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Annual ryegrass toxicity research summary of experiment results.

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DEPARTMENT OF AGRICULTURE

WESTERN AUSTRALIA

ANNUAL RYEGRASS TOXICITY RESEARCH

SUMMARY OF EXPERIMENT RESULTS 1986

V. NIEMAN, A.G.P. BROWN, R. MADIN

CONTROL OF ARGENT APPLIED BY HERBICIDES

Experiments were set up to screen a range of herbicides which might give improved control of Anguina agrostis over the currently recommended paraquat. Two experiments examined Roundup, Fusilade and Sertin at two rates and two experiments screened eight herbicides at five rates from two x "label recommendation" to 0.99x. Standard treatment was paraquat at 550 ml.

Plots were 3 m x 30 m in the first two experiments and 3 x 5 m (per dilution) in the second. The herbicides were applied on 4/9, 17/9, 24/9, 1/10 and 9/10 (Zadoks stages 32 - 58). There were three replications with 54 nil control plots. Efficacy was measured as galls/m² recovered at maturity.

Table 1 and Table 2 show the results from two sites, Dumbleyung and Corrigin respectively. No analysis has yet been undertaken and variability is extreme.

Unless some form of covariance analysis using nil plots can be undertaken, no useful information can be obtained.

Table 3 shows results from a single replication of a trial comparing nine herbicides applied by log dilution sprayer. Only two rates have been processed so far: the highest and lowest*.

TABLE 3. Herbicide control of gall production
Galls/m² at maturity

HERBICIDE	1ST SPRAY (4/9)		2ND SPRAY (16/9)		3RD SPRAY (24/9)	
	*H	*L	H	L	H	L
Amitrole	67	63	108	556	82	261
Roundup	35	67	72	200	89	402
Simazine	90	90	127	149	340	626
2,4-D	130	976	67	91	462	211
Dalapon	-	-	262	200	265	94
Hoegrass	93	310	56	259	34	265
Sertin	12	89	42	27	82	44
Asulain	424	662	268	588	230	1016
Fusilade	12	95	15	99	173	73
\bar{X}	108	231	97	242	195	332

Nil Control \bar{X} 443

The only discernable trend was to decreased control on 24/9.

TABLE 2. Herbicides on gall production (galls/m²) at three application dates: Corrigin

TREATMENT	1st Spray (4/9)			2nd Spray (16/9)			3rd Spray (24/9)		
	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS
ROUNDUP .150 l/ha	106	278	384	76	258	334	96	258	354
ROUNDUP .300 l/ha	30	64	94	32	148	180	100	328	428
FUSILADE .125 l/ha	16	44	60	98	344	442	152	566	718
FUSILADE .250 l/ha	16	32	48	94	476	570	118	354	472
SERTIN .250 l/ha	4	30	34	116	518	634	255.3	730	985.3
SERTIN .500 l/ha	4	44	48	116	442	558	90	436	526
PARAQUAT .550 l/ha	200	790	990	60	254.3	314.3	54	306	360
ZADOK GROWTH SCALE		51			56			58	
CONTROL	NEMATODE GALLS 138.7			BACTERIAL GALLS 470.5			TOTAL GALLS 609.2		

TABLE 1. Herbicide on gall production (galls/m²) at five application dates: Dumbleying

TREATMENT	1st Spray (4/9)			2nd Spray (17/9)			3rd Spray (24/9)			4th Spray (1/10)			5th Spray (9/10)		
	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS	NEMATODE GALLS	BACTERIAL GALLS	TOTAL GALLS
ROUNDUP .150 l/ha	78.8	21.2	100	48	45.2	93.2	74.8	98.8	173.6	32	6.8	38.8	108	73.2	181.2
ROUNDUP .300 l/ha	37.2	22.8	60	50.8	56	106.8	400	121.2	521.2	12	5.2	17.2	102.8	73.2	176
FUSILADE .125 l/ha	41.2	17.2	58.4	34.8	70.8	105.6	81.2	33.2	114.4	20	121.2	141.2	394.8	197.2	592
FUSILADE .250 l/ha	5.2	12.0	17.2	126.8	21.2	148.0	108	8	116	90.8	48	138.8	838.8	161.2	1000
SERTIN .250 l/ha	13.2	8.0	21.2	132	33.2	165.2	128	25.2	153.2	60	32	92	9.2	18.8	28
SERTIN .500 l/ha	20	1.2	21.2	268	102.8	370.8	40	10.8	50.8	37.2	56	93.2	8.8	30.0	38.8
PARAQUAT .550 l/ha	92	54.8	146.8	77.2	17.2	94.4	98.8	24.0	122.8	14.8	10.8	25.6	21.2	48	69.2
ZADOK GROWTH SCALE		32			34			54			56			58	
CONTROL	NEMATODE GALLS 177.6			BACTERIAL GALLS 88.8			TOTAL GALLS 266.4								