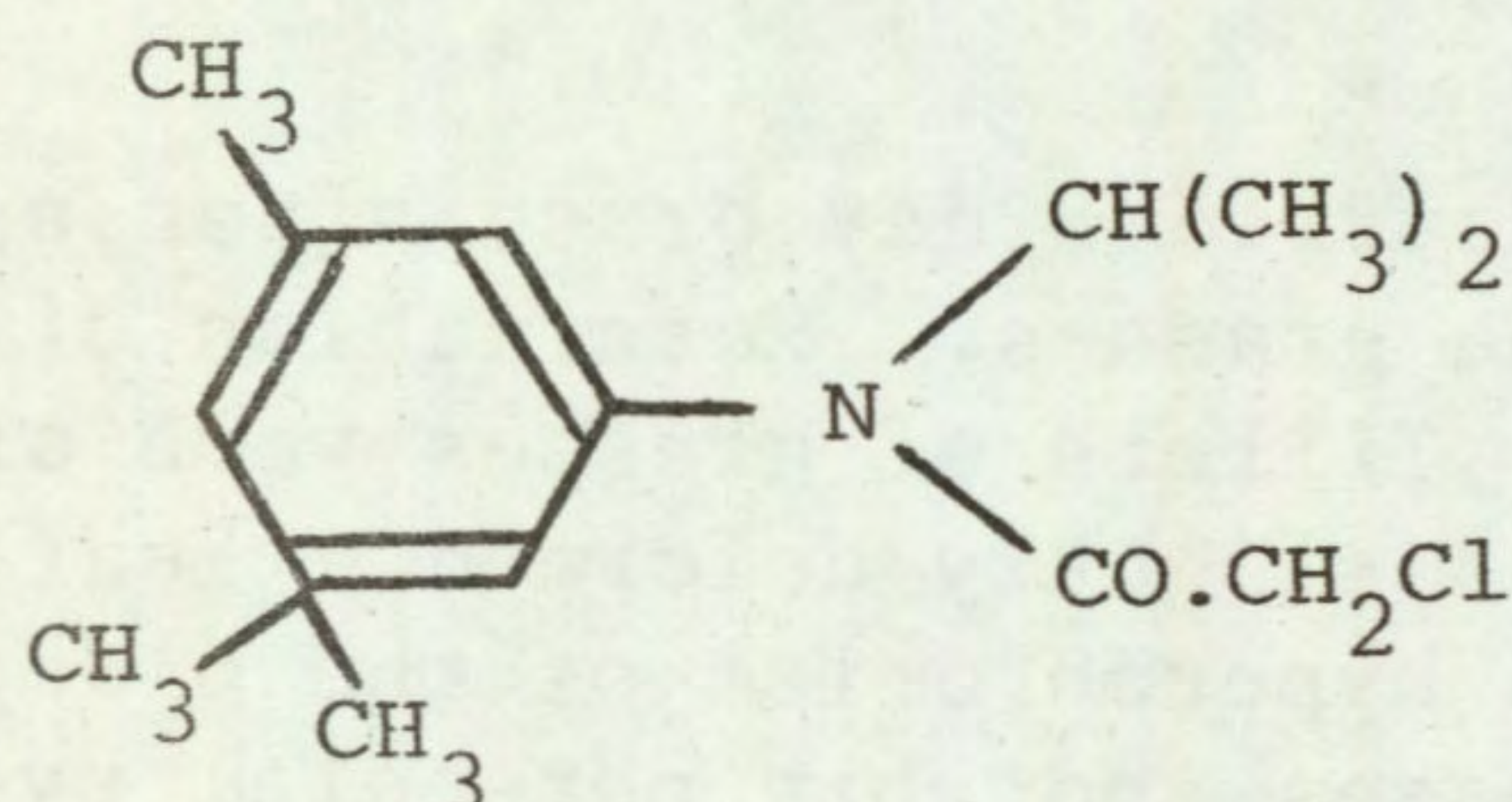
RST 20024H

Code number RST 20024 Trade name/s
RST 20061 (+ atrazine) Atravit rustica (+ atrazine)

Common name Trimexachlor (proposed)

Chemical name α -chloroacetic-N-(3,5,5-trimethyl-cyclo-hexen-1-yl)
-N-isopropylamide

Structure



Source Ruhr-Stickstoff AG
Landwirtschaftliche Forschung
Hanninghof 35
D4408 Dülmen
Federal Republic of Germany

Information available and suggested uses

Broad-spectrum weed control in maize, winter rape, soyabeans etc. pre- and post-emergence.

Formulation used Technical material (95.6% a.i.) in 10% methanol + 0.1% v/v Agral 90.

Spray volume 370 l/ha.

RESULTS

Full results are given in the histograms on pages 40-44 and potential selectivities are summarised in the following table.

RATE (kg a.i./ha)	CROPS: vigour reduced by 15% or less	WEEDS: number or vigour reduced by 70% or more
4.00	wheat+safener (NA) barley+safener (NA) maize+safener (NA) sugar beet	<u>Poa trivialis</u>
0.25 and 1.00	None listed as no weeds controlled	None

Comments on results

Activity experiment

Most activity resulted from pre-emergence treatments to grasses, perennial ryegrass being particularly sensitive. The surface pre-emergence spray was generally more effective than when incorporated, this difference being greatest in the case of perennial ryegrass. Soil drenches, post-emergence were also quite effective on grasses but not on broad-leaved species. However, with the foliar spray, broad-leaved species tended to be slightly more affected than grasses.

Symptoms on susceptible species

A mild scorch of leaves occurred a day or so after spraying, particularly on broad-leaved species and some grasses. Retardation of growth resulted and hyperchromism of older leaves. Tillers of grasses were often stunted. Newly developing leaves were sometimes slightly deformed. Leaf trapping was seen on soil treatments to grasses with hyperchromism of the older leaves. Pre-emergence treatments to grasses, notably perennial ryegrass, caused die-back soon after emergence. These symptoms were reminiscent of amide and carbamate type herbicides.

Post-emergence selectivity

Only one grass weed, (Poa trivialis), was controlled at the highest dose. Tolerant crops were sugar beet, maize, wheat and barley, there being a mild safening effect of NA with the two latter species.

Results of both these experiments suggest that RST 20024H is primarily a pre- rather than a post-emergence herbicide. Although the effects from soil drenches, post-emergence to grasses and foliar sprays to broad-leaved species were considerable in the earlier activity experiment, the later post-emergence experiment suggests that combined soil and foliar effects were still not great enough for an effective post-emergence treatment. However, the results in the activity test justify future tests, pre-emergence.

ACTIVITY EXPERIMENT

RST 20024H

	0.25 kg ai/ha	1.0 kg ai/ha	4.0 kg ai/ha
DWARF BEAN	F XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	I XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
KALE	F XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P XXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	I XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX
<u>POLYGONUM</u>	F XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	P XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXX
	I XXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXX
PERENNIAL RYEGRASS	F XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S XXXXXXXXXXXXXXXX XXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXX	XXXXXXXXXXXXXXXXXX XXXXX
	P X XXXXX	O O	O O
	I XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXX	O O
<u>AVENA FATUA</u>	F XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXX
	P XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXX	XX XX
	I XXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXX
<u>ELYMUS REPENS</u>	F XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX
	S XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXXXXX
	P XXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXX	XXXXXX XXXXXX
	I XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXX XXXXXXX

KEY: F = post-emergence, foliar application
 S = post-emergence, soil drench
 P = pre-emergence, surface film
 I = pre-planting, incorporated

TRIAL NUMBER 33

RST20024 H

SPECIES	0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
WHEAT (1)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
WHEAT+S (2)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
BARLEY (3)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
BARLEY+S (4)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
OAT (5)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
PER RYGR (6)	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 64	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 43	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
ONION (8)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
DWF BEAN (9)	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
FLD BEAN (10)	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
W CLOVER (12)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 64	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
RAPE (14)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
KALE (15)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX
CABBAGE (16)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 64	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX	100 43	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

RST20024H

SPECIES	0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
CARROT (18)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
PARSNIP (19)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 64	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
LETTUCE (20)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
SUG BEET (22)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
BETA VUL (23)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
BROM STE (24)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
AVE FATU (26)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
ALO MYOS (27)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 43	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
POA ANN (28)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
POA TRIV (29)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 43	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	80 29	XXXXXXXXXXXXXXXXXXXXX XXXXXX
SIN ARV (30)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
RAPH RAP (31)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
CHRY SEG (32)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

RST20024H

SPECIES	0.25 kg/ha		1.00 kg/ha		4.00 kg/ha	
MAT PERF (33)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
SEN VULG (34)	100 64	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 57	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 50	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
POL LAPA (35)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
GAL APAR (38)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
CHEN ALB (39)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
STEL MED (40)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
SPER ARV (41)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
VER PERS (42)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 50	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
VI ARVE (43)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
RUM OBTU (44)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
EL REPEN (47)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
CIRS ARV (50)	100 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
MAIZE+S (56)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX

POST-EMERGENCE SELECTIVITY TEST

TRIAL NUMBER 33

RST20024 H

SPECIES		0.25 kg/ha		1.00 kg/ha		4.00 kg/ha
MAIZE (57)	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
SOL NIG (81)	100 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	87 50	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXX

POST-EMERGENCE SELECTIVITY TEST

ACKNOWLEDGEMENTS

We are most grateful to the joint Letcombe/WRO Statistics Section for processing the experimental data; Messrs P D Smith, R M. Porteous and S L Burbank for technical and practical assistance; to Mrs J Wallsworth for the preparation and typing of this report; to Mrs S Cox and her staff for its duplication and to the commercial firms who provided the chemicals and relevant data.

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Appendix I. Species, abbreviations, varieties and stages of growth at spraying and assessment for post-emergence selectivity test

Species	Designation and computer serial number	Cultivar or source	Stage of growth at spraying	Stages of growth at assessment (untreated controls, leaf numbers exclusive of cotyledons)
Wheat (<u>Triticum aestivum</u>)	WHEAT (1)	Timmo	3.5 leaves, 0-1 tiller	5-6 leaves, 0-1 tiller
Wheat+safener	WHEAT+S (2)	Timmo	3.5 leaves, 0-1 tiller	5-6 leaves, 0-1 tiller
Barley (<u>Hordeum vulgare</u>)	BARLEY (3)	Triumph	4 leaves, 0-1 tiller	7-8 leaves, 1 tiller
Barley+safener	BARLEY+S (4)	Triumph	4 leaves, 0-1 tiller	7-8 leaves, 1 tiller
Oat (<u>Avena sativa</u>)	OAT (5)	Pennal	3.5 leaves, 0-1 tiller	12 leaves, 2 tillers
Perennial ryegrass (<u>Lolium perenne</u>)	PER RYGR (6)	S 23	5-7 leaves, 1-2 tillers	12 leaves, 3 tillers
Onion (<u>Allium cepa</u>)	ONION (8)	Rijnsburg Robusta	2 leaves	2.5-4.5 leaves
Dwarf bean (<u>Phaseolus vulgaris</u>)	DWF BEAN (9)	Masterpiece	2 uni- foliate leaves	2 trifoliate leaves
Field bean (<u>Vicia faba</u>)	FLD BEAN (10)	Maris Bead	2.5-3 leaves	12 leaves
Pea (<u>Pisum sativum</u>)	PEA (11)	Dark skinned perfection	3-4 leaves	7 leaves
White clover (<u>Trifolium repens</u>)	W CLOVER (12)	S 100	2 tri- foliate leaves	5-6 trifoliate leaves
Rape (<u>Brassica napus oleifera</u>)	RAPE (14)	Jet Neuf	2 leaves	5 leaves
Kale (<u>Brassica oleracea acephala</u>)	KALE (15)	Marrowstem	2-2.5 leaves	3.5 leaves
Cabbage (<u>Brassica oleracea capitata</u>)	CABBAGE (16)	Derby Day	2-2.5 leaves	4.5 leaves

Species	Designation and computer serial number	Cultivar or source	Stage of growth at spraying	Stages of growth at assessment (untreated controls, leaf numbers exclusive of cotyledons)
Carrot (<u>Daucus carota</u>)	CARROT (18)	Chantenay Red Core	2 leaves	4-5 leaves
Parsnip (<u>Pastinaca sativa</u>)	PARSNIP (19)	Evesham	1.5-2 leaves	2-3 leaves
Lettuce (<u>Lactuca sativa</u>)	LETTUCE (20)	Reskia	1.5-3.5 leaves	10 leaves
Sugar beet (<u>Beta vulgaris</u>)	SUG BEET (22)	Nomo	2 leaves	4-5 leaves
<u>Beta vulgaris</u>	BETA VUL (23)	WRO 1981 ex Attleborough	2 leaves	4-5 leaves
<u>Bromus sterilis</u>	BROM STE (24)	WRO 1982	1-3 tillers	3-4 tillers
<u>Avena fatua</u>	AVE FATU (26)	WRO 1980	4-5 leaves, 1-2 tillers	7 leaves, 1-2 tillers
<u>Alopecurus myosuroides</u>	ALO MYOS (27)	WRO 1983	1 tiller	3-4 tillers
<u>Poa annua</u>	POA ANN (28)	WRO 1982	2-3 tillers	5 tillers
<u>Poa trivialis</u>	POA TRIV (29)	B & S Supplies, 1981	1-2 tillers	5-6 tillers
<u>Sinapis arvensis</u>	SIN ARV (30)	WRO 1983	4-5 leaves	6-7 leaves, flowering
<u>Raphanus raphanistrum</u>	RAPH RAP (31)	Long Black Spanish	2-2.5 leaves	4-5 leaves
<u>Chrysanthemum segetum</u>	CHRY SEG (32)	WRO 1983	4 leaves	8-10 leaves
<u>Matricaria perforata</u>	MAT PERF (33)	WRO 1983	2-4 leaves	5-6 leaves
<u>Senecio vulgaris</u>	SEN VULG (34)	WRO 1981	5 leaves	7 leaves, flowering

Species	Designation and computer serial number	Cultivar or source	Stage of growth at spraying	Stages of growth at assessment (untreated controls, leaf numbers exclusive of cotyledons)
<u>Polygonum lapathifolium</u>	POL LAPA (35)	WRO 1982	1-1.5 leaves	7-8 leaves
<u>Galium aparine</u>	GAL APAR (38)	WRO 1981	2 whorls	Numerous whorls
<u>Chenopodium album</u>	CHEN ALB (39)	B&S Supplies 1982	4-6 leaves	8 leaves, flowering
<u>Stellaria media</u>	STEL MED (40)	B&S Supplies 1982	6 leaves	Up to 20 leaves
<u>Spergula arvensis</u>	SPER ARV (41)	WRO, 1981	1.5 whorls	-
<u>Veronica persica</u>	VER PERS (42)	WRO, 1981	4-6 leaves	Numerous leaves, flowering
<u>Viola arvensis</u>	VI ARVE (43)	B&S Supplies 1982	2-4 leaves	6-10 leaves, some flowering
<u>Rumex obtusifolius</u>	RUM OBTU (44)	WRO, 1981	1.5-2 leaves	3-4 leaves
<u>Elymus repens</u>	EL REPEN (47)	WRO Clone 31*	3 leaves	6-10 leaves, 0-1 tiller
<u>Cirsium arvense</u>	CIRS ARV (50)	WRO Clone 1**	4-6 leaves	10 leaves
Maize+safener (<u>Zea mays</u>)	MAIZE+S (56)	LG 11	3-3.5 leaves	6-8 leaves
Maize (<u>Zea mays</u>)	MAIZE (57)	LG 11	3.5-4 leaves	6-8 leaves
<u>Solanum nigrum</u>	SOL NIG (81)	WRO, 1980	2-5 leaves	Up to 8 leaves

* one node rhizome pieces

** root fragments

ABBREVIATIONS

ångström	Å	freezing point	f.p.
Abstract	Abs.	from summary	F.s.
acid equivalent*	a.e.	gallon	gal
acre	ac	gallons per hour	gal/h
active ingredient*	a.i.	gallons per acre	gal/ac
approximately equal to*	≈	gas liquid chromatography	GLC
aqueous concentrate	a.c.	gramme	g
bibliography	bibl.	hectare	ha
boiling point	b.p.	hectokilogram	hkg
bushel	bu	high volume	HV
centigrade	C	horse power	hp
centimetre*	cm	hour	h
concentrated	concd	hundredweight*	cwt
concentration	concn	hydrogen ion concentration*	pH
concentration x time product	ct	inch	in.
concentration required to kill 50% test animals	LC50	infra red	i.r.
cubic centimetre*	cm ³	kilogramme	kg
cubic foot*	ft ³	kilo (x10 ³)	k
cubic inch*	in ³	less than	<
cubic metre*	m ³	litre	l.
cubic yard*	yd ³	low volume	LV
cultivar(s)	cv.	maximum	max.
curie*	Ci	median lethal dose	LD50
degree Celsius*	°C	medium volume	MV
degree centigrade	°C	melting point	m.p.
degree Fahrenheit*	°F	metre	m
diameter	diam.	micro (x10 ⁻⁶)	μ
diameter at breast height	d.b.h.	microgramme*	μg
divided by*	÷ or /	micromicro (pico: x10 ⁻¹²)*	μμ
dry matter	d.m.	micrometre (micron)*	μm (or μ)
emulsifiable concentrate	e.c.	micron (micrometre)* †	μm (or μ)
equal to*	=	miles per hour*	mile/h
fluid	fl.	milli (x10 ⁻³)	m
foot	ft	milliequivalent*	m.equiv.
		milligramme	mg
		millilitre	ml

† The name micrometre is preferred to micron and μm is preferred to μ.

millimetre*	mm	pre-emergence	pre-em.
millimicro*		quart	quart
(nano: $\times 10^{-9}$)	n or μ	relative humidity	r.h.
minimum	min.	revolution per minute*	rev/min
minus	-	second	s
minute	min	soluble concentrate	s.c.
molar concentration*	M (small cap)	soluble powder	s.p.
molecule, molecular	mol.	solution	soln
more than	>	species (singular)	sp.
multiplied by*	x	species (plural)	spp.
normal concentration*	N (small cap)	specific gravity	sp. gr.
not dated	n.d.	square foot*	ft ²
oil miscible	o.m.c.	square inch	in ²
concentrate	(tables only)	square metre*	m ²
organic matter	o.m.	square root of*	$\sqrt{\quad}$
ounce	oz	sub-species*	ssp.
ounces per gallon	oz/gal	summary	s.
page	p.	temperature	temp.
pages	pp.	ton	ton
parts per million	ppm	tonne	t
parts per million		ultra-low volume	ULV
by volume	ppmv	ultra violet	u.v.
parts per million		vapour density	v.d.
by weight	ppmw	vapour pressure	v.p.
percent(age)	%	<u>varietas</u>	var.
pico		volt	v
(micromicro: $\times 10^{-12}$)	p or μ	volume	vol.
pint	pint	volume per volume	v/v
pints per acre	pints/ac	water soluble powder	w.s.p. (tables only)
plus or minus*	+ -	watt	w
post-emergence	post-em	weight	wt
pound	lb	weight per volume*	w/v
pound per acre*	lb/ac	weight per weight*	w/w
pounds per minute	lb/min	wettable powder	w.p.
pound per square inch*	lb/in ²	yard	yd
powder for dry	p.	yards per minute	yd/min
application	(tables only)		
power take off	p.t.o.		
precipitate (noun)	ppt.		

* Those marked * should normally be used in the text as well as in tables etc.



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