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An investigation into the life history, methods of control, competition and dispersal of Cyperus esculentus L. (yellow nutgrass) with special reference to the highveld region of South Africa.

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APPENDIX TABLE 55: LOG. NO. OF MOUSEEAR PLANTS PER 4 QUADRATS (2 SQ. FT)

TREATMENT	REPL. I	REPL. II	REPL. III	TOTAL	MEAN
.2 lbs LINURON	1.690	1.580	1.602	4.872	1.6241
.1 lbs LINURON	2.274	2.127	1.820	6.221	2.070
Control	2.516	2.259	2.309	7.084	2.2947
TOTAL				18.177	1.9972

ANALYSIS OF VARIANCE

	DF	MEAN SQU.	F
TREATMENTS	2	0.24062	**
ERROR	6	0.00318	

APPENDIX TABLE 56 : INFLUENCE OF HERBICIDES ON MATERIALS IN TURF. RATINGS OF CONTROL OF WEEDS AND PHYTOTOXICITY IN TURF

TREATMENT	Repl.	10/13/61		12/1/61		11/2/62	
		Lean grass	Rot. grass	Lean grass	Rot. grass	% Cover Lean grass	% Cover Bahiagrass
DIRECTED 0.5 gal 2.75 lbs	1	6	8	3	4	5	5
	2	8	8	6	3	2	8
	3	6	6	3	2	4	6
TOTAL		20	22	6	5	11	17
DIRECTED 0.75 gals 5.62 lbs	1	9	9	6	9	6	2
	2	9	8	2	6	1	9
	3	9	8	2	6	3	9
TOTAL		27	25	6	17	9	20
MCPA - 1 gallon 4 lbs a.e (K Salt)	1	1	4	1	5	8	2
	2	2	3	1	8	6	4
	3	1	2	2	9	6	3
TOTAL		4	9	4	22	20	10
MCPA - 2 gals 8 lbs a.e (K Salt)	1	3	5	4	9	8	3
	2	2	4	5	9	7	3
	3	2	4	3	9	7	5
TOTAL		7	13	12	27	22	11
Linuron 2 lbs	1	5	7	3	6	7	3
	2	8	7	2	2	2	6
	3	5	2	4	2	4	6
TOTAL		18	16	9	8	13	15
Linuron 4 lbs	1	4	4	7	4	8	3
	2	8	6	9	2	4	6
	3	8	3	9	4	2	8
TOTAL		20	13	25	10	14	17
Monolinuron 2 lbs	1	4	9	1	4	6	4
	2	2	4	0	2	2	6
	3	2	5	0	2	4	6
TOTAL		8	18	1	8	12	16
Monolinuron 4 lbs	1	7	9	1	4	6	4
	2	8	9	0	3	2	8
	3	6	6	0	2	3	7
TOTAL		21	24	1	9	11	19
CONTROL	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
	3	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0

APPENDIX TABLE 97 : - INFLUENCE OF HERBICIDES ON NUTGRASS IN TURF.
NUMBER OF SURVIVING NUTGRASS PLANTS PER 20" x 20" FRAME.

TREATMENT		26/2/62					2/4/62				
		I	II	III	TOTAL	MEAN	I	II	III	TOTAL	MEAN
Dinoseb Dessogil 4 lbs	1	22	29	31	82		27	36	36	99	
	2	58	54	49	171		50	71	56	185	
	3	66	65	74	205		72	71	82	225	
					458	50.9				510	56.7
Dinoseb Dessogil 6 lbs	1	19	26	26	70		21	32	37	90	
	2	37	62	44	143		39	67	47	153	
	3	86	98	33	217		89	103	32	224	
					430	47.8				467	52.0
MCPA - 1 gal. (K salt) 4 lbs a.e	1	16	37	46	97		32	39	48	119	
	2	59	39	73	171		54	41	84	189	
	3	35	39	73	147		37	42	86	165	
					415	46.1				473	52.6
MCPA - 2 gals (K Salt) 8 lbs a.e	1	9	14	34	57		14	20	36	70	
	2	39	69	51	159		42	72	62	176	
	3	27	25	48	102		37	36	56	129	
					318	35.3				375	41.7
Linuron 2 lbs	1	27	48	48	123		49	62	62	140	
	2	69	54	41	164		71	66	49	186	
	3	28	32	49	109		35	56	51	123	
					396	44.0				449	49.9
Linuron 4 lbs	1	14	59	59	132		14	53	58	125	
	2	62	46	78	186		62	51	86	199	
	3	31	41	72	144		43	32	78	153	
					462	51.3				492	54.7
Monolinuron 2 lbs	1	84	24	36	144		40	34	39	113	
	2	68	64	44	176		76	68	81	225	
	3	34	48	29	111		37	56	43	136	
					431	47.9				474	52.7
Monolinuron 4 lbs	1	19	56	80	155		29	61	95	185	
	2	83	66	74	183		86	82	84	199	
	3	59	79	43	181		61	61	44	166	
					519	57.7				551	61.3
CONTROL	1	37	18	22	77		38	25	36	97	
	2	42	48	69	159		42	49	72	163	
	3	42			42					42	
					278	46.3				302	50.3

APPENDIX TABLE 58 : PRE- AND POST-TREATMENT NUTGRASS POPULATIONS
NUMBER OF PLANTS PER ¼ SQ.METRE QUADRAT.

TREATMENT	REPS.	PRE-TREATMENT COUNT 1	2	3	TOTAL	MEAN	POST-TREATMENT COUNT * 1	2	3	TOTAL	MEAN
15 lbs	1 1	61	85	83	229	76.3	41	14	21	76	25.3
	1 2	45	34	61	140	46.6	20	11	9	40	13.3
	1 3	66	82	74	202	67.3	16	39	7	62	20.7
TOTAL					571					178	
MEAN						63.4					19.3
25 lbs	2 1	25	94	81	181	60.3	10	13	19	42	14.0
	2 2	38	36	26	80	26.6	1	4	23	28	9.3
	2 3	3	118	46	227	75.6	8	28	18	54	18.0
TOTAL					488					124	
MEAN						54.2					13.8
35 lbs	3 1	100	68	52	220	73.3	6	2	12	20	10.0
	3 2	46	32	54	132	44.0	14	10	9	32	10.7
	3 3	86	84	93	263	87.6	24	12	16	52	17.0
TOTAL					615					114	
MEAN						68.5					12.6
CONTROL	4 1	61	80	58	199	66.3	90	29	12	131	43.7
	4 2	110	43	45	198	66.0	78	69	25	172	58.0
	4 3	63	93	39	193	64.3	20	21	24	65	30.7
	5 1	61	56	24	141	47.0	25	58	22	105	35.0
	5 2	63	96	39	198	66.0	18	56	27	101	33.7
	5 3	61	56	26	143	47.6	22	64	56	142	47.3
	6 1	62	84	85	231	77.0	38	84	50	172	57.3
	6 2	80	58	30	168	56.0	42	80	50	172	57.3
	6 3	82	64	24	170	56.6	43	48	24	115	38.3
	7 1	82	104	42	228	76.0	61	15	28	104	34.6
	7 2	65	55	42	162	54.0					
	7 3	87	58	42	187	62.3				1847	615.6
TOTAL					2464						
MEAN						82.1					20.5

* Refers only to Nutgrass shoots plants.

APPENDIX TABLE 59 : POST-TREATMENT RATING OF NUTGRASS CONTROL AND PHYTOTOXICITY TO TURF - AFTER 35 DAYS

TREATMENT	REPL.	NUTGRASS CONTROL	TURF PHYTOTOXICITY
15 lbs	1	4	2
	2	9	7
	3	9	8
TOTAL		22	17
MEAN		7.3	5.6
25 lbs	1	9	8
	2	8	9
	3	8	8
TOTAL		25	25
MEAN		8.3	8
35 lbs	1	9	10
	2	8	10
	3	10	10
TOTAL		27	30
MEAN		9.0	10
CONTROL	1	0	0
	2	0	0
	3	0	0
	4	0	0
	5	0	0
	6	0	0
	7	0	0
	8	0	0
	9	0	0
TOTAL		0	0
MEAN		0	0

APPENDIX TABLE 60 : POST-TREATMENT ASSESSMENT OF NUTGRASS REGROWTH AND PHYTOTOXICITY TO TURF - AFTER 49 WEEKS

TREATMENT	REPL.	NUTGRASS REGROWTH	TURF PHYTOTOXICITY
15 lbs	1	10	0
	2	8	2
	3	7	2
TOTAL		25	4
MEAN		8.3	1.3
25 lbs	1	9	0
	2	9	0
	3	7	5
TOTAL		25	5
MEAN		8.3	2.0
35 lbs	1	8	5
	2	10	3
	3	8	4
TOTAL		26	12
MEAN		8.6	4.0
CONTROL	1	10	0
	2	9	0
	3	10	0
	4	10	0
	5	10	0
	6	7	0
	7	10	0
	8	9	0
	9	10	0
TOTAL		85	0
MEAN		9.4	0

APPENDIX TABLE 60 . CONTROL OF NUTGRASS IN TURF WITH EPTAM

TREATMENT	NUMBER OF NUTGRASS					WEIGHT OF NUTGRASS					TURF GREEN GRASS WEIGHT				
	1	2	3	4	TOTAL	1	2	3	4	TOTAL	1	2	3	4	TOTAL
½ oz	13	7	0	0	20	14.5	4.5	0	0	19.0	41.2	6.0	2.6	4.4	54.2
¼ oz	0	0	0	0	0	0	0	0	0	0	14.2	2.9	4.9	4.6	26.6
1 oz	1	0	0	0	1	0.3	0	0	0	0.3	6.2	19.7	2.7	4.0	32.6
CONTROL	73	44	21	55	193	180	69	87.5	93.5	370.0	43.4	50.4	18.2	5.2	117.2

APPENDIX TABLE 61: EMERGENCE OF NUTGRASS IN SOILS SAMPLED IN DIFFERENT GRASSLAND COMMUNITIES.

I. NUMBER OF NUTGRASS PLANTS PER POT

DATE OF RECORDING	TRACHYPOGON			THEMED A			ARABLE			ERAGROSTIS LEY		
	1	2	3	1	2	3	1	2	3	1	2	3
25/1/62	1	1	-	1	1	-	4	1	-	-	-	-
TOTAL		(2)			(2)			(8)			(1)	
26/1/62	2	3	-	2	4	3	7	3	3	6	1	0
TOTAL		(5)			(9)			(13)			(6)	
28/1/62	3	12	8	6	10	10	16	14	20	8	6	4
TOTAL		(23)			(26)			(49)			(17)	
31/1/62	15	37	20	16	23	24	24	25	38	16	38	7
TOTAL		(72)			(63)			(80)			(60)	

II. NUMBER OF INFLORESCENCES PER POT

12/3/62	9	3	5	9	5	9	7	8	6	3	-	-
TOTAL		(17)			(23)			(21)			(3)	

III. GREEN HERBAGE WEIGHT NUTGRASS - GRAMS/POT.

7/4/62	10.6	3.6	4.2	11.2	3.5	2.7	4.8	2.5	4.9	6.2	5.9	12.6
TOTAL		18.4			17.4			12.2			28.7	

ANALYSIS OF VARIANCE

GREEN HERBAGE WEIGHTS. GRAMS/POT.

	DF	MEANS SQ.	F
TREATMENTS	3	15.90	N.S
ERROR	8	12.31	

APPENDIX TABLE 82 : SPROUTED TUBERS. AIR-DRY WEIGHTS AND NUMBERS OF NUTGRASS FRACTIONS.

TREATMENT		STEM		TUBERS		ROOTS
		NUMBER	WEIGHT	WEIGHT	NUMBER	WEIGHT
ARABLE	1	6	2.24	3.70	46	7.6
	2	7	2.01	4.1	36	4.7
	3	5	2.85	2.45	24	8.9
TOTAL			7.10	10.25	106	
MEAN				3.42		
TRACHYPOGON						
	1	5	2.90	3.5	35	6.9
	2	5	2.68	3.3	36	7.9
	3	5	3.20	4.2	50	6.6
TOTAL			8.75	11.0	121	
MEAN				3.7		
ERAGROSTIS						
	1	6	2.50	2.6	26	8.7
	2	5	3.07	2.6	32	11.5
	3	6	2.66	2.8	30	8.1
TOTAL			8.23	7.7	88	
MEAN				2.6		

ANALYSIS OF VARIANCE

1. AIR-DRY WEIGHT OF NUTGRASS STEMS

	DF	MEAN SQ.	F
SOILS	2	0.2372	
ERROR	6	0.1148	

2. AIR-DRY WEIGHT OF NUTGRASS TUBERS

	DF	MEAN SQ.	F
SOILS	2	1.0077	
ERROR	6	0.3136	

3. NUMBER OF TUBERS

	DF	MEAN SQ.	F
SOILS	2	91	
ERROR	6	67	

4. AIR-DRY WEIGHT OF NUTGRASS ROOTS AND TUBERS.

	DF	MEAN SQ.	F
SOILS	2	5.63	
ERROR	6	2.73	

APPENDIX TABLE 63 : UNSPROUTED TUBERS. AIR-DRY WEIGHT AND NUMBERS OF NUTGRASS FRACTIONS.

TREATMENT	STEM WEIGHT	STEM WEIGHT	ROOT WEIGHT	TUBER NUMBER	FOREIGN SPECIES	
					GRASSES	BROADLEAF
ARABLE : 1	4	2.2	1.8	5	4	0
2	2	1.2	0.55	3	9	0
3	3	1.15	0.8	5	7	0
TOTAL	9	4.55	3.15	14	20	0
MEAN	3	1.5	1.05	4.7	6.7	0
TRACHYPOGON 1	5	0.93	0.65	10	0	0
2	6	0.65	0.75	7	0	0
3	6	0.5	0.3	7	0	0
TOTAL	17	2.08	1.60	24	0	0
MEAN	5.7	0.69	0.53	8		
ERAGROSTIS 1	7	2.0	1.5	7	13	6
2	8	1.8	1.2	9	18	10
3	6	1.45	1.55	11	15	6
TOTAL	21	5.25	4.25	26	44	22
MEAN	7	1.75	1.42	8.7	14.7	7.3

ANALYSIS OF VARIANCE

1. AIRDRY WEIGHT OF NUTGRASS STEMS

	DF	MEAN SQ.	F
SOILS	2	0.9244	*
ERROR	6	0.1586	

2. AIRDRY ROOT WEIGHTS

	DF	MEAN SQ.	F
SOILS	2	0.5905	
ERROR	6	0.1747	

3. TUBER WEIGHTS

	DF	MEAN SQ.	F
SOILS	2	0.1119	
ERROR	6	0.0566	

APPENDIX TABLE 54 : WEIGHTS AND NUMBER OF NUTGRASS STEMS

TREATMENT	REPL.	SPROUTED		UNSPROUTED		NUMBER OF FOREIGN SPECIES
		WEIGHT	NUMBER	WEIGHT	NUMBER	
1. ARABLE	1	4.6	6	6.6	3	
	2	4.5	1	0.1	3	
	3	10.6	1	5.1	2	
2. ERAGROSTIS	1	4.0	2	0.6	29	
	2	4.5	-	-	14	
	3	8.1	2	0.5	20	
3. TRACHYPOGON	1	5.0	2	4.5	-	
	2	6.5	3	3.2	-	
	3	16.3	3	4.2	-	

ANALYSIS OF VARIANCE

GREEN WEIGHTS SPROUTED

	DF	MEAN SQ	F
Soil type	2	11.14	
Error	6	18.28	

GREEN WEIGHTS UNSPROUTED

	DF	MEAN SQ	F
Soil type	2	13.88	
Error	6	4.23	

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