1981

Herbicides on tomato, capsicum and eggplant

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DEPARTMENT OF AGRICULTURE
Western Australia

EXPERIMENTAL SUMMARY
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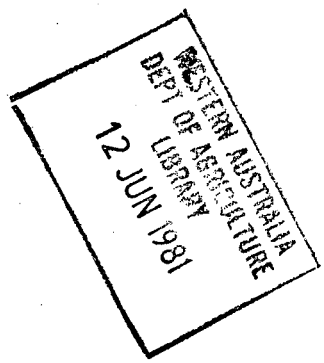

Herbicides on

TOMATO
CAPSICUM
EGGPLANT

D.J. Gilbey
Weed Agronomy Section.

SUMMARY

Stomp controlled the widest range of weeds with a wide margin of crop tolerance.

Recommend 3 l/ha or lower before transplanting.

Bensulide controlled grasses well, but did not control nightshade. Recommend 12 l/ha after transplanting.

Lasso controlled a wide range of weeds, but the margin of selectivity is narrow. Recommended maximum 4 l/ha.

Surflan controlled all weeds well, except nightshade, when applied after transplanting. The margin of selectivity is narrow on tomato and zero for nightshade. Recommend 1.5 l after transplanting.

Trifluralin controlled 3 weeds, and the margin of selectivity is narrow. Recommend rate of 4 l/ha.

TRIFLURALIN ON TOMATO, EGGPLANT, CAPSICUM 80MD26

LOCALITY : Medina Research Station

VARIETIES : Tomato - Burnley Bounty
Eggplant - Market Supreme
Capsicum - California Wonder

DATE TRANSPLANTED : 5.11.80.

DATE SPRAYED : 5.11.80 immediately before transplanting. Plots were raked over after spraying. Planting beds were overhead irrigated before and after spraying.

RESULTS : Visual rating 3.12.80
29.12.80
Weed counts 5.12.80
Dry Weight (Vegs) 10.12.80
Plant counts (Vegs) 9.12.80
Flower bud count 9.12.80

Rating scale - weeds:

0 = no effect
1 = 0-25% control
2 = 25-50% control
3 = 50-75% control
4 = 75-98% control
5 = 98-100% control
6 = 100% control

crop:

0 = no effect
1 = slight effect
2 = severe effect
3 = complete kill

Effect of Trifluralin on Weeds

	Treatment	l/ha	Visual Rating 3.12.80 BL Weeds	Grass	29.12.80 BL Weeds	Grass	Plants/m^2 Crabgrass	Portulaca	Nightshade
1	Trifluralin	1	343	334	020	323	88	33	46
2		2	444	445	222	245	25	8	17
3		4	455	555	254	455	4	4	8
4		8	455	656	445	646	4	0	8
5	Unsprayed		000	000	000	000	254	292	38
6	Unsprayed		000	000	000	000	171	138	71
	LSD 5%						122	56	25

Effect of Trifluralin on Vegetables

	Treatment	l/ha	Tomato Visual Rating 3.12.80	29.12.80	Dry Wt. g/plant	Capsicum Visual Rating 3.12.80	29.12.80	Eggplant Visual Rating 3.12.80	29.12.80
1	Trifluralin	1	000	000	26	000	000	000	000
2		2	000	000	32	000	000	000	000
3		4	000	001	29	000	000	100	000
4		8	000	102	20	000	000	000	000
5	Unsprayed		000	000	23	000	000	000	000
6	Unsprayed		000	000	23	000	000	000	000
	LSD 5%				6				

Comments - 4 l/ha controlled grasses and broad leaf weeds satisfactorily. Although all crops tolerated 8 litres Trifluralin/ha some swelling at the base of the tomatoes was observed, particularly at the high rate. This needs further study in field trials.

Commercial applications should not exceed 4 l/ha.

SURFLAN ON TOMATO, EGGPLANT, CAPSICUM 80MD27

LOCALITY : Medina Research Station

VARIETIES : Tomato - Burnley Bounty
Eggplant - Market Supreme
Capsicum - California Wonder

DATE TRANSPLANTED : 5.11.80 and 6.11.80.

SPRAYING : Immediately before and after transplanting. Planting beds were overhead irrigated before and after spraying.

RESULTS :

Visual rating	3.12.80
	29.12.80
Weed counts	5.12.80
Dry weights (Vegs)	8.12.80 to 17.12.80
Plant counts (Vegs)	8.12.80
Flower bud count	8.12.80

Rating scale - doublegee:

0 = no effect
1 = 0-25% control
2 = 25-50% control
3 = 50-75% control
4 = 75-98% control
5 = 98-100% control
6 = 100% control

clover:

0 = no effect
1 = slight effect
2 = severe effect
3 = complete kill

Effect of Surflan on Weeds

Treatment l/ha	Visual rating 3.12.80 BL Weeds	Grass	29.12.80 BL Weeds	Grass	Plants/m^2 Crab-grass	Port-ulaca	Night shade	Era-grostis	Sow thistle
1. Surflan 1.5 IBT	043	555	030	555	8	17	92	4	21
2. 3.0 IBT	455	555	044	554	4	13	8	8	8
3. 6.0 IBT	545	556	222	4	4	4	21	0	8
4. 12.0 IBT	466	666	NR		0	0	4	0	0
5. 1.5 IAT	344	655	043	555	8	8	67	0	8
6. 3.0 IAT	454	556	253	555	4	4	42	0	8
7. 6.0 IAT	555	666	554	565	0	0	8	0	4
8. 12.0 IAT	566	666	666	666	0	0	0	0	0
9. Unsprayed	000	000	000	000	142	167	108	63	46
10. Unsprayed	000	000	000	000	325	275	125	71	38
LSD 5%					79	121	79	49	21

Effect of Surflan on Vegetables

Treatment l/ha	Tomato Visual Rating 3.12.80	29.12.80	Dry Weight g/plant	Plants/ 2.8m	% Plants flowering
1. Surflan 1.7 IBT	000	001	26.2	13	10
2. 3.0 IBT	000	000	25.1	12	0
3. 6.0 IBT	211	211	8.7	10	6
4. 12.0 IBT	222	232	NA	8	0
5. 1.6 IAT	000	000	30.2	13	49
6. 3.0 IAT	000	000	23.3	12	53
7. 6.0 IAT	111	101	17.1	10	31
8. 12.0 IAT	100	223	NA	8	13
9. Unsprayed	000	000	26.7	13	53
10. Unsprayed	000	000	21.4	13	45
LSD 5%			9.6	4	36

Effect of Surflan on Vegetables

Treatment l/ha	Capsicum Visual Rating 3.12.80	29.12.80	Dry Wt. g/plant	% flowering
1. Surflan 1.7 IBT	000	000	1.1	81
2. 3.0 IBT	112	010	1.0	60
3. 6.0 IBT	212	101	0.6	62
4. 12.0 IBT	222	232	0.5	27
5. 1.6 IAT	000	000	2.3	90
6. 3.0 IAT	000	000	2.3	91
7. 6.0 IAT	000	001	2.0	85
8. 12.0 IAT	000	221	1.8	43
9. Unsprayed	000	000	1.9	90
10. Unsprayed	000	000	1.8	90
LSD 5%			0.6	19

Treatment l/ha	Egg Plant Visual Rating 3.12.80	29.12.80	Dry Wt. g/plant	% flowering
1. Surflan 1.7 IBT	011	000	2.1	33
2. 3.0 IBT	112	011	1.4	7
3. 6.0 IBT	212	202	1.1	10
4. 12.0 IBT	222	232	0.7	0
5. 1.6 IAT	000	000	4.0	36
6. 3.0 IAT	000	000	4.2	52
7. 6.0 IAT	001	000	3.5	49
8. 12.0 IAT	100	210	3.0	14
9. Unsprayed	000	000	3.7	50
10. Unsprayed	000	000	3.0	52
LSD 5%			0.7	21

IBT = immediately before transplanting
IAT = immediately after transplanting

Comments -

1.5 l Surflan/ha has controlled grass weeds, Portulaca and Sowthistle.
6 l/ha is required for nightshade control.
Surflan must be applied after transplanting on these crops.
Commercial applications should not exceed

3 l/ha in tomato
6 l/ha in capsicum and egg plant

Swelling at the base of tomatoes at the higher rates of Surflan was observed to cause plants to wilt more readily. This effect needs further study in field trials.

LASSO ON TOMATO, CAPSICUM AND EGG PLANT 80MD30

LOCALITY : Medina Research Station

VARIETIES : Tomato - Burnley Bounty
Eggplant - Market Supreme
Capsicum - California Wonder

DATE TRANSPLANTED : 5.11.80.

SPRAYING : immediately after transplanting. Planting beds were overhead irrigated immediately before and after spraying.

RESULTS :

Visual rating	3.12.80
	29.12.80
Weed counts	5.12.80
Dry weights (Vegs)	10.12.80 to 23.12.80
Plant counts (Vegs)	9.12.80
Flower bud count	9.12.80

Rating scale - weeds:

0 = no effect
1 = 0-25% control
2 = 25-50% control
3 = 50-75% control
4 = 75-98% control
5 = 98-100% control
6 = 100% control

crop:

0 = no effect
1 = slight effect
2 = severe effect
3 = complete kill

Effect of Lasso on Weeds

Treatment	l/ha	Visual Rating 3.12.80 BL Weeds	Grass	29.12.80 BL Weeds	Grass	Plants / m^2 Crab-grass	Port-ulaca	Night-shade	Eregrost-is
1. Lasso	1	433	554	233	533	46	221	25	50
2.	2	445	555	433	534	21	88	21	8
3.	4	455	566	445	455	8	8	8	0
4.	8	565	666	444	665	0	0	4	0
5. Unsprayed		000	000	000	000	125	429	75	575
6. Unsprayed		000	000	000	000	175	329	42	467
LSD 5%						57	183	29	222

Effect of Lasso on Vegetables

Treatment	l/ha	Tomato Visual Rating 3.12.80	29.12.80	Dry Wt. g/plant	Capsicum Visual Rating 3.12.80	29.12.80	Dry Wt. g/plant
1. Lasso	1	000	000	49.5	000	000	2.4
2.	2	000	000	45.3	000	000	2.3
3.	4	000	000	47.7	101	000	1.7
4.	8	111	000	35.7	111	000	1.2
5. Unsprayed		000	000	24.5	000	000	1.7
6. Unsprayed		000	000	30.2	000	000	2.0
LSD 5%				12.6			0.5

Treatment	l/ha	Egg plant Visual Rating 3.12.80	29.12.80	Dry Weight g/plant
1. Lasso	1	000	000	6.4
2.	2	111	000	5.5
3.	4	111	000	4.5
4.	8	112	000	3.7
5. Unsprayed		000	000	5.3
6. Unsprayed		000	000	5.7
LSD 5%				1.3

Comments - 4 litres Lasso/ha controlled broad leafed weeds and grasses. Commercial application of Lasso should not exceed 4 l/ha.

BENSULIDE ON TOMATO, EGG PLANT, CAPSICUM 80MD28

LOCALITY : Medina Research Station

VARIETIES : Tomato - Burnley Bounty
Egg plant - Market Supreme
Capsicum - California Wonder

DATE TRANSPLANTED : 5.11.80.

SPRAYING : Immediately before and after transplanting. Planting beds were overhead irrigated before and after spraying.

RESULTS :

Visual rating	3.12.80
	29.12.80
Weed counts	5.12.80
Dry weights (vegs)	11.12.80 to 17.12.80.
Plant counts (vegs)	9.12.80
Flower bud count	9.12.80

Rating scale - weeds:

0 = no effect
1 = 0-25% control
2 = 25-50% control
3 = 50-75% control
4 = 75-98% control
5 = 98-100% control
6 = 100% control

crop:

0 = no effect
1 = slight effect
3 = complete kill

Effect of Bensulide on Weeds

Treatment	l/ha		Visual Rating 3.12.80 BL Weeds	Visual Rating 3.12.80 Grass Weeds	Plants/m^2 Crab-grass	Plants/m^2 Portul-aca	Plants/m^2 Eragrost-is
1	3	IBT	000	444	54	92	0
2	6	IBT	300	555	46	54	0
3	12	IBT	200	565	21	13	0
4	24	IBT	034	666	0	4	0
5	3	IAT	020	455	21	67	4
6	6	IAT	020	555	17	63	0
7	12	IAT	023	666	0	0	0
8	24	IAT	030	665	0	4	0
9 Unsprayed			000	000	263	325	138
10 Unsprayed			000	000	258	300	142
LSD 5%					68	143	76

IBT = immediately before transplanting
IAT = immediately after transplanting

Comments -

Bensulide has selectively controlled Crabgrass, Portulaca and Eragrostis in tomato, capsicum and egg plant at 12 l/ha applied after transplanting. All crops tolerated 24 l bensulide/ha.

STOMP ON TOMATO, EGG PLANT, CAPSICUM 80MD29

LOCALITY : Medina Research Station

VARIETIES : Tomato - Burnley Bounty
Egg plant - Market Supreme
Capsicum - California Wonder

DATED TRANSPLANTED: 5.11.80

SPRAYING : Immediately before and after transplanting. Planting beds were overhead irrigated before and after spraying.

RESULTS :

Visual Rating	3.12.80
	29.12.80
Weed counts	5.12.80
Dry weights (Vegs)	10.12.80 to 23.12.80.
Plant counts (Vegs)	9.12.80
Flower bud count	9.12.80

Rating scale - weeds: 0 = no effect
1 = 0-25% control
2 = 25-50% control
3 = 50-75% control
4 = 75-98" control
5 = 98-100% control
6 = 100% control

crop: 0 = no effect
1 = slight effect
2 = severe effect
3 = complete kill

Effect of Stomp on Weeds

Treatment	l/ha		Visual rating 3.12.80 BL Weeds	Grass	Visual rating 29.12.80 BL Weeds	Grass	Plants/m^2 Crab-grass	Port-ulaca	Night-shade	Era-grost-is	Sow-thistle
1 Stomp	3	IBT	555	556	555	645	4	0	0	0	0
2	6	IBT	666	656	455	455	0	0	0	0	0
3	9	IBT	566	666	555	655	0	0	0	0	0
4	12	IBT	566	666	556	556	0	0	0	0	0
5	3	IAT	565	556	554	544	0	0	0	0	0
6	6	IAT	655	566	655	545	0	0	0	0	0
7	9	IAT	565	666	555	555	0	0	0	0	0
8	12	IAT	666	666	666	666	0	0	0	0	0
9 Unsprayed			000	000	000	000	400	254	125	58	33
10 Unsprayed			000	000	000	000	263	117	75	88	21
LSD 5%							88	198	32	46	18

213 (m)

Effect of Stomp on vegetables

Treatment	l/ha		Tomato Visual Rating 3.12.80	Tomato Visual Rating 29.12.80	Tomato Dry Weight g/plant	Tomato % flowering
1 Stomp	3	IBT	000	000	41.7	42
2	6	IBT	000	000	46.3	60
3	9	IBT	010	000	33.9	50
4	12	IBT	010	111	42.8	52
5	3	IAT	010	010	36.3	18
6	6	IAT	110	100	34.1	30
7	9	IAT	221	222	13.3	0
8	12	IAT	221	220	29.0	6
9 Unsprayed			000	000	37.0	63
10 Unsprayed			000	000	45.2	77
	LSD	5%			13.5	24

Treatment	l/ha		Capsicum Visual Rating 3.12.80	Capsicum Visual Rating 29.12.80	Capsicum Dry Weight g/plant	Capsicum % flowering
1 Stomp	3	IBT	000	000	1.9	100
2	6	IBT	000	000	2.0	100
3	9	IBT	000	000	2.0	98
4	12	IBT	000	000	2.0	95
5	3	IAT	000	111	1.7	5
6	6	IAT	111	111	1.4	5
7	9	IAT	010	222	1.3	0
8	12	IAT	111	222	0.9	0
9 Unsprayed			000	000	2.0	98
10 Unsprayed			000	000	2.1	100
	LSD	5%			0.7	7

Treatment	l/ha		Egg Plant Visual Rating 3.12.80	Egg Plant Visual Rating 29.12.80	Egg Plant Dry Weight g/plant	Egg Plant % flowering
1 Stomp	3	IBT	000	000	4.6	36
2	6	IBT	001	000	4.7	43
3	9	IBT	111	000	3.0	27
4	12	IBT	111	111	2.7	33
5	3	IAT	111	010	3.9	12
6	6	IAT	211	100	2.7	5
7	9	IAT	222	111	2.0	0
8	12	IAT	222	222	1.5	0
9 Unsprayed			000	000	5.2	21
10 Unsprayed			000	000	4.9	41
	LSD	5%			0.9	24

IBT = immediately before transplanting
IAT = immediately after transplanting

Comments -

3 litres Stomp/ha has successfully controlled broad leafed weeds and grasses. Stomp must be applied before transplanting. Tomato and capsicum tolerated 12 l/ha. Maximum commercial application on egg plant is 6 litres/ha.