A P P E N D I X C

TABLE 5.1 The influence of a gradient of a simulated sulphate saline mine water on the seedling top growth of maize **(Figure 5.1)**

Maize Hybrid	Treatment[1.]			Dry mass of top growth/ 10 plants	Relative Growth
		EC_{iw}[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}	g	%
Maize SNK 2340	1.	97	226	2.05	100
	2.	280	1500	1.94	95
	3.	327	2000	1.88	92
	4.	349	2150	1.90	93
	5.	368	2300	1.59**	78**
	6.	386	2500	1.52**	74**
	7.	403	3000	1.89	92
	8.	453	4000	1.99	97
	9.	492	5000	1.66**	81**
	10.	525	6000	1.80	88
	11.	387	2500	1.62**	79**
	12.	466	3000	1.77	87
	13.	623	4000	1.59**	78**
	14.	780	5000	1.38**	67**
c.v. 13.3%					
Maize CRN 4403	1.	97	226	2.29	100
	2.	280	1500	2.34	102
	3.	327	2000	2.19	96
	4.	349	2150	2.42	106
	5.	368	2300	2.06*	90*
	6.	386	2500	2.30	101
	7.	403	3000	2.44	107
	8.	453	4000	2.34	102
	9.	492	5000	2.16	94
	11.	387	2500	2.61**	114 **
	12.	466	3000	2.52 *	110 *
	13.	623	4000	2.08 *	91 *
	14.	780	5000	2.09	92
c.v. 7.6%				LSD_F 0.24	12

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.

TABLE 5.2 The influence of a gradient of a simulated NaCl-dominated mine water on the top growth of maize **seedlings (Figure 5.1)**

Hybrid	Treatment				Dry mass of top growth/ 10 plants g	Relative Growth %
	EC	Na	Cl	SO_4		
	mS m^{-1}	mmol L^{-1}				
Maize SNK 2340	1. 241	0	0	12	3.39	100
	2. 308	10	10	12	3.28	97
	3. 396	20	16	13.8	2.85**	84**
	4. 581	40	29	17.5	2.76**	81**
	5. 678	50	35	19.3	2.60**	77**
	6. 770	60	42	21.1	2.58**	76**
	7. 958	80	54	24.8	2.60	77**
c.v. 8.10%					LSD_F 0.34	

** Significant difference from control ($P < 0.05$).

TABLE 5.3 **The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the seedling top growth of** sorghum **seedlings (Figure 5.1)**

Cultivars	Treatment[1.]			Dry mass of top growth/ 10 plants	Relative Growth
		EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}	g	%
Sorghum PAN 888	1.	97	226	1.39	100
	2.	280	1500	1.33	96
	3.	327	2000	1.26	91
	4.	349	2150	1.29	93
	5.	368	2300	1.03**	74**
	6.	386	2500	1.07**	77**
	7.	403	3000	1.15**	83**
	8.	453	4000	1.30	94
	9.	492	5000	1.05**	76**
	11.	387	2500	1.26	91
	12.	466	3000	1.20	86
	13.	623	4000	1.09**	79 **
	14.	780	5000	0.95**	68 **
c.v. 15.2%				LSD_F 0.22	15.8

TABLE 5.4 **The influence of a gradient of a simulated NaCl-dominated mine water on the seedling top growth of** sorghum **PAN 888 (Figure 5.1)**

Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
		EC mS m^{-1}	Na	Cl	SO_4		
			mmol L^{-1}				
Sorghum PAN 888	1.	241	0	0	12	1.34	100
	2.	308	10	10	12	1.30	97
	3.	396	20	16	13.8	1.14**	85**
	4.	581	40	29	17.5	1.13**	84**
	5.	678	50	35	19.3	0.91**	68**
	6.	770	60	42	21.1	0.88**	66**
	7.	958	80	54	24.8	0.70**	52**
c.v. 12.4 %						LSD_F 0.19	14

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1.Treatment 1-9 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3. Total sulphate in suspension.

TABLE 5.5 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the seedling top growth of pearl millet **(Figure 5.1)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Pearl millet SA Standard (babala)	1. 97	226	1.09	100
	2. 280	1500	1.05	96
	3. 327	2000	0.91	83
	4. 349	2150	1.03	95
	5. 368	2300	0.90	82
	6. 386	2500	0.93	85
	7. 403	3000	0.92	85
	8. 453	4000	0.96	88
	9. 492	5000	1.13	103
	11. 387	2500	0.87**	80**
	12. 466	3000	0.98	89
	13. 623	4000	0.81**	75**
	14. 780	5000	0.64**	59**
c.v. 12.6 %			LSD_F 0.21	15.8

TABLE 5.6 The influence of a gradient of simulated NaCl-domionated mine water on the seedling top growth of pearl millet **(Figure 5.1)**

Cultivar	Simulated sodic-saline mine water				Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4		
		mmol L^{-1}				
Pearl millet SA Standard	1. 241	0	0	12	1.04	100
	2. 308	10	10	12	0.98	94
	3. 396	20	16	13.8	0.88**	85**
	4. 581	40	29	17.5	0.70**	67**
	5. 678	50	35	19.3	0.45**	44**
	6. 770	60	42	21.1	0.52**	50**
	7. 958	80	54	24.8	0.39**	38**
c.v. 10.3 %					LSD_F 0.10	9.6

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-9 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3.Total sulphate in suspension.

TABLE 5.7 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the top growth of soybean **seedlings (Figure 5.2)**

Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Soybean Ibis	1. 97	226	2.17	100
	2. 280	1500	1.64 **	75**
	3. 327	2000	1.93	89
	4. 349	2150	1.79 *	82*
	5. 368	2300	1.83	84
	6. 386	2500	1.83	84
	7. 403	3000	1.89	87
	8. 453	4000	2.17	100
	9. 492	5000	2.05	94
	10. 525	6000	1.95	90
	11. 387	2500	1.81	83
	12. 466	3000	2.02	93
	13. 623	4000	1.66 **	77**
	14. 780	5000	1.73 *	80*

c.v. 17.0 %

TABLE 5.8 The influence of a gradient of a simulated NaCl-dominated mine water on the top growth of soybean **seedlings (Figure 5.2)**

Cultivar	Treatment				Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4		
		mmol L^{-1}				
Soybean Ibis	1. 241	0	0	12	3.53	100
	2. 308	10	10	12	3.43	97
	3. 396	20	16	13.8	3.09	88
	4. 581	40	29	17.5	2.88 *	82*
	5. 678	50	35	19.3	2.46 **	70**
	6. 770	60	42	21.1	2.79 *	79*
	7. 958	80	54	24.8	2.55 **	72**

c.v. 19.3 %

LDS_F 0.75 21

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.

TABLE 5.9 The influence of a gradient of a simulated sulphate mine water on the top growth of cowpea **Dr Saunders seedlings (Figure 4.7, p. 117)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Cowpea Dr Saunders	1. 97	226	2.31	100
	2. 280	1500	2.38	103
	3. 327	2000	2.37	103
	4. 349	2150	2.36	102
	5. 368	2300	2.27	98
	6. 386	2500	2.03	88
	7. 403	3000	2.36	103
	8. 453	4000	2.48	107
	9. 492	5000	2.04	88
	10. 525	6000	2.25	98
	11. 387	2500	2.56	111
	12. 466	3000	2.08	90
	13. 623	4000	1.81	79
	14. 780	5000	1.83	79

c.v. 18.9 %

TABLE 5.10 The influence of a gradient of simulated NaCl-dominated mine water on the top growth of cowpea **seedlings (Figure 5.2)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4			
		mmol L^{-1}					
Cowpea Dr Saunders	1. 241	0.02	0.02	12		3.62	100
	2. 308	10	10	12		3.53	97
	3. 396	20	16	13.8		3.18**	88**
	4. 581	40	29	17.5		2.63**	76**
	5. 678	50	35	19.3		2.59**	72**
	6. 770	60	42	21.1		2.46**	68**
	7. 958	80	54	24.8		1.95**	54**

c.v. 7.8 % LSD_F 0.32

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3.Total sulphate in suspension.

TABLE 5.11 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the top growth of drybean **seedlings (Figure 5.2)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Drybean PAN 122	1. 97	226	1.86	100
	2. 280	1500	1.94	104
	3. 327	2000	1.78	96
	4. 349	2150	1.68	91
	5. 368	2300	2.00	108
	6. 386	2500	1.84	99
	7. 403	3000	1.75	94
	8. 453	4000	1.76	95
	9. 492	5000	1.86	100
	1 0. 525	6000	1.38 *	74*
	11. 387	2500	1.46	79
	12. 466	3000	1.58	85
	13. 623	4000	1.28 **	69**
	14. 780	5000	1.31 **	70**

c.v. 21.1 %

TABLE 5.12 The influence of a gradient of a simulated NaCl-dominated mine water on the top growth of drybean **seedlings (Figure 5.2)**

Crop Cultivar	Treatment				Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4		
		mmol L^{-1}				
Drybean PAN 127	1. 241	0.02	0.02	12	3.98	100
	2. 308	10	10	12	3.43	86
	3. 396	20	16	13.8	3.26 *	82*
	4. 581	40	29	17.5	3.20**	80**
	5. 678	50	35	19.3	2.74**	69**
	6. 770	60	42	21.1	2.58**	65**
	7. 958	80	54	24.8	2.62**	66**
c.v. 15.9 %					LSD_F 0.72	18

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3. Total sulphate in suspension.

TABLE 5.13 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the top growth of sunflower **seedlings (Figure 5.1)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Sunflower SNK 43	1. 97	226	2.50	100
	2. 280	1500	2.91 *	116*
	3. 327	2000	3.12	125
	4. 349	2150	2.74	106
	5. 368	2300	2.68	107
	6. 386	2500	2.66	106
	7. 403	3000	2.61	104
	8. 453	4000	2.52	101
	9. 492	5000	2.47	99
	11. 387	2500	2.57	1.03
	12. 466	3000	2.58	1.03
	13. 623	4000	1.84**	74**
	14. 780	5000	1.64*	66*

c.v. 13.1%

TABLE 5.14 The influence of a gradient of simulated NaCl-dominated mine water on the top growth of sunflower **seedlings (Figure 5.1)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4			
		mmol L^{-1}					
Sunflower SNK 43	1. 241	0.02	0.02	12		2.45	100
	2. 308	10	10	12		2.55	104
	3. 396	20	16	13.8		2.28	93
	4. 581	40	29	17.5		2.01**	82**
	5. 678	50	35	19.3		1.83**	75**
	6. 770	60	42	21.1		1.93**	79**
	7. 958	80	54	24.8		1.64**	67**

c.v. 7.2%

LSD_F 0.22

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-9 salinity with mainly $CaSO_4$; 10-13 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3. Total sulphate in suspension.

TABLE 5.15 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the seedling growth of wheat **(Figure 5.3)**

Cultivars	Treatment[1.]			Dry mass of top growth/ 10 plants g	Relative Growth %
		EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Wheat Inia	1.	97	226	0.55	100
	2.	263	1500	0.55	100
	3.	330	2000	0.52	95
	4.	332	2150	0.51	94
	5.	338	2300	0.50	92*
	6.	349	2500	0.55	100
	7.	364	3000	0.48	88**
	8.	398	4000	0.53	97
	9.	473	5000	0.47	86**
	10.	507	6000	0.52	95
	11.	352	2500	0.52	94
	12.	424	3000	0.50	91*
	13.	572	4000	0.49	90**
	14.	782	5000	0.43	79**

c.v. 6.8%

TABLE 5.16 The influence of a gradient of simulated NaCl-dominated mine water on the seedling top growth of wheat **(Figure 5.3)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
		EC mS m	Na	Cl	$SO_4^{3.}$		
			mmol L^{-1}				
Wheat Inia	1.	168	0.02	0.02	12	0.47	100
	2.	286	10	10	12	0.47	99
	3.	382	20	16	13.8	0.49	104
	4.	565	40	29	17.5	0.40**	85**
	5.	664	50	35	19.3	0.44	94
	6.	756	60	42	21.1	0.44	94
	7.	934	80	54	24.8	0.35**	75**

c.v. 10.3% LSD_F 0.06 12.7

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3. Total sulphate in suspension.

TABLE 5.17 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the top growth of rye **seedlings (Figure 5.3)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Rye SSR 1	1. 97	226	0.63	100
	2. 280	1500	0.65	103
	3. 327	2000	0.57	90
	4. 349	2150	0.54	86
	5. 368	2300	0.57	91
	6. 386	2500	0.55	87
	7. 403	3000	0.53	84
	8. 453	4000	0.52	83
	9. 492	5000	0.60	95
	10. 525	6000	0.48 *	76*
	11. 387	2500	0.52	82
	12. 466	3000	0.41**	65**
	13. 623	4000	0.54	85
	14. 780	5000	0.38**	60**

c.v. 23.5 %

TABLE 5.18 The influence of a gradient of simulated NaCl-dominated mine water on the seedling top growth of rye **(Figure 5.3)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4			
		mmol L^{-1}					
Rye SSR 1	1. 228	0.02	0.02	12		0.67	100
	2. 336	10	10	12		0.70	105
	3. 434	20	16	13.8		0.67	100
	4. 610	40	29	17.5		0.58 *	88*
	5. 694	50	35	19.3		0.50**	75**
	6. 780	60	42	21.1		0.45**	68**
	7. 946	80	54	24.8		0.47**	71**
c.v. 9.9%					LSD_F	0.08	12

* Tendency to differ from control (Treatment 1) ($P < 0.1$).
** Significant difference from control ($P < 0.05$).

1. Treatments 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.
4. Did not germinate very well. possibly due to the age of the seed - high variation.

TABLE 5.19 The influence of a gradient of a simulated $CaSO_4$-dominated saline mine water on the seedling top growth of triticale **(Figure 5.4)**

Crop Cultivar	Treatment[1.]			Dry mass of top growth/ 10 plants g	Relative Growth %
		EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Triticale Cloc 1[4.]	1.	97	226	0.34	100
	2.	280	1500	0.46	136
	3.	327	2000	0.33	97
	4.	349	2150	0.27	80
	5.	368	2300	0.35	102
	6.	386	2500	0.29	87
	7.	403	3000	0.29	84
	8.	453	4000	0.36	107
	9.	492	5000	0.32	95
	10.	525	6000	0.30	88
	11.	387	2500	0.36	105
	12.	466	3000	0.18*	53*
	13.	623	4000	0.24	71
	14.	780	5000	0.27	79
c.v. 36.8 %					
Triticale Rex	1.	97	226	0.42	100
	2.	280	1500	0.41	100
	3.	327	2000	0.38	92
	4.	349	2150	0.35	85
	5.	368	2300	0.33	79
	6.	386	2500	0.37	88
	7.	403	3000	0.39	93
	8.	453	4000	0.40	95
	9.	492	5000	0.42	100
	10.	525	6000	0.37	90
	11.	387	2500	0.34	82
	12.	466	3000	0.36	88
	13.	623	4000	0.36	86
	14.	780	5000	0.32 *	77*
c.v. 20.0 %					

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.
4. High variation probably due to age of seed. Numbers of plants per container varied.

TABLE 5.20 **The influence of a gradient of a simulated NaCl-dominated mine water on the seedling top growth of** triticale **(Figure 5.4)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
		EC mS m^{-1}	Na	Cl	SO_4		
			mmol L^{-1}				
Triticale Cloc 1	1.	168	0.02	0.02	12	0.41	100
	2.	286	10	10	12	0.35	86
	3.	382	20	16	13.8	0.40	96
	4.	565	40	29	17.5	0.37	90
	5.	664	50	35	19.3	0.39	94
	6.	756	60	42	21.1	0.34	83
	7.	934	80	54	24.8	0.34	83
c.v. 16.1%							
Triticale Rex	1.	168	0.02	0.02	12	0.64	100
	2.	286	10	10	12	0.70	110
	3.	382	20	16	13.8	0.50	78**
	4.	565	40	29	17.5	0.59	92
	5.	664	50	35	19.3	0.60	93
	6.	756	60	42	21.1	0.55	85**
	7.	934	80	54	24.8	0.43	68**
c.v. 9.9%						LSD_F 0.08	12.5

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. EC electrical conductance measured in supernatant of treatment solutions.

TABLE 5.21 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the seedling top growth of barley **(Figure 5.3)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Barley Stirling	1. 97	226	0.79	100
	2. 280	1500	0.85	107
	3. 327	2000	0.75	95
	4. 349	2150	0.79	99
	5. 368	2300	0.71 *	90*
	6. 386	2500	0.76	95
	7. 403	3000	0.72	91
	8. 453	4000	0.77	97
	9. 492	5000	0.79	99
	10. 525	6000	0.74	94
	11. 387	2500	0.76	96
	12. 466	3000	0.73	93
	13. 623	4000	0.73	92
	14. 780	5000	0.70 *	89*

c.v. 8.7%

TABLE 5.22 The influence of a gradient of a simulated NaCl-dominated mine water on the seedling top growth of barley **(Figure 5.3)**

Crop Cultivar	Treatment				Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4		
		mmol L^{-1}				
Barley Stirling	1. 168	0.02	0.02	12	0.66	100
	2. 286	10	10	12	0.74**	112**
	3. 382	20	16	13.8	0.77	116
	4. 565	40	29	17.5	0.68	103
	5. 664	50	35	19.3	0.63	96
	6. 756	60	42	21.1	0.62	94
	7. 934	80	54	24.8	0.56**	85**
c.v. 10.6%					LSD_F 0.10	15

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.

2. EC measured in micro-filtered supernatant of treatment solutions.

3. Total sulphate in suspension.

TABLE 5.23 The influence of a gradient of a simulated $CaSO_4$-dominated saline mine water on the seedling top growth of oats **(Figure 5.3)**

Cultivars	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Oats Overberg	1. 97	226	0.47	100
	2. 280	1500	0.46	99
	3. 327	2000	0.41 *	88 *
	4. 349	2150	0.43	91
	5. 368	2300	0.45	96
	6. 386	2500	0.38 **	88 **
	7. 403	3000	0.41 *	87 **
	8. 453	4000	0.45 *	96 *
	9. 492	5000	0.39 **	84 **
	10. 525	6000	0.37 **	78 **
	11. 387	2500	0.45	95
	12. 466	3000	0.39 **	82**
	13. 623	4000	0.40 **	86**
	14. 780	5000	0.38 **	82**

c.v. 10.4 %

TABLE 5.24 The influence of a gradient of a simulated NaCl-dominated mine water on the seedling top growth of oats **(Figure 5.3)**

Crop Cultivar	Treatment				Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	$SO_4^{3.}$		
		mmol L^{-1}				
Oats Overberg	1. 168	0.02	0.02	12	0.64	100
	2. 286	10	10	12	0.61	95
	3. 382	20	16	13.8	0.49**	76**
	4. 565	40	29	17.5	0.51**	80**
	5. 664	50	35	19.3	0.40**	63**
	6. 756	60	42	21.1	0.34**	53**
	7. 934	80	54	24.8	0.34**	53**

c.v. 13.2 % LSD_F 0.09 14

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatments 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC electrical conductance measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.

TABLE 5.25 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the seedling top growth of annual ryegrass **cultivars (Figure 5.4)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Annual Ryegrass Midmar	1. 97	226	0.06	100
	2. 280	1500	0.04*	76*
	3. 327	2000	0.04	80
	4. 349	2150	0.05	95
	5. 368	2300	0.06	108
	6. 386	2500	0.05	91
	7. 403	3000	0.07**	131**
	8. 453	4000	0.06	109
	9. 492	5000	0.06	107
	10. 525	6000	0.06	109
	11. 387	2500	0.06	111
	12. 466	3000	0.05	84
	13. 623	4000	0.06	102
	14. 780	5000	0.04	81
c.v. 18.5%				
Annual Ryegrass Dargle	1. 97	226	0.04	100
	2. 280	1500	0.04	99
	3. 327	2000	0.05	111
	4. 349	2150	0.06	131
	5. 368	2300	0.06*	147*
	6. 386	2500	0.07**	169**
	7. 403	3000	0.07**	154**
	8. 453	4000	0.05	116
	9. 492	5000	0.06	131
	10. 525	6000	0.05	122
	11. 387	2500	0.07**	159**
	12. 466	3000	0.07**	156**
	13. 623	4000	0.05	124
	14. 780	5000	0.06**	150*
c.v. 23.8 %				

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC electrical conductance measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.

TABLE 5.26 **The influence of a gradient of a simulated NaCl-dominated mine water on the seedling top growth of** annual ryegrass **(Figure 5.4)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4			
		mmol L^{-1}					
Annual Ryegrass Midmar	1. 168	0.02	0.02	12		0.13	100
	2. 286	10	10	12		0.12	97
	3. 382	20	16	13.8		0.12	93
	4. 565	40	29	17.5		0.09**	70**
	5. 664	50	35	19.3		0.09**	70**
	6. 756	60	42	21.1		0.10**	77**
	7. 934	80	54	24.8		0.06**	50**

c.v. 15.2 %

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

TABLE 5.27 The influence of a gradient of a simulated $CaSO_4$-dominated mine water on the seedling top growth of lucerne **(Figure 5.2)**

Crop Cultivar	Treatment[1.]		Dry mass of top growth/ 10 plants g	Relative Growth %
	EC[2.] mS m^{-1}	Sulphate[3.] mg L^{-1}		
Lucerne PAN 4860	1. 97	226	0.23	100
	2. 280	1500	0.22	93
	3. 327	2000	0.21	90
	4. 349	2150	0.22	93
	5. 368	2300	0.19**	82**
	6. 386	2500	0.19**	80**
	7. 403	3000	0.18**	76**
	8. 453	4000	0.21	89
	9. 492	5000	0.21	89
	10. 525	6000	0.18**	78**
	11. 387	2500	0.21	91
	12. 466	3000	0.19**	81**
	13. 623	4000	0.18**	78**
	14. 780	5000	0.16**	67**

c.v. 11.8 %

TABLE 5.28 The influence of a gradient of simulated NaCl-dominated mine water on the seedling top growth of lucerne **(Figure 5.2)**

Crop Cultivar	Treatment					Dry mass of top growth/ 10 plants g	Relative Growth %
	EC mS m^{-1}	Na	Cl	SO_4			
		mmol L^{-1}					
Lucerne PAN 4860	1. 168	0.02	0.02	12		0.29	100
	2. 286	10	10	12		0.24**	82**
	3. 372	20	16	13.8		0.23**	79**
	4. 565	40	29	17.5		0.24**	84**
	5. 664	50	35	19.3		0.21**	72**
	6. 756	60	42	21.1		0.17**	59**
	7. 934	80	54	24.8		0.19**	66**
					LSD_F	0.03	10

c.v. 9.8%

* Tendency to differ from control (Treatment 1) ($P < 0.1$).

** Significant difference from control ($P < 0.05$).

1. Treatment 1-10 salinity with mainly $CaSO_4$; 11-14 with added Na_2SO_4.
2. EC electrical conductance measured in micro-filtered supernatant of treatment solutions.
3. Total sulphate in suspension.