



INSTITUTE OF ARABLE CROPS RESEARCH

Long Ashton Research Station

WEED RESEARCH DEPARTMENT



TECHNICAL REPORT No.101

THE PRE-EMERGENCE SELECTIVITY IN WARM-CLIMATE SPECIES OF SOME RECENTLY DEVELOPED HERBICIDES: CGA 131036, DPX L5300, DPX A7881, BAS 514.

NB: BAS 514 is quinclorac, CGA 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

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NOTE

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THE PRE-EMERGENCE SELECTIVITY IN WARM-CLIMATE SPECIES OF SOME RECENTLY DEVELOPED HERBICIDES: CGA 131036, DPX-L5300, DPX-A7881 AND BAS 514 00H

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SUMMARY

Four herbicides were evaluated as surface pre-emergence treatments in a glasshouse pot experiment on 36 warm climate crop and weed species. Maize and sorghum were each included in two sets with and without seed dressings of the safeners, 1,8 naphthalic anhydride (NA) on maize and CGA 92194 on sorghum. Four previously untested new species were included in the experiment, two broad-leaved weeds Ageratum conyzoides and Bidens pilosa, the annual grass weed Ischaemum rugosum, and onion.

Applied pre-emergence, CGA 131036 gave a similar spectrum of weed control as a post-emergence application, but crop tolerance was much lower. Only maize + safener was tolerant at the top and middle doses of 0.08 and 0.02 kg ai/ha with the other cereals being more sensitive and only tolerant of the lowest dose of 0.005 kg ai/ha. This gave a very limited spectrum of weed control to include the broad-leaved weeds Amaranthus hybridus and Ageratum conyzoides. DPX-L 5300 was less active than CGA 131036 in controlling the annual broad-leaved weeds Amaranthus hybridus, Ageratum conyzoides and Bidens pilosa and the annual grass weed Oryza barthii at the top dose of 0.08 kg ai/ha. There was a significant safening effect of sorghum with CGA 92194 at this dose. Several other cereals and large seeded legumes were tolerant at the lowest dose of 0.005 kg ai/ha but only Amaranthus hybridus was controlled.

DPX-A7881 was the most active sulfonyl urea in this experiment giving good control of annual grass weeds, including Rottboellia cochinchinensis in pigeon pea at the top dose of 0.16 kg ai/ha. No other crops were tolerant of the middle dose of 0.04 but a good range of annual grasses plus Commelina difusa and Ageratum conyzoides were controlled. Maize + safener, soyabean and lentils were tolerant of the lowest dose of 0.01 kg ai/ha which controlled Bromus pectinatus.

BAS 514 00H gave selective control of Echinochloa crus-galli and Ageratum conyzoides in several cereal crops including rice at the lowest dose of 0.1 kg ai/ha. There was a significant safening effect of sorghum and maize at the middle dose of 0.4 kg ai/ha which broadened the spectrum of weeds controlled to include two important annual grasses, Digitaria sanguinalis and Snowdenia polystachya, together with Bidens pilosa.

INTRODUCTION

This report describes the evaluation of new herbicides on warm climate species by the Tropical Weeds Unit of LARS. Work on the temperate species is reported separately. Relevant reports are West (in press). These reports provide information on the relative importance of foliar and soil activity and also on persistence in the soil of these compounds.

The objectives of the work reported here are exactly as indicated in previous reports in this series, i.e. to provide a guide to the potential usefulness of new compounds in the crops tested. Owing to the relatively artificial conditions of glasshouse pot experiments it must be emphasised that the results are to be regarded only as a guide, and that further field testing is essential to confirm any of the interesting leads revealed.

This report gives pre-emergence selectivity data for four new herbicides.

METHODS AND MATERIALS

Techniques used were as described by Richardson and Dean (1973), all herbicides being applied as surface pre-emergence treatments. Species were sown as detailed in Appendix 1, each being replicated twice for each treatment. Soil and environmental details are given in Table 1.

Cyperus esculentus tubers were stored at 5°C for 3 weeks before planting to improve germination.

To protect against soil-borne pathogens, most seeds were pre-treated with thiram. Some had been pre-dressed with unknown compounds. Those not treated were rice, Commelina diffusa, onion and aubergine.

Maize and sorghum were each set up with and without a seed treatment of 'safener'. For maize, the seeds were shaken with a quantity of technical 1,8-naphthalic anhydride (NA) equivalent to 0.5% of seed weight. For sorghum, the seeds were shaken with a quantity of 70% CGA 92194 (N-1(1,3-dioxolan-2-yl-methoxy)-imino-benzene acetonitrile) equivalent to 0.2% ai of seed weight.

Herbicides were applied using a laboratory sprayer embodying an 80015 E Spraying Systems Tee Jet nozzle operating at a pressure of 207 kpa (30 lb/in²) and moving at 0.54 m/sec 30 cm above the soil. Subsequent watering was from overhead.

Table 1. Soil and environmental conditions

Date of spraying:	3.12.86
Main assessment completed:	22-26.1.87
<hr/>	
Soil:	Mendip silt loam + 15% v/v medium sand
pH	6.0
<u>Particle analysis</u>	
	%
Coarse sand	2.1
Medium sand	41.4
Fine sand	13.8
Silt	26.6
Clay content	16.1
Organic matter	4.6
<u>Fertiliser added</u>	
Vitax Q4	3.3 g/l
<u>contains</u>	
	%
N	5.3
P	7.5
K	10.0
Mg	3.0
Fritted Trace elements	0.2
<hr/>	
<u>Temperature (°C)</u>	
mean	24
maximum	32
minimum	14
<u>Relative humidity (%)</u>	
mean	70
maximum	89
minimum	26

Assessment and processing of results

Results were processed as described by Richardson and Dean (1973). Surviving plants were counted and scored for vigour on a 0-7 scale where 0 = dead and 7 = no different from the untreated control.

Pairs of histograms are presented for each treatment, the upper representing the plant survival and the lower vigour score, both calculated as percentages of untreated controls. Each 'x' represents a 5% increment. A '+' indicates a value in excess of 100%.

A table of observed selectivities, using the criteria specified is presented for each herbicide along with comments to highlight salient points.

The perennial Cyperus spp. were kept for an extra period to observe later effects and/or the recovery from injury.

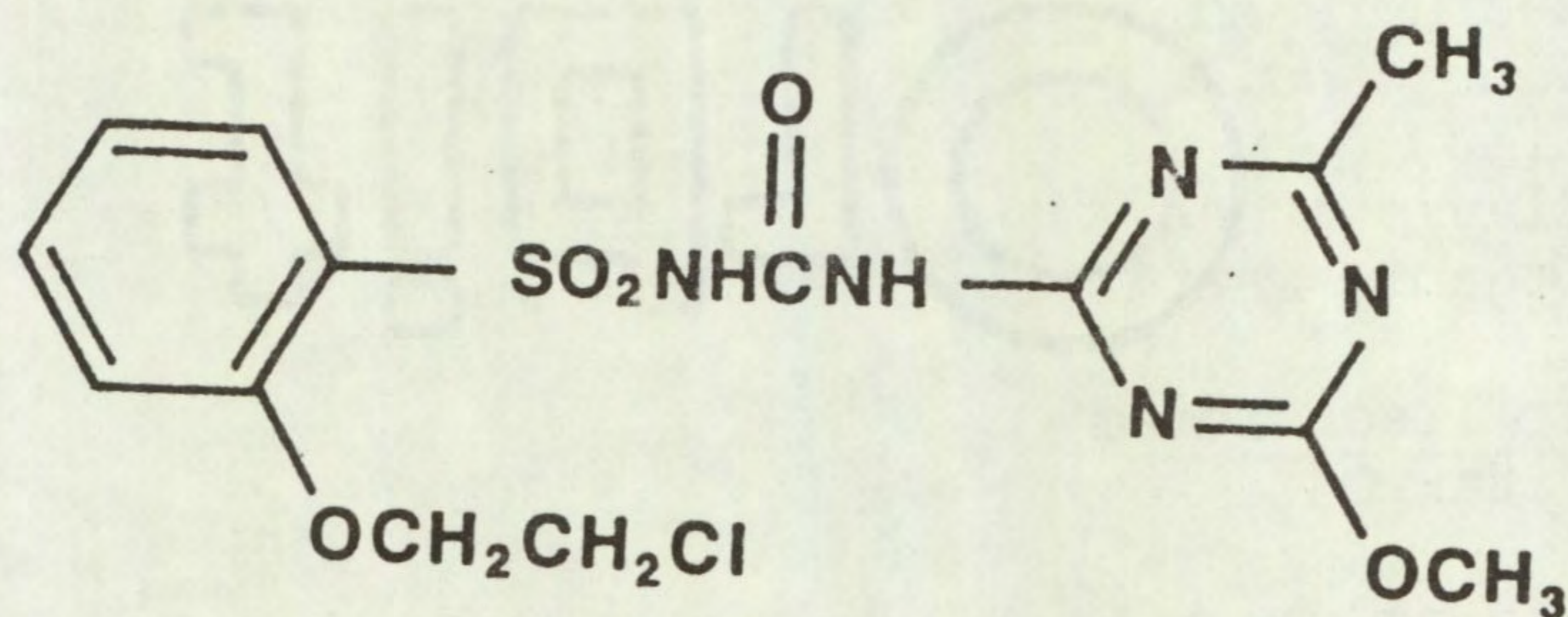
Code Name CGA 131036

Trade name Amber/Logran

Common name triasulfuron (approved BSI, proposed ISO)

Chemical name 1-[2-(2-chloroethoxy)phenylsulfonyl]-3-(4-methoxy-6-methyl-1,3,5-triazin-2-yl) urea

Structure



Source

Ciba-Geigy Ltd.,
Agrochemical Division,
Whittlesford,
Cambridge CB2 4QT.
UK.

Information available and suggested uses

Broad-leaved weed control post-emergence in wheat and barley at 5 - 20 g ai/ha.

Formulation used Water dispersable granules 20% ai

Spray volume 407 l/ha

RESULTS

Full results are given in the histograms on pages 6-8 and potential selectivities are summarised in the following table.

CGA 131036 pre-emergence

Dose kg ai/ha	Crops: vigour reduced by less than 15%	Weeds: number or vigour reduced by 70% or more
0.08	maize + S	<u>Phalaris minor</u> + weeds below
0.02	crops above	<u>Commelina diffusa</u> <u>Oryza barthii</u> <u>Bidens pilosa</u> <u>Ischaemum rugosum</u> + weeds below
0.005	crops above + maize sorghum + S rice teff	<u>Amaranthus hybridus</u> <u>Ageratum conyzoides</u>

COMMENTS ON RESULTS

CGA 131036 was more active as a pre-emergence treatment than when applied as a post-emergence spray, and the cereals rice, teff and millet were less tolerant of this method of application. There was, however, a very significant safening of maize with NA at the top two doses of 0.02 and 0.08 kg ai/ha to give a useful spectrum of weed control. This included the annual grasses Phalaris minor, Oryza barthii and Ischaemum rugosum, but not Rottboellia cochinchinensis or Snowdenia polystachya both problem weeds in maize crops.

At the lowest dose of 0.005 kg ai/ha, only Amaranthus hybridus and Ageratum conyzoides were controlled, although several of the cereal crops including maize without safener, sorghum + safener, rice and teff were tolerant of this dose.

As expected with a sulfonyl urea compound, the broad-leaved crops such as tomato, jute and sesamum were very sensitive to CGA 131036 but some of the larger-seeded legumes, such as pigeon pea, which had shown some tolerance to post-emergence sprays, were also very sensitive to pre-emergence applications of this compound.

The enhanced tolerance of maize and sorghum by safeners may warrant further work with safeners on some of the other cereals crops such as rice, teff and millet in an effort to obtain better weed control through the use of higher doses. In line with the manufacturer's observations the small grain cereals and some of the larger grain cereals are the most tolerant crops.

The selective control of Phalaris minor in maize + safener is interesting and, if this is similar for wheat and barley, could prove a useful treatment for the highland tropics where this grass is becoming a problem weed in cereals

TRIAL NUMBER 3

CGA 131036

SPECIES	0.005 kg/ha		0.020 kg/ha		0.080 kg/ha	
ONION (8)	14 29	xxx xxxxxx	0 0	0 0	0 0	0 0
MILLET (57)	104 64	xxxxxxxxxxxxxxxxxxxxx+ xxxxxxxxxxxx	122 43	xxxxxxxxxxxxxxxxxxxxx+ xxxxxxxxxx	61 14	xxxxxxxxxxxx xxx
MAIZE+S (58)	100 100	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxx	100 100	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxx	100 86	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxx
MAIZE (59)	104 86	xxxxxxxxxxxxxxxxxxxxx+ xxxxxxxxxxxx	96 57	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxx	104 29	xxxxxxxxxxxxxxxxxxxxx+ xxxxxx
SORG+S (60)	73 100	xxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxx	100 79	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxx	67 57	xxxxxxxxxxxx xxxxxxxxxxxx
SORGHUM (61)	100 57	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxx	100 29	xxxxxxxxxxxxxxxxxxxxx xxxxxx	71 21	xxxxxxxxxxxx xxxx
TOMATO (62)	119 57	xxxxxxxxxxxxxxxxxxxxx+ xxxxxxxxxxxx	96 36	xxxxxxxxxxxxxxxxxxxxx xxxxxxxx	104 21	xxxxxxxxxxxxxxxxxxxxx+ xxxx
PIGEON P (63)	129 57	xxxxxxxxxxxxxxxxxxxxx+ xxxxxxxxxxxx	12 7	xx x	0 0	0 0
COWPEA (64)	73 64	xxxxxxxxxxxx xxxxxxxxxxxx	109 29	xxxxxxxxxxxxxxxxxxxxx+ xxxxxx	100 7	xxxxxxxxxxxxxxxxxxxxx x
CHICKPEA (65)	126 7	xxxxxxxxxxxxxxxxxxxxx+ x	126 14	xxxxxxxxxxxxxxxxxxxxx+ xxx	116 14	xxxxxxxxxxxxxxxxxxxxx+ xxx
GRNDNUT (66)	100 50	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxx	87 36	xxxxxxxxxxxxxxxxxxxxx xxxxxxxx	100 14	xxxxxxxxxxxxxxxxxxxxx xxx
SOYABEAN (67)	100 57	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxx	109 43	xxxxxxxxxxxxxxxxxxxxx+ xxxxxxxx	109 29	xxxxxxxxxxxxxxxxxxxxx+ xxxxxx
COTTON (68)	82 71	xxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxx	91 43	xxxxxxxxxxxxxxxxxxxxx xxxxxxxx	100 36	xxxxxxxxxxxxxxxxxxxxx xxxxxx

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6
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TRIAL NUMBER 3

CGA 131036

SPECIES		0.005 kg/ha		0.020 kg/ha		0.080 kg/ha
JUTE	33	xxxxxxx	0		0	
(69)	14	xxx	0		0	
KENAF	89	xxxxxxxxxxxxxxxxxxxx	94	xxxxxxxxxxxxxxxxxxxx	83	xxxxxxxxxxxxxxxxxxxx
(70)	64	xxxxxxxxxxxxxxxx	36	xxxxxxx	14	xxx
SESAMUM	10	xx	0		0	
(72)	14	xxx	0		0	
RICE	88	xxxxxxxxxxxxxxxxxxxx	88	xxxxxxxxxxxxxxxxxxxx	71	xxxxxxxxxxxxxxxx
(74)	86	xxxxxxxxxxxxxxxxxxxx	79	xxxxxxxxxxxxxxxxxxxx	50	xxxxxxxxxxxx
ELEU IND	87	xxxxxxxxxxxxxxxxxxxx	87	xxxxxxxxxxxxxxxxxxxx	108	xxxxxxxxxxxxxxxxxxxx+
(76)	100	xxxxxxxxxxxxxxxxxxxx	86	xxxxxxxxxxxxxxxxxxxx	57	xxxxxxxxxxxx
ECH CRUS	69	xxxxxxxxxxxxxxxx	91	xxxxxxxxxxxxxxxx	69	xxxxxxxxxxxxxxxx
(77)	86	xxxxxxxxxxxxxxxx	71	xxxxxxxxxxxxxxxx	36	xxxxxxx
ROT COCH	122	xxxxxxxxxxxxxxxxxxxx+	144	xxxxxxxxxxxxxxxxxxxx+	100	xxxxxxxxxxxxxxxxxxxx
(78)	71	xxxxxxxxxxxxxxxx	50	xxxxxxx	36	xxxxxxx
DIG SANG	110	xxxxxxxxxxxxxxxxxxxx+	65	xxxxxxxxxxxxxxxx	57	xxxxxxxxxxxx
(79)	93	xxxxxxxxxxxxxxxx	50	xxxxxxx	36	xxxxxxx
AMAR HYB	60	xxxxxxxxxxxx	0		0	
(80)	14	xxx	0		0	
BROM PEC	100	xxxxxxxxxxxxxxxxxxxx	95	xxxxxxxxxxxxxxxxxxxx	105	xxxxxxxxxxxxxxxxxxxx+
(84)	71	xxxxxxxxxxxxxxxx	50	xxxxxxx	43	xxxxxxx
SNO POL	101	xxxxxxxxxxxxxxxxxxxx	86	xxxxxxxxxxxxxxxx	86	xxxxxxxxxxxxxxxx
(85)	100	xxxxxxxxxxxxxxxxxxxx	71	xxxxxxxxxxxxxxxx	36	xxxxxxx
PHAL MIN	90	xxxxxxxxxxxxxxxx	83	xxxxxxxxxxxxxxxx	63	xxxxxxxxxxxx
(86)	79	xxxxxxxxxxxxxxxx	36	xxxxxxx	29	xxxxxxx
CYP ROTU	113	xxxxxxxxxxxxxxxxxxxx+	93	xxxxxxxxxxxxxxxxxxxx	80	xxxxxxxxxxxxxxxx
(88)	100	xxxxxxxxxxxxxxxxxxxx	93	xxxxxxxxxxxxxxxxxxxx	71	xxxxxxxxxxxx

TRIAL NUMBER 3

CGA 131036

SPECIES		0.005 kg/ha		0.020 kg/ha		0.080 kg/ha
AUBGIN	104	XXXXXXXXXXXXXXXXXXXXX+	74	XXXXXXXXXXXXXXXXXXXX	0	
(91)	29	XXXXXX	21	XXXX	0	
LENTIL	103	XXXXXXXXXXXXXXXXXXXXX+	103	XXXXXXXXXXXXXXXXXXXXX+	97	XXXXXXXXXXXXXXXXXXXXX
(92)	43	XXXXXX	29	XXXXXX	21	XXXX
MUNGB	95	XXXXXXXXXXXXXXXXXXXX	38	XXXXXX	48	XXXXXXXXXX
(93)	79	XXXXXXXXXXXXXXXXXXXX	36	XXXXXX	14	XXX
TEFF	110	XXXXXXXXXXXXXXXXXXXXX+	90	XXXXXXXXXXXXXXXXXXXX	94	XXXXXXXXXXXXXXXXXXXXX
(94)	100	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX
COMMEL	100	XXXXXXXXXXXXXXXXXXXX	30	XXXXXX	20	XXXX
(95)	79	XXXXXXXXXXXXXXXXXXXX	21	XXXX	29	XXXXXX
ORY BATH	69	XXXXXXXXXXXXXXXXXXXX	6	x	0	
(97)	71	XXXXXXXXXXXXXXXXXXXX	14	XXX	0	
AGE CON	0		0		0	
(102)	0		0		0	
BID PIL	106	XXXXXXXXXXXXXXXXXXXXX+	62	XXXXXXXXXXXXXXXXXXXX	0	
(103)	50	XXXXXXXXXXXX	21	XXXX	0	
ISCH RU	93	XXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXX	31	XXXXXX
(104)	43	XXXXXXXXXXXX	29	XXXXXX	14	XXX

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NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

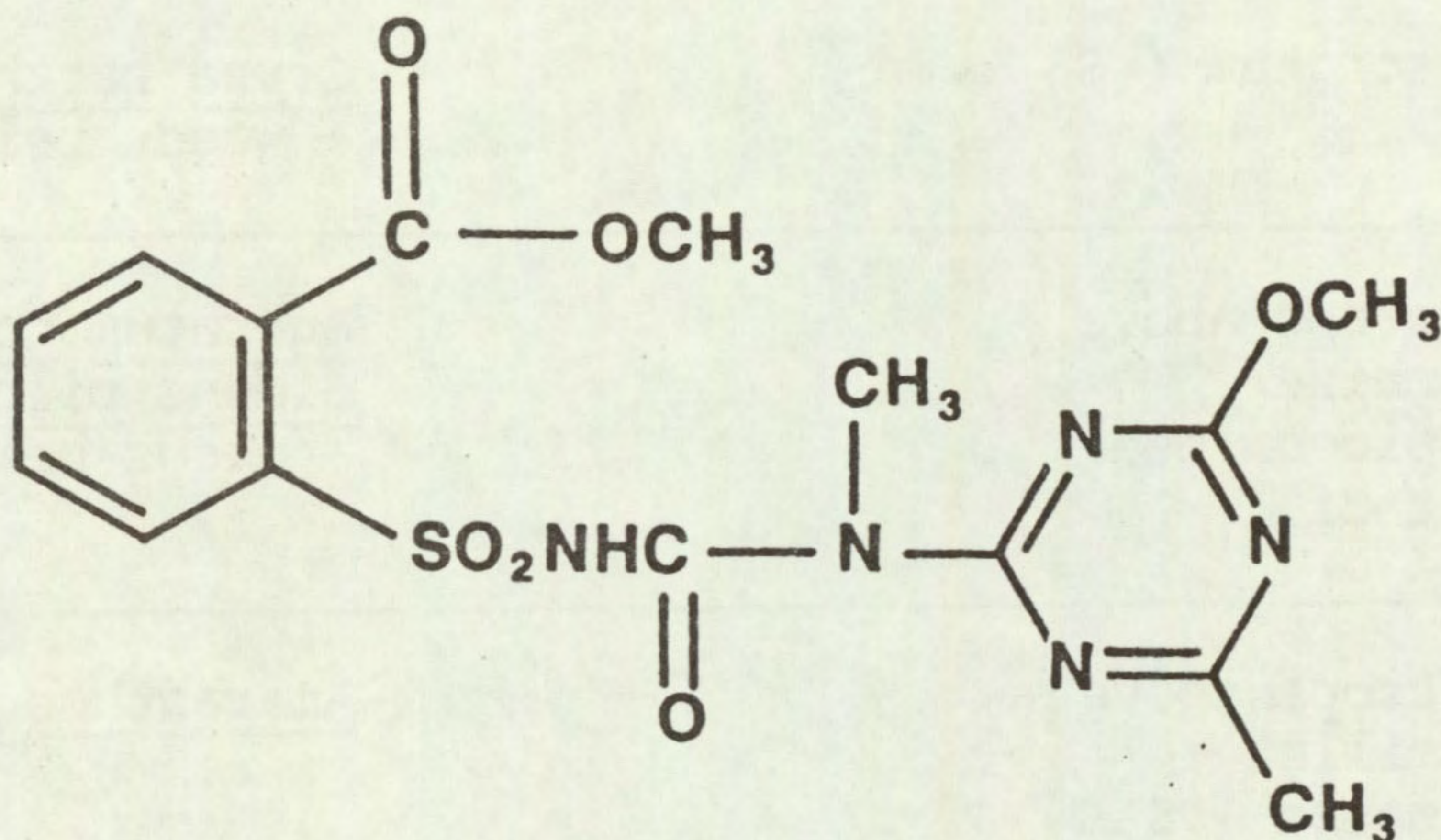
- 9 -

Code Name DPX-L5300 Trade name Granstar/Express

Common name none at time of publication

Chemical name methyl 2-[[4-methoxy-6-methyl-1,3,5-triazin-2-yl(methyl) carbamoyl] sulfamoyl] benzoate

Structure



Source DuPont de Nemours (UK) Ltd.,
Wedgwood Way,
Stevenage,
Herts, SG1 4QN
U.K.

Information available and suggested uses

Control of broad-leaved weeds in cereal crops including the perennial Cirsium arvense applied post-emergence at rates of 10 - 20 g ai/ha.

Formulation used Dry flowable 75% ai

Spray volume 407 l/ha

RESULTS

Full results are given in the histograms on pages 11-13 and potential selectivities are summarised in the following table.

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

DPX-L5300 pre-emergence

Dose kg ai/ha	Crops: vigour reduced by less than 15%	Weeds: number or vigour reduced by 70% or more
0.08	sorghum + S	<u>Oryza barthii</u> + weeds below
0.02	crops above + maize pigeon pea teff	<u>Ageratum conyzoides</u> <u>Bidens pilosa</u> + weeds below
0.005	crops above + millet maize + S sorghum tomato groundnut soyabean kenaf rice aubergine	<u>Amaranthus hybridus</u>

COMMENTS ON RESULTS

At the lowest dose of 0.005 kg ai/ha, Amaranthus hybridus was the only weed controlled although a large number of crops were tolerant of this dose, including the large-seeded legumes groundnut and soyabean and the broad-leaved crops tomato, kenaf and aubergine. Ageratum conyzoides and Bidens pilosa were susceptible to the middle dose of 0.02 kg/ai ha which was tolerated by maize, teff and pigeon pea. There was no safening effect on maize but sorghum was safened to tolerate the top dose of 0.08 kg ai/ha, although Oryza barthii was the only new weed controlled by this dose.

More crops tolerated DPX-L5300 as a pre-emergence treatment than as a post-emergence application but, although it controlled several of the annual broad-leaved weeds such as Bidens pilosa and Ageratum conyzoides, it did not control Commelina diffusa, which is an important and difficult weed to control in many parts of the world.

In general, the limited selectivity of weeds controlled by DPX-L5300 does not warrant further testing on warm climate species in the field.

DPX L5300

SPECIES		0.005 kg/ha		0.020 kg/ha		0.080 kg/ha
ONION	77	XXXXXXXXXXXXXXXXXX	27	XXXXXX	0	
(8)	71	XXXXXXXXXXXXXXXXXX	36	XXXXXXXX	0	
MILLET	96	XXXXXXXXXXXXXXXXXXXX	52	XXXXXXXXXX	78	XXXXXXXXXXXXXXXXXXXX
(57)	100	XXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXX	14	XXX
MAIZE+S	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
(58)	86	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX
MAIZE	104	XXXXXXXXXXXXXXXXXXXX+	104	XXXXXXXXXXXXXXXXXXXX+	104	XXXXXXXXXXXXXXXXXXXX+
(59)	93	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX
SORG+S	93	XXXXXXXXXXXXXXXXXXXX	87	XXXXXXXXXXXXXXXXXXXX	87	XXXXXXXXXXXXXXXXXXXX
(60)	100	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX
SORGHUM	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
(61)	86	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXX
TOMATO	89	XXXXXXXXXXXXXXXXXXXX	104	XXXXXXXXXXXXXXXXXXXX+	74	XXXXXXXXXXXXXXXXXXXX
(62)	86	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX
PIGEON P	141	XXXXXXXXXXXXXXXXXXXX+	94	XXXXXXXXXXXXXXXXXXXX	94	XXXXXXXXXXXXXXXXXXXX
(63)	100	XXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX
COWPEA	91	XXXXXXXXXXXXXXXXXXXX	109	XXXXXXXXXXXXXXXXXXXX+	109	XXXXXXXXXXXXXXXXXXXX+
(64)	79	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX
CHICKPEA	105	XXXXXXXXXXXXXXXXXXXX+	116	XXXXXXXXXXXXXXXXXXXX+	105	XXXXXXXXXXXXXXXXXXXX+
(65)	57	XXXXXXXXXXXX	57	XXXXXXXXXXXX	43	XXXXXXXXXXXX
GRNDNUT	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
(66)	86	XXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	14	XXX
SOYABEAN	100	XXXXXXXXXXXXXXXXXXXX	109	XXXXXXXXXXXXXXXXXXXX+	109	XXXXXXXXXXXXXXXXXXXX+
(67)	93	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXXXXXXXXXX
COTTON	91	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
(68)	79	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXX

TRIAL NUMBER 3

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
 DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

DPX L5300

SPECIES		0.005 kg/ha	0.020 kg/ha	0.080 kg/ha
JUTE	61	XXXXXXXXXXXXXX	0	0
(69)	29	XXXXXX	0	0
KENAF	100	XXXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXXX
(70)	86	XXXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXXX
SESAMUM	45	XXXXXXXXXX	10	xx
(72)	50	XXXXXXXXXX	21	XXXX
RICE	76	XXXXXXXXXXXXXXXXXXXX	94	XXXXXXXXXXXXXXXXXXXX
(74)	86	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX
ELEU IND	104	XXXXXXXXXXXXXXXXXXXXX+	96	XXXXXXXXXXXXXXXXXXXXX
(76)	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX
ECH CRUS	109	XXXXXXXXXXXXXXXXXXXXX+	103	XXXXXXXXXXXXXXXXXXXXX+
(77)	100	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX
ROT COCH	111	XXXXXXXXXXXXXXXXXXXXX+	144	XXXXXXXXXXXXXXXXXXXXX+
(78)	93	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX
DIG SANG	78	XXXXXXXXXXXXXXXXXXXX	78	XXXXXXXXXXXXXXXXXXXX
(79)	93	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX
AMAR HYB	120	XXXXXXXXXXXXXXXXXXXXX+	93	XXXXXXXXXXXXXXXXXXXXX
(80)	21	XXXX	21	XXXX
BROM PEC	95	XXXXXXXXXXXXXXXXXXXX	74	XXXXXXXXXXXXXXXXXXXX
(84)	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
SNO POL	101	XXXXXXXXXXXXXXXXXXXX	89	XXXXXXXXXXXXXXXXXXXX
(85)	93	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX
PHAL MIN	100	XXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXX
(86)	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
CYP ROTU	100	XXXXXXXXXXXXXXXXXXXX	107	XXXXXXXXXXXXXXXXXXXX+
(88)	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX

TRIAL NUMBER 3

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

DPX L5300

SPECIES	0.005 kg/ha		0.020 kg/ha		0.080 kg/ha	
AUBGIN (91)	89 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	89 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	96 43	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX
LENTIL (92)	110 71	XXXXXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXXXXX	110 64	XXXXXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXXXXX	103 29	XXXXXXXXXXXXXXXXXXXXX+ XXXXXXX
MUNGB (93)	105 64	XXXXXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXXXXXXXXXX	95 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	114 57	XXXXXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXX
TEFF (94)	78 93	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	90 100	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	51 71	XXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
COMMEL (95)	100 71	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	90 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	100 86	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX
ORY BATH (97)	44 71	XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	25 57	XXXXXX XXXXXXXXXXXXX	0 0	
AGE CON (102)	67 50	XXXXXXXXXXXXX XXXXXXXXXXXXX	33 29	XXXXXXX XXXXXXX	0 0	
BID PIL (103)	62 86	XXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	50 14	XXXXXXXXXXXXX XXX	0 0	
ISCH RU (104)	93 79	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	107 57	XXXXXXXXXXXXXXXXXXXXX+ XXXXXXXXXXXXX	34 36	XXXXXXX XXXXXXX

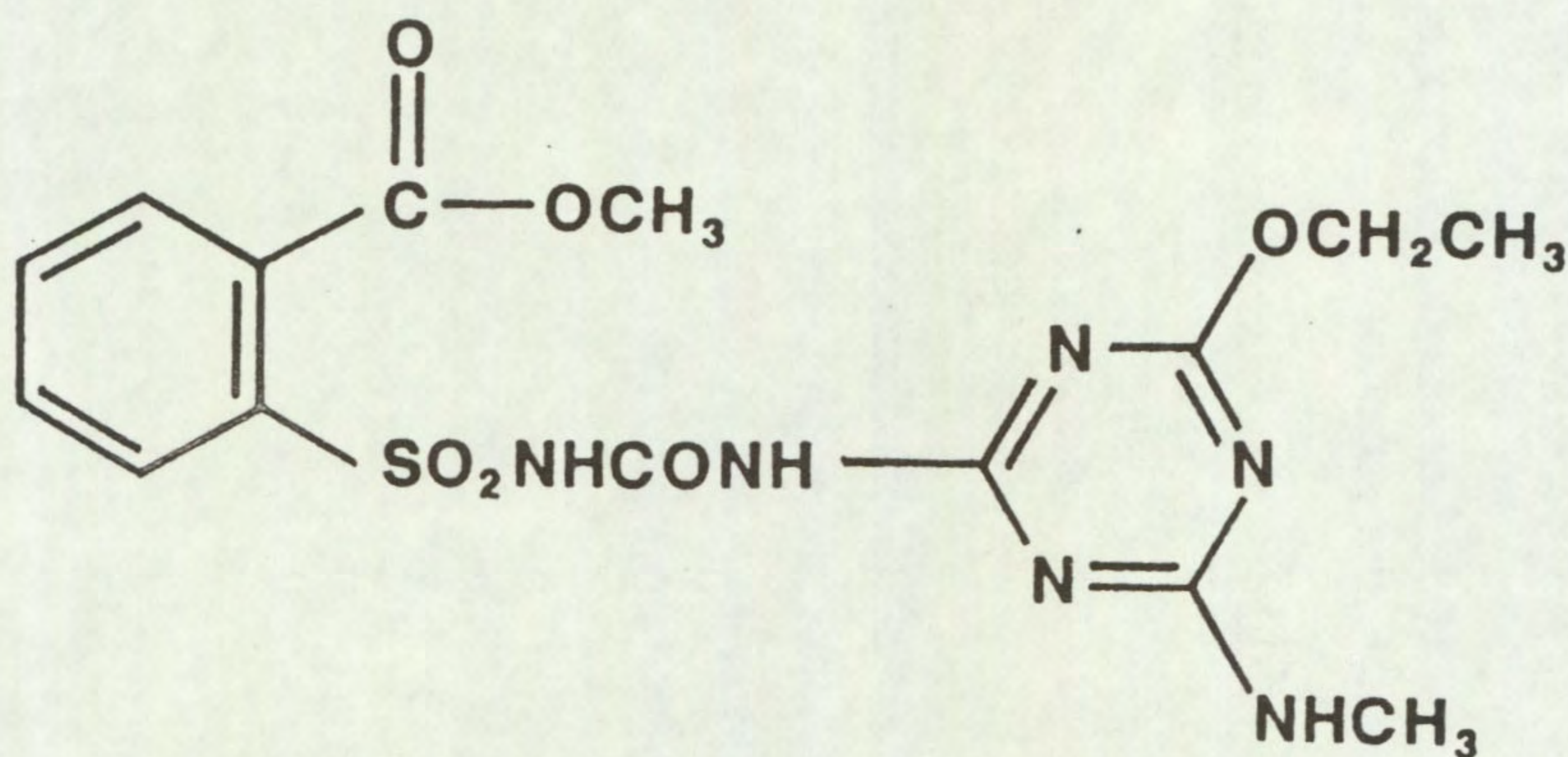
NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

Code Name DPX-A7881 Trade name none at time
of publication

Common name none at time of publication

Chemical name methyl 2-[3-(4-ethoxy-6-methylamino-1,3,5-
triazin-2-yl) carbamoylsulfamoyl]benzoate

Structure



Source DuPont de Nemours (UK) Ltd.
Wedgwood Way
Stevenage
Herts SG1 4QN
UK

Information available and suggested uses

For post-emergence use in oil seed rape at 15-30 g ai/ha to control broad-leaved weeds including Sinapis arvensis, Thlaspi arvense, Stellaria media and others.

Formulation used 75% w/w water dispersable granules

Spray volume 407 l/ha

RESULTS

Full results are given in the histograms on pages 16-18 and potential selectivities are summarised in the following table.

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
 DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

DPX-A7881 pre-emergence

Dose kg ai/ha	Crops: vigour reduced by less than 15%	Weeds: number or vigour reduced by 70% or more
0.16	pigeon pea	<u>Echinochloa crus-galli</u> <u>Rottboellia cochinchinensis</u> + weeds below
0.04	crop above	<u>Digitaria sanguinalis</u> <u>Snowdenia polystachya</u> <u>Phalaris minor</u> <u>Commelina diffusa</u> <u>Ageratum conyzoides</u> <u>Ischaemum rugosum</u> + weeds below
0.01	crop above + maize + S soyabean lentil	<u>Amaranthus hybridus</u> <u>Oryza barthii</u> <u>Bromus pectinatus</u>

COMMENTS ON RESULTS

DPX-A7881 showed good activity on a range of annual grass and broad-leaved weeds. At the top dose of 0.16 kg ai/ha it gave selective control in pigeon pea of most of the annual grass weeds including Rottboellia cochinchinensis, Snowdenia polystachya, Ischaemum rugosum, Bromus pectinatus and Phalaris minor, together with the annual broad-leaved weeds Ageratum conyzoides, Amaranthus hybridus and Commelina diffusa. No further crops were tolerant of the middle dose of 0.04 kg ai/ha although there was a good spectrum of weed control at this dose.

Maize + safener, soyabean and lentil tolerated the lowest dose of 0.01 kg ai/ha but the weed spectrum controlled at this dose was smaller although it included the annual grass weed Bromus pectinatus. Varying the depth of sowing may give greater crop safety and improve the tolerance of a wider range of crops to the middle dose of 0.04 kg ai/ha, which controls a very useful spectrum of annual grass and broad-leaved weeds.

The manufacturer's suggested use for this herbicide is as a post-emergence treatment which gives better crop tolerance compared to pre-emergence application, while still controlling a wide spectrum of weeds.

TRIAL NUMBER 3

DPX A7881

SPECIES	0.010 kg/ha		0.040 kg/ha		0.160 kg/ha	
ONION (8)	0		0		0	
MILLET (57)	78	XXXXXXXXXXXXXXXXXXXX	0		0	
	14	xxx	0		0	
MAIZE+S (58)	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
	93	XXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXXXXXXXXXX
MAIZE (59)	96	XXXXXXXXXXXXXXXXXXXX	96	XXXXXXXXXXXXXXXXXXXX	104	XXXXXXXXXXXXXXXXXXXX+
	79	XXXXXXXXXXXXXXXXXXXX	36	xxxxxxx	7	x
SORG+S (60)	100	XXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXX	0	
	79	XXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	0	
SORGHUM (61)	86	XXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	0	
	29	xxxxxxx	14	xxx	0	
TOMATO (62)	104	XXXXXXXXXXXXXXXXXXXX+	104	XXXXXXXXXXXXXXXXXXXX+	59	XXXXXXXXXXXX
	71	XXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX	14	xxx
PIGEON P (63)	129	XXXXXXXXXXXXXXXXXXXX+	118	XXXXXXXXXXXXXXXXXXXX+	118	XXXXXXXXXXXXXXXXXXXX+
	86	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX
COWPEA (64)	100	XXXXXXXXXXXXXXXXXXXX	109	XXXXXXXXXXXXXXXXXXXX+	100	XXXXXXXXXXXXXXXXXXXX
	71	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX
CHICKPEA (65)	116	XXXXXXXXXXXXXXXXXXXX+	126	XXXXXXXXXXXXXXXXXXXX+	126	XXXXXXXXXXXXXXXXXXXX+
	57	XXXXXXXXXXXX	36	XXXXXXXXXXXX	21	xxxx
GRNDNUT (66)	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX
	79	XXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	21	xxxx
SOYABEAN (67)	100	XXXXXXXXXXXXXXXXXXXX	109	XXXXXXXXXXXXXXXXXXXX+	109	XXXXXXXXXXXXXXXXXXXX+
	93	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX
COTTON (68)	91	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	91	XXXXXXXXXXXXXXXXXXXX
	79	XXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	29	xxxxxx

TRIAL NUMBER 3

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
 DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

DPX A7881

SPECIES		0.010 kg/ha		0.040 kg/ha		0.160 kg/ha
JUTE	86	XXXXXXXXXXXXXXXXXXXX	0		0	
(69)	36	XXXXXXX	0		0	
KENAF	83	XXXXXXXXXXXXXXXXXXXX	83	XXXXXXXXXXXXXXXXXXXX	72	XXXXXXXXXXXXXXXXXXXX
(70)	79	XXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX
SESAMUM	45	XXXXXXXXXX	0		0	
(72)	29	XXXXXXX	0		0	
RICE	94	XXXXXXXXXXXXXXXXXXXX	59	XXXXXXXXXXXX	0	
(74)	36	XXXXXXX	14	XXX	0	
ELEU IND	92	XXXXXXXXXXXXXXXXXXXX	92	XXXXXXXXXXXXXXXXXXXX	96	XXXXXXXXXXXXXXXXXXXX
(76)	100	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX
ECH CRUS	91	XXXXXXXXXXXXXXXXXXXX	62	XXXXXXXXXXXX	31	XXXXXXX
(77)	79	XXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX	14	XXX
ROT COCH	89	XXXXXXXXXXXXXXXXXXXX	89	XXXXXXXXXXXXXXXXXXXX	11	XX
(78)	79	XXXXXXXXXXXXXXXXXXXX	36	XXXXXXX	14	XXX
DIG SANG	20	XXXX	12	XX	0	
(79)	36	XXXXXXX	7	X	0	
AMAR HYB	33	XXXXXXX	13	XXX	0	
(80)	7	X	7	X	0	
BROM PEC	95	XXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXX	0	
(84)	29	XXXXXXX	7	X	0	
SNO POL	54	XXXXXXXXXXXX	0		0	
(85)	50	XXXXXXXXXXXX	0		0	
PHAL MIN	83	XXXXXXXXXXXXXXXXXXXX	60	XXXXXXXXXXXX	0	
(86)	36	XXXXXXX	7	X	0	
CYP ROTU	113	XXXXXXXXXXXXXXXXXXXXX+	113	XXXXXXXXXXXXXXXXXXXXX+	33	XXXXXXX
(88)	100	XXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX

TRIAL NUMBER 3

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

DPX A7881

SPECIES		0.010 kg/ha		0.040 kg/ha		0.160 kg/ha
AUBGIN	74	XXXXXXXXXXXXXXXXXX	104	XXXXXXXXXXXXXXXXXXXXX+	81	XXXXXXXXXXXXXXXXXX
(91)	50	XXXXXXXXXX	29	XXXXXX	21	XXXX
LENTIL	103	XXXXXXXXXXXXXXXXXXXXX+	110	XXXXXXXXXXXXXXXXXXXXX+	110	XXXXXXXXXXXXXXXXXXXXX+
(92)	86	XXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXX	50	XXXXXXXXXX
MUNGB	114	XXXXXXXXXXXXXXXXXXXXX+	105	XXXXXXXXXXXXXXXXXXXXX+	95	XXXXXXXXXXXXXXXXXXXXX
(93)	71	XXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	43	XXXXXXXXXX
TEFF	94	XXXXXXXXXXXXXXXXXXXXX	63	XXXXXXXXXXXXXXXXXX	31	XXXXXX
(94)	57	XXXXXXXXXXXX	43	XXXXXXXXXX	29	XXXXXX
COMMEL	90	XXXXXXXXXXXXXXXXXXXXX	40	XXXXXXXXXX	0	
(95)	71	XXXXXXXXXXXXXXXXXX	14	XXX	0	
ORY BATH	0		0		0	
(97)	0		0		0	
AGE CON	33	XXXXXX	0		0	
(102)	50	XXXXXXXXXX	0		0	
BID PIL	100	XXXXXXXXXXXXXXXXXXXXX	81	XXXXXXXXXXXXXXXXXXXXX	119	XXXXXXXXXXXXXXXXXXXXX+
(103)	79	XXXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXX	36	XXXXXX
ISCH RU	107	XXXXXXXXXXXXXXXXXXXXX+	69	XXXXXXXXXXXXXXXXXX	0	
(104)	43	XXXXXXXXXX	14	XXX	0	

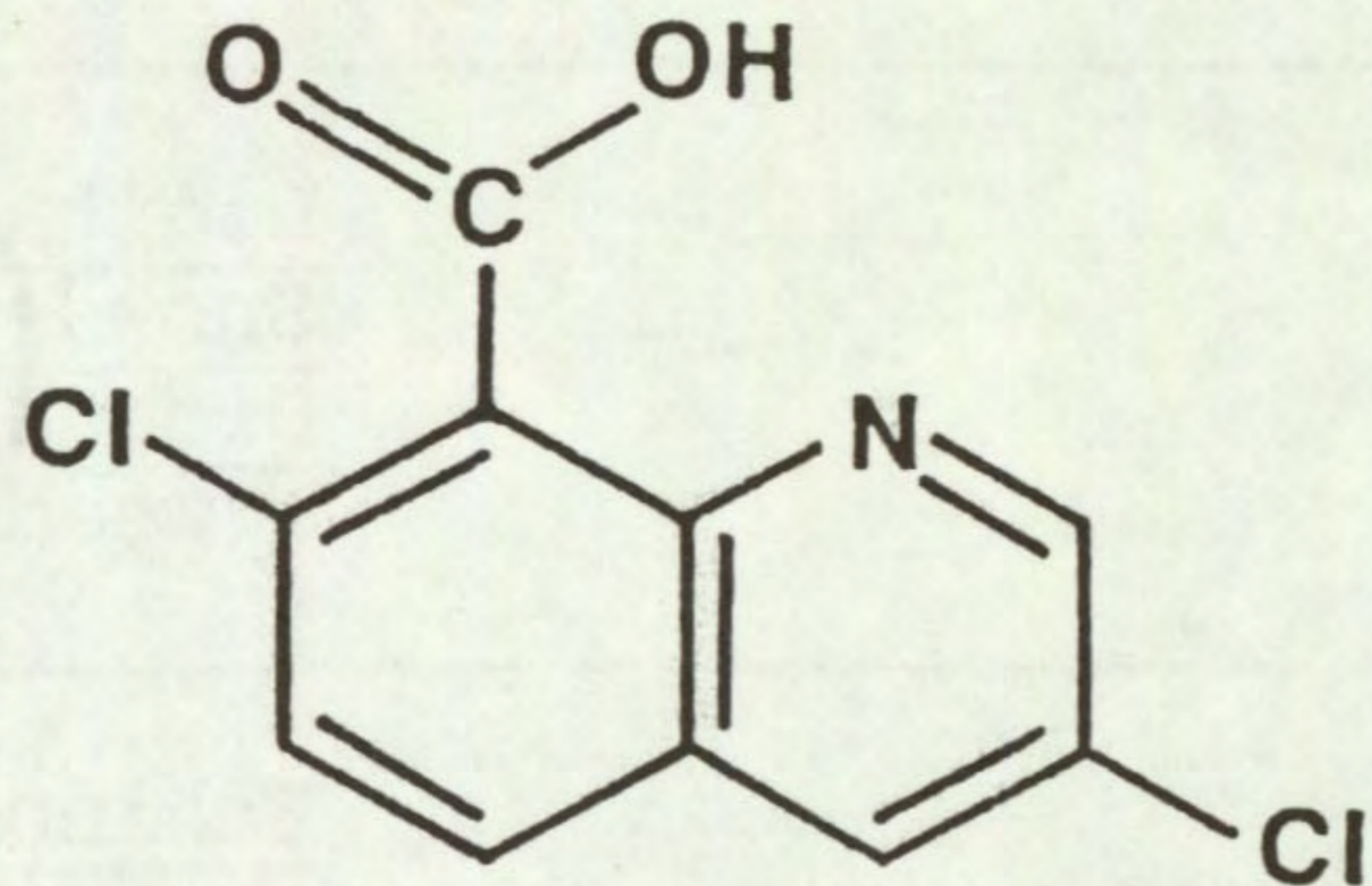
NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
 DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

Code name BAS 514 00H Trade name Facet
 (proposed)

Common name quinclorac

Chemical name 3,7-dichloro-8-quinoline carboxylic acid

Structure



Source BASF Aktiengesellschaft
 Agricultural Research Station
 D-6703 Limburgerhof
 APE/IW
 West Germany

Information available and suggested uses

Annual grass, in particular *Echinochloa* spp., and broad-leaved weed control in rice, pre- or post-emergence at doses ranging from 0.15 - 0.75 kg ai/ha. Other uses may include pre- or post-emergence applications at doses ranging from 0.25 - 2.0 kg ai/ha in lawns, rapeseed, sugar beet and soyabeans for annual grass and broad-leaved weed control.

Formulation used Wettable powder 50% ai

Spray volume 407 l/ha

RESULTS

Full results are given in the histograms on pages 21-23 and potential selectivities are summarised in the following table.

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

BAS 514 00H pre-emergence

Dose kg ai/ha	Crops: vigour reduced by less than 15%	Weeds: number or vigour reduced by 70% or more
1.6	no crops tolerant	
0.4	maize + S sorghum + S	<u>Digitaria sanguinalis</u> <u>Snowdenia polystachya</u> <u>Bidens pilosa</u> + weeds below
0.1	crops above + millet maize sorghum cotton kenaf rice teff	<u>Echinochloa crus-galli</u> <u>Ageratum conyzoides</u>

COMMENTS ON RESULTS

The lowest dose of 0.1 kg ai/ha of BAS 514 00H gave selective control of Echinochloa crus-galli and Ageratum conyzoides in all the cereal crops and the broad-leaved crops cotton and kenaf. The addition of safeners allowed the safe use of 0.4 kg/ha on sorghum and maize and, thus, extended the range of weeds controlled in these crops at the middle dose of 0.4 kg ai/ha to include Bidens pilosa and the annual grasses Digitaria sanguinalis and Snowdenia polystachya. No crops were tolerant at the highest dose of 1.6 kg ai/ha.

The manufacturer's information suggested a use in soyabeans but when applied as a pre-emergence treatment the large-seeded legumes were very sensitive to all doses of BAS 514 00H.

The range of selectivities offered by BAS 514 00H, in particular the control of Snowdenia polystachya in maize and sorghum and Echinochloa crus-galli in rice, together with the tolerance by cotton and kenaf of the lowest dose of 0.1 kg ai/ha, justifies the need for further testing of this chemical in the field.

TRIAL NUMBER 3

BAS 514 00H

SPECIES		0.100 kg/ha		0.400 kg/ha		1.600 kg/ha
ONION	105	XXXXXXXXXXXXXXXXXXXXX+	64	XXXXXXXXXXXXXX	18	XXXX
(8)	79	XXXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXXXX	14	XXX
MILLET	104	XXXXXXXXXXXXXXXXXXXXX+	104	XXXXXXXXXXXXXXXXXXXXX+	0	
(57)	86	XXXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX	0	
MAIZE+S	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX
(58)	93	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX
MAIZE	104	XXXXXXXXXXXXXXXXXXXXX+	96	XXXXXXXXXXXXXXXXXXXXX	104	XXXXXXXXXXXXXXXXXXXXX+
(59)	79	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX
SORG+S	107	XXXXXXXXXXXXXXXXXXXXX+	87	XXXXXXXXXXXXXXXXXXXXX	87	XXXXXXXXXXXXXXXXXXXXX
(60)	100	XXXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX
SORGHUM	100	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX
(61)	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX
TOMATO	96	XXXXXXXXXXXXXXXXXXXXX	104	XXXXXXXXXXXXXXXXXXXXX+	52	XXXXXXXXXXXX
(62)	29	XXXXXX	14	XXX	14	XXX
PIGEON P	118	XXXXXXXXXXXXXXXXXXXXX+	129	XXXXXXXXXXXXXXXXXXXXX+	0	
(63)	71	XXXXXXXXXXXXXXXXXXXXX	29	XXXXXX	0	
COWPEA	109	XXXXXXXXXXXXXXXXXXXXX+	100	XXXXXXXXXXXXXXXXXXXXX	36	XXXXXXXX
(64)	79	XXXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXXXX	14	XXX
CHICKPEA	74	XXXXXXXXXXXXXXXXXXXXX	116	XXXXXXXXXXXXXXXXXXXXX+	0	
(65)	50	XXXXXXXXXXXX	14	XXX	0	
GRNDNUT	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	0	
(66)	57	XXXXXXXXXXXX	36	XXXXXX	0	
SOYABEAN	109	XXXXXXXXXXXXXXXXXXXXX+	82	XXXXXXXXXXXXXXXXXXXXX	0	
(67)	71	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXX	0	
COTTON	109	XXXXXXXXXXXXXXXXXXXXX+	91	XXXXXXXXXXXXXXXXXXXXX	91	XXXXXXXXXXXXXXXXXXXXX
(68)	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
 DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

TRIAL NUMBER 3

BAS 514 00H

SPECIES		0.100 kg/ha		0.400 kg/ha		1.600 kg/ha
JUTE	0			0		0
(69)	0			0		0
KENAF	89	XXXXXXXXXXXXXXXXXXXXX	83	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXXX
(70)	86	XXXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXXXXXXXXXXX	21	XXXXX
SESAMUM	0			0		0
(72)	0			0		0
RICE	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	65	XXXXXXXXXXXXXXXXXXXXX
(74)	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXXX
ELEU IND	83	XXXXXXXXXXXXXXXXXXXXX	83	XXXXXXXXXXXXXXXXXXXXX	67	XXXXXXXXXXXXXXXXXXXXX
(76)	100	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	57	XXXXXXXXXXXXX
ECH CRUS	100	XXXXXXXXXXXXXXXXXXXXX	0		0	
(77)	29	XXXXXX	0		0	
ROT COCH	22	XXXXX	100	XXXXXXXXXXXXXXXXXXXXX	78	XXXXXXXXXXXXXXXXXXXXX
(78)	50	XXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXXX
DIG SANG	49	XXXXXXXXXXXXX	0		0	
(79)	57	XXXXXXXXXXXXX	0		0	
AMAR HYB	120	XXXXXXXXXXXXXXXXXXXXX+	80	XXXXXXXXXXXXXXXXXXXXX	0	
(80)	50	XXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	0	
BROM PEC	68	XXXXXXXXXXXXX	95	XXXXXXXXXXXXXXXXXXXXX	63	XXXXXXXXXXXXXXXXXXXXX
(84)	100	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	7	X
SNO POL	77	XXXXXXXXXXXXX	47	XXXXXXXXXXXXX	0	
(85)	79	XXXXXXXXXXXXXXXXXXXXX	21	XXXXX	0	
PHAL MIN	100	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	83	XXXXXXXXXXXXXXXXXXXXX
(86)	93	XXXXXXXXXXXXXXXXXXXXX	86	XXXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXXX
CYP ROTU	87	XXXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXXX	40	XXXXXXXXXXXXX
(88)	100	XXXXXXXXXXXXXXXXXXXXX	93	XXXXXXXXXXXXXXXXXXXXX	36	XXXXXXXXXXXXX

TRIAL NUMBER 3

NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
 DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

BAS 514 00H

SPECIES		0.100 kg/ha		0.400 kg/ha		1.600 kg/ha
AUBGIN	96	XXXXXXXXXXXXXXXXXXXXX	0		89	XXXXXXXXXXXXXXXXXXXXX
(91)	36	XXXXXXX	0		14	XXX
LENTIL	83	XXXXXXXXXXXXXXXXXXXXX	0		0	
(92)	29	XXXXXXX	0		0	
MUNGB	105	XXXXXXXXXXXXXXXXXXXXX+	114	XXXXXXXXXXXXXXXXXXXXX+	0	
(93)	79	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX	0	
TEFF	114	XXXXXXXXXXXXXXXXXXXXX+	86	XXXXXXXXXXXXXXXXXXXXX	55	XXXXXXXXXXXX
(94)	100	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	43	XXXXXXXXXXXX
COMMEL	90	XXXXXXXXXXXXXXXXXXXXX	100	XXXXXXXXXXXXXXXXXXXXX	50	XXXXXXXXXXXX
(95)	86	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX	21	XXXX
ORY BATH	56	XXXXXXXXXXXX	94	XXXXXXXXXXXXXXXXXXXXX	69	XXXXXXXXXXXXXXXXXXXXX
(97)	86	XXXXXXXXXXXXXXXXXXXXX	71	XXXXXXXXXXXXXXXXXXXXX	36	XXXXXXX
AGE CON	33	XXXXXXX	0		0	
(102)	21	XXXX	0		0	
BID PIL	81	XXXXXXXXXXXXXXXXXXXXX	75	XXXXXXXXXXXXXXXXXXXXX	0	
(103)	86	XXXXXXXXXXXXXXXXXXXXX	29	XXXXXXX	0	
ISCH RU	121	XXXXXXXXXXXXXXXXXXXXX+	97	XXXXXXXXXXXXXXXXXXXXX	79	XXXXXXXXXXXXXXXXXXXXX
(104)	93	XXXXXXXXXXXXXXXXXXXXX	64	XXXXXXXXXXXXXXXXXXXXX	36	XXXXXXX

ACKNOWLEDGEMENTS

I am grateful to Mr C.Marshall for processing the experimental data and to Miss J.Wyatt and R.F. Hughes and staff for technical assistance. The work was carried out with financial support from the European Community (EEC) under Contract No.TSD.A.198 (UK)H.

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NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

Appendix 1. Species, abbreviations, cultivars and stage of growth at assessment

	Designation and computer serial number	Cultivar or source	No. per pot	Depth of planting	Stage of growth at assessment (untreated) controls, leaf numbers exclusive of cotyledons
Onion	ONION (8)		15	0.5	4-4.5 leaves
Millet (<u>Pennisetum americanum</u>)	MILLET (57)	ex Bornu	10	0.5	6-8 leaves
Maize + safener (<u>Zea mays</u>)	MAIZE + S (58)	LG 11	6	2	6-7 leaves
Maize (<u>Zea mays</u>)	MAIZE (59)	LG 11	6	2	5-6 leaves
Sorghum + safener (<u>Sorghum bicolor</u>)	SORG + S (60)	TUB 22	8	1	5-6 leaves
Sorghum (<u>Sorghum bicolor</u>)	SORG (61)	TUB 22	8	1	5-6 leaves
Tomato (<u>Lycopersicum esculentum</u>)	TOMATO (62)	Moneymaker	8	0.5	5-6 leaves
Pigeon pea (<u>Cajanus cajan</u>)	PIGEON P (63)	ICRISAT T	6	1	6-7 trifoliates
Cowpea (<u>Vigna unguiculata</u>)	COWPEA (64)	Blackeye	6	1	2 trifoliates
Chickpea (<u>Cicer arietinum</u>)	CHICKPEA (65)	ILC 482	6	1	15-16 leaves
Groundnut (<u>Arachis hypogaea</u>)	GRNDNUT (66)	Selley	4	2	5-7 leaves
Soyabean (<u>Glycine max</u>)	SOYABEAN (67)	Amsoy	6	1	4-5 trifoliates
Cotton (<u>Gossypium hirsutum</u>)	COTTON (68)	Coker 315	6	1	3-4 leaves
Jute (<u>Corchorus capsularis</u>)	JUTE (69)	India	15	0.5	6-8 leaves

Kenaf (<u>Hibiscus cannabinus</u>)	KENAF (70)	WRO 1981	10	0.5	5-6 leaves
Sesamum (<u>Sesamum indicum</u>)	SESAMUM (72)	Sudan	15	0.5	3-4 leaves
Rice (<u>Oryza sativa</u>)	RICE (74)	IR 36	10	1	4-5 leaves
<u>Eleusine indica</u>	ELEU IND (76)	Zimbabwe 1980	20	0.5	6-8 leaves
<u>Echinochloa crus-galli</u>	ECH CRUS (77)	WRO 1979	20	0.5	5-6 leaves
<u>Rottboellia cochinchinensis</u> (= <u>R. exaltata</u>)	ROTT EXA (78)	Zimbabwe 1984	15	0.5	5-6 leaves
<u>Digitaria sanguinalis</u>	DIG SANG (79)	WRO 1979	20	0.25	4-7 leaves
<u>Amaranthus hybridus</u>	AMAR HYB (80)	Zimbabwe 1985	20	0.25	6-7 leaves
<u>Bromus pectinatus</u>	BROM PEC (84)	Tanzania 1981	12	0.5	5-6 leaves
<u>Snowdenia polystachya</u>	SNO POL (85)	Ethiopia 1980	30	0.25	5-6 leaves
<u>Phalaris minor</u>	PHAL MIN (86)	WRO 1979	20	0.25	6-7 leaves
<u>Cyperus esculentus</u>	CYP ESCU (87)	WRO clone 2 (ex S.Africa)	4	2	6-7 leaves
<u>Cyperus rotundus</u>	CYP ROTU (88)	WRO clone 1 (Zimbabwe)	5	2	8-10 leaves
Aubergine (<u>Solanum melongena</u>)	AUBGIN (91)	Money Maker (F.I.hybrid)	8	0.5	3-4 leaves
Lentil (<u>Lens culinaris</u>)	LENTIL (92)	Syrian local	8	1	14-17 leaves
Mungbean (<u>Phaseolus aureus</u>)	MUNGB (93)	CES-ID-21	6	1	1-2 trifoliate
Teff (<u>Eragrostis tef</u>)	TEFF (94)	Ethiopia 1981	20	0.25	4-6 leaves
<u>Commelina diffusa</u>	COMMEL (95)	USA 1985	8	1	5-6 leaves
<u>Oryza barthii</u>	ORYBATH (97)	Senegal 1981	10	1	5-6

<u>Ageratum conyzoides</u>	AGE CON (102)	Tanzania 1984	9	1	3-4 pairs of leaves
<u>Bidens pilosa</u>	(BID PIL (103)	Tanzania 1984	9	1	3-4 leaves
<u>Ischaemum rugosum</u>	ISCH RU (104)	Thailand 1982	20	1	6-7 leaves

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

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



INSTITUTE OF ARABLE CROPS RESEARCH

Long Ashton Research Station

WEED RESEARCH DEPARTMENT



TECHNICAL REPORTS

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(* denotes Reports now out of print)

55. The activity and selectivity of the herbicides carbetamide, methazole, R 11913 and OCS 21693. May 1979. W G Richardson and C Parker. Price - £1.80
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58. The tolerance of fenugreek (Trigonella foenumgraecum L.) to various herbicides. December 1979. W G Richardson. Price - £1.55
59. Recommended tests for assessing the side-effects of pesticides on the soil microflora. April 1980. M P Greaves, N J Poole, K H Domsch, G Jagnow and W Verstraete. Price - £2.00 (Amended version to be printed in 1986).
60. Properties of natural rainfalls and their simulation in the laboratory for pesticide research. September 1980. R C Simmons. Price - £1.25
61. The activity and post-emergence selectivity of some recently developed herbicides: R 40244, DPX 4189, acifluorfen, ARD 34/02 (NP 55) and PP 009. November 1980. W G Richardson, T M West and C Parker. Price - £3.75
62. The activity and pre-emergence selectivity of some recently developed herbicides: UBI S-734, SSH-43, ARD 34/02 (= NP 55), PP 009 and DPX 4189. February 1981. W G Richardson, T M West and C Parker. Price - £3.50
63. The activity and post-emergence selectivity of some recently developed herbicides: SSH-41, MB 30755, AC 213087, AC 222293 and Dowco 433. May 1981. W G Richardson, T M West and C Parker. Price - £3.50
64. The activity and pre-emergence selectivity of some recently developed herbicides: chlomethoxynil, NC 20484 and MBR 18337. March 1982. W G Richardson, T M West and C Parker. Price - £3.00
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NB: BAS 514 is quinclorac, CGA is 131036 is triasulfuron, ,
DPX A7881 is ethametsulfuron-methyl, DPX L5300 is tribenuron-methyl

66. The activity and pre-emergence selectivity of some recently developed herbicides: AC 213087 and AC 222293. December 1982. W G Richardson, T M West and C Parker. Price - £2.00
67. The activity and post-emergence selectivity of some recently developed herbicides: trifopsime, glufosinate, RH 8817, MBR 18337 and NC 20484. December 1982. W G Richardson, T M West and C Parker. Price - £3.25
68. The activity and pre-emergence selectivity of some recently developed herbicides: WL 49818, WL 82830, WL 83627, WL 83801 and DPX 5648. December 1982. W G Richardson, T M West and C Parker. Price - £4.00
69. The activity and late post-emergence selectivity of some recently developed herbicides: AC 252925, DOWCO 453, HOE 33171 and HOE 35609. March 1983. W G Richardson, T M West and G P White. Price - £3.25
70. The potential of various herbicides for selective control of weed grasses and Stellaria media in newly sown ryegrass/clover leys and ryegrass seed crops. May 1983. F W Kirkham Price - £1.75
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87. The potential use of grass growth retardants at Sullom Voe terminal, Shetland. A report prepared for W J Cairns and Partners, 16 Randolph Crescent, Edinburgh, Environmental Consultants to BP Petroleum Development Ltd as Operators of Sullom Voe Terminal. May 1985. E J P Marshall. Price - £3.00.
88. A further study of the effect of six cereal herbicide treatments on a range of broad-leaved field margin plants. June 1985. J E Birnie. Price - £2.50
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92. The activity and post-emergence selectivity of some recently developed herbicides: SMY 1500, PPG 884, PPG 1259 and DPX-M 6316. W G Richardson and T M West. February 1986. Price - £4.20.
93. The pre-emergence selectivity in warm climate species of some recently developed herbicides: metazachlor, RST 20024H, orbencarb and diflufenican. C Parker and A K Wilson. February 1986. Price £2.70.
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95. Grass Growth Retardant use at Sullom Voe Terminal, Shetland 1985 Programme Report. (A report prepared for W.J. Cairns & Partners, 16 Randolph Crescent, Edinburgh, Environmental Consultants to BP Petroleum Development Limited as Operators of Sullom Voe Terminal). E.J.P. Marshall. August 1986. Price - £2.50
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98. The activity, pre-emergence selectivity and persistence of some recently developed herbicides: SMY 1500, PPG 884, PPG 1259, DPX-M 6316 and FMC 57020. T.M. West and W.G. Richardson. November, 1987. Price - £6.00.
99. The pre-emergence selectivity in warm-climate species of some recently developed herbicides: SMY 1500, PPG 884, PPG 1259, DPX M6316 and FMC 57020. A.K. Wilson and C. Parker. August, 1988. Price - £5.00.
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101. The pre-emergence selectivity in warm-climate species of some recently developed herbicides: CGA 131036, DPX L5300, DPX A7881, BAS 514. A.K. Wilson. August, 1988. Price - £3.50.
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