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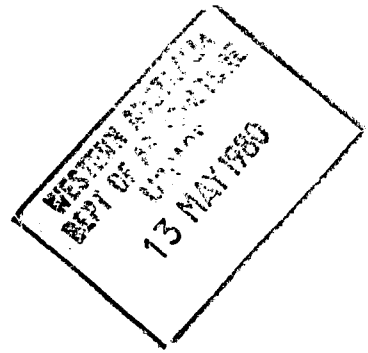


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DEPARTMENT OF AGRICULTURE

WESTERN AUSTRALIA

SUMMARY RESEARCH RESULTS 1979

G.A. Pearce
Weed Agronomy Section
Plant Research Division

DPX4189 FOR WEED CONTROL IN WHEAT 79N27

LOCATION

Toodyay

OBJECT

To compare DPX 4189 with other herbicide treatments for the control of ryegrass and broadleaved weeds in a wheat crop.

SITE

A light land area with the site selected in a bulk Gamanya wheat crop. Weeds present included ryegrass, capeweed, chickweed and a heavy stand of radish.

TREATMENTS

Seven treatments were applied on July 21 when the crop was in the 4-5 leaf stage. Plant counts were taken on August 29.

RESULTS

Treatment* - Rate/ha	Plant Counts/m ²		Yield Kg/ha
	B/L	Rye-grass	
1. DPX4189 43.8g	19	20	1757
2. DPX4189 87.6g	10	8	1592
3. Diuron 500ml + MCPA 400ml	12	-	1774
4. Diuron 500ml + Brominil M 250ml	9	-	1685
5. Diuron 550ml + 2,4-D amine 250ml	9	-	1820
6. Linuron 550g	14	-	1869
7. Nil	84	71	1631

* Rates given in quantities of commercial product.
Ryegrass counts not undertaken on Trs. 3-6.
B/L = broadleaved weeds, mostly radish.

COMMENTS

DPX4189 appeared to retard the crop and although excellent weed control was obtained yield was affected.

Generally, the site did not show any moisture stress problems. DPX 4189 shows potential for the control of ryegrass and broadleaf weeds and this exploratory trial will be followed up with a larger number of trials in 1980 in co-operation with the manufacturer.

HERBICIDE MIXTURES FOR BROADLEAVED WEEDS IN WHEAT

LOCATION

Toodyay

OBJECT

To test several herbicide mixtures for the control of broad-leaved weeds in cereals, comparing Linuron with Diuron as an additive to MCPA amine.

SITE

The trial was located in a bulk gamenya crop with a heavy radish population. The soil was a light sandy type. Rainfall was below normal but the crop did not show moisture stress.

TREATMENTS

There were seven treatments and the trial was sprayed on 9.7.'79. when the crop was in the $1\frac{1}{2}$ - $2\frac{1}{2}$ leaf stage. Plant counts were taken on August 29.

RESULTS

Treatments - Rate/ha	Cost/ha	B/L /M ²	Yield kg/ha	Value of yield increase
1. Diuron 350ml + MCPA 400ml	\$2.66	47	1965	\$53.54
2. Linuron 130g + MCPA 400ml	\$2.38	69	1959	\$53.22
3. Linuron 200g + MCPA 400ml	\$3.03	38	2105	\$67.17
4. Linuron 250g + MCPA 400ml	\$3.50	28	2000	\$66.20
5. Linuron 300g + MCPA 400ml	\$3.97	39	2011	\$56.83
6. Linuron 550g	\$5.14	37	2138	\$68.36
7. Nil	Nil	725	1403	Nil

Treatment rates given in terms of product.

B/L = Broad leaved weeds - mostly radish. Germination of radish occurred after spraying.

Cost of treatments based on Diuron \$4.29/litre, MCPA \$2.90/litre.

Value of yield increase is based on \$100 per tonne less cost of chemical.

All the plots sprayed showed good weed control. The rate 200g linuron + 400ml MCPA would appear to be the most successful price wise.

COMMENTS

1. On this trial there were some head deformities on treatments sprayed with MCPA. The spraying was at the $1\frac{1}{2}$ - $2\frac{1}{2}$ leaf stage and this was obviously too early as far as crop tolerance was concerned.
2. This trial illustrates the importance of delaying any post emergence treatment until a full emergence of weeds has occurred. It supports the view that no crop spraying should be undertaken until at least the 3 leaf stage of the crop has been reached.
3. The use of linuron in preference to diuron will be tested over a wider area in 1980. It has a number of advantages over diuron and has always been highly regarded for crop spraying and tolerance. It is likely that a flowable linuron will become available within a couple of years.

DIURON MIXTURES FOR BROAD LEAF WEEDS IN CEREALS

LOCATION

"Glencoe" C/- P.O. Bindoon

OBJECT

To demonstrate the effectiveness of various herbicide treatments for the control of broadleaved weeds in oats.

SITE

The site was selected in a bulk crop. Weeds at times of spraying were:-

1st time of spraying 4.7.'79 Tr 1.
Radish $2\frac{1}{2}$ - $3\frac{1}{2}$ leaf, chickweed 2 leaf,
Capeweed 10 cm diameter rosette.

2nd time of spraying 16.7.79 Trs 2-5.
Radish mainly 5 leaf, chickweed 4-6 leaf,
capeweed 10-12 cm diameter.

TREATMENTS

There were six treatments including one control. At the first time of spraying (Treatment 1) the oat crop was at the 3 leaf stage. At the second time of spraying the crop was at the 6-12 leaf stage (Treatments 2-5).

RESULTS

Treatment	Yield kg/ha
1. Diuron 350ml + MCPA 400ml	2342.6
2. Diuron 400ml + MCPA 500ml	2283.9
3. Diuron 500ml + MCPA 350ml	2714.6
4. Diuron 500ml + 2,4-D amine 250ml	2569.3
5. 2,4-D amine 1000ml	2595.9
6. Nil	2653.3

COMMENTS

The main weed problem was wild oats with very few broad leaved weeds present. The yields obtained reflect the lack of wild oat control with these herbicides.

HERBICIDES FOR EARLY PLANTING 79M042

LOCATION

N. Tonkin - Coomberdale

OBJECT

To test various herbicides for the pre emergence control of grasses in early planted Darkan wheat crop.

SITE

A light land area which was cropped in 1978 and having a good stand of ryegrass and wild oats.

TREATMENTS

There were eight treatments with three times and three techniques of planting.

RESULTS

Treatments	Yield kg/ha
Direct sowing at rain + Yield 2.2 l/ha	1551
Direct sowing at rain + Hoegrass 0.75 l/ha	1645
Direct sowing at rain + no treatment	1444
Sprayseed + Hoegrass 0.75 l/ha	950
Sprayseed + no treatment	956
District practice + Yield 1.1 l/ha	1339
District practice + Hoegrass 0.75 l/ha	1358
District practice + no treatment	1210

As the trial progressed the ryegrass infestations and occurrence of wet areas were extremely variable and therefore the results obtained do not give a clear picture of the performance of the treatments.

BROAD LEAF WEEDS IN CEREALS 79M045

LOCATION

Miling (J. Lewis, Plympton)

OBJECT

To demonstrate the effectiveness of various herbicides for the control of broadleaved weeds in wheat.

SITE

A sandy clay site was chosen in a bulk crop area. Rainfall throughout the season was light and the crop showed some moisture stress as the heads were filling out. Weeds present included turnip, capeweed, wild mustard and a very heavy radish stand.

RESULTS

Treatments	Kg/ha*	Radish	Cape weed	Scarlet Pimpernel	Clover
1. Diuron 350ml + MCPA 400ml	1495.1	0.4	3.1	73.3	4.7
2. Diuron 400ml + MCPA 500ml	1386.8	0.06	0.9	1.7	3.3
3. Diuron 500ml + MCPA 350ml	1372.7	0.1	0.6	0.7	2.3
4. Diuron 500ml + 2,4-D amine 250ml	1518.9	0.1	1	0.6	2
5. 2,4-D amine 1000ml	1344.6	17.7	11.3	554.3	7.6
6. Nil	1340.4	20	12.7	730	6.5

* Statistically there was no difference in yield.

Note, on all diuron plots the weeds were retarded and therefore probably not competing with the crop. All the clover counted was either at the seedling stage or moderately to severely burnt.

On treatment 1 nearly all the weeds counted had germinated after the spray was applied.

HERBICIDES FOR EARLY PLANTING 79LG27

LOCATION

Karlgarin

OBJECT

To test broadleaf weed control chemicals under different systems of cultivation and seeding.

SITE

Old light land, Wodgil. Little to no clover.

Treatments	Date of Treatments	Yield Kg/ha
A Direct Drill with Combine after rain		
1. Nil * All plots sown 6.6.'79		725.9
2. Diuron 350ml + MCPA 400	9.7.79	972.1
3. Diuron 350ml + MCPA 400 + N50kg/ha 6.6.79	9.7.79	1126.7
4. EL171 250ml	6.6.79	1063.6
5. Afalon 350g + MCPA 400	9.7.79	934.2
B Direct Drill with Combine after Sprayseed		
6. Nil * All plots sown 9.7.'79		937.3
7. Diuron 500ml + MCPA 350ml	30.8.79	918.4
8. Diuron 350ml + MCPA 400ml + N 19.6.79	30.8.79	1199.3
9. EL171 250ml	19.6.79	924.7
10. Diuron 500ml + 2,4-D 50% 250ml Sprayseed applied 13.6.79	30.8.79	814.3
C District Practice		
1. Nil * All plots sown 9.7.'79		1158.3
2. Diuron 500ml + MCPA 350ml	30.8.79	1041.5
3. Diuron 350ml + MCPA 400ml + N	30.8.79	1341.3
4. EL171 250ml	19.6.79	1044.6
5. Diuron 500ml + 2,4-D (50%) 250ml	30.8.79	959.4

B and C treatments should have been planted on 19.6.79 however the drill was out of action and the crop was not sown till 9.7.79. This left a 27 day break between spraying the sprayseed and sowing.