

APPENDIX A

Summary of the effects of temperature, salinity, light, and seed age on germination, seedling mortality during the first 6 months from germination, and the soil characteristics of naturally occurring *Frankenia* populations. Table 1 is the ‘KEY’ to symbols used in Tables 2 and 3.

Treatment	Explanation	‘*’	‘**’	‘***’	Other
Light requirement	‘RLG’ is the relative light requirement index for germination. ‘1’ indicates light is essential for germination, ‘0’ indicates that light is not necessary for germination.	<0.25 RLG	0.25 – 0.79 RLG	>0.8	
Seedling mortality	The percentage of seedlings that germinated in soil, still alive at 6 months.	<50%	50 – 80%	>80%	
Salinity	Measurement of the percentage of seeds that germinated over 28 days per salinity level.	> 10% and <45%	> 45% and < 80%	>80%	‘neg’ is <10%
Gypsum content (%)	Note that no species had gypsum levels between 1 and 6%.	0-1		>6	‘nil’ indicates no gypsum recorded
CO₃	Carbonate measured as the degree of effervescence in HCl.	Low carbonate	Medium carbonate	High carbonate	‘nil’ indicates no carbonate recorded
EC	Electrical conductivity – measurement of salinity levels	<2 dS/m	>2 and <5 dS/m	>5 dS/m	
pH	Measurement of the degree of alkalinity	< pH 8	> pH 8 and < pH8.5	> pH 8.5	
CEC	Cation exchange capacity	<25 cmol(+)/kg	>25 and <50 cmol(+)/kg	>50 cmol(+)/kg	
ESP	Exchangeable sodium percentage - measurement of sodicity	<25%	>25% and <50%	>50%	
Seed 7 yrs	Indicates percentage of 7-year old seeds that germinated.		50 to 70%	>70%	
Temperature	Measured as the percentage of seeds that germinated over 28 days per temperature.	>10% and <50%	>50% and <80%	>80%	‘neg’ is <10%

Table 1. Key to Tables 2 and 3.

Species	Seed mass	Temp 17°C	Temp 23°C	Temp 29°C	Light requirement	7 year old seed	Seedling mortality	CO ₃	Gypsum
<i>F. cordata</i>	L	***	***	***	***			nil	nil
<i>F. planifolia</i>	L	***	***	***		**	**	nil	nil
<i>F. eremophila</i>	L	***	***	**	*		***	***	*
<i>F. serpyllifolia</i>	L	***	***	**	**	**	***	*	*
<i>F. gracilis</i>	L	***	***	**	**		*	nil	nil
<i>F. sessilis</i>	L	***	***	**	***		**	**	nil
<i>F. tetrapetala</i>	L	***	***	*	***		*		
<i>F. setosa</i>	L	***	**	*	*		**		
<i>F. interioris</i>	L	**	***	**	**		**		
<i>F. latior</i>	L				***		**	*	*
<i>F. connata</i>	L					**		nil	nil
<i>F. plicata</i>	L							nil	nil
<i>F. fecunda</i>	S	***	**	**	***		***		
<i>F. foliosa</i>	S	***	***	**	***	***	**	*	***
<i>F. cinerea</i>	S	***	***	**	**		*		
<i>F. pauciflora</i> var. <i>fruticulosa</i>	S	***	**	*	**		**	***	nil
<i>F. confusa</i>	S	***	*	neg	***		***		
<i>F. laxiflora</i>	S	**	**	*	***				
<i>F. magnifica</i>	S	**	*	*	***				
<i>F. pauciflora</i> var. <i>pauciflora</i>	S	**	*	neg	***		*		
<i>F. irregularis</i>	S				***		*		
<i>F. pauciflora</i> var. <i>gunnii</i>	S							***	nil
<i>F. subteres</i>	S							**	nil

Table 2. Effect of temperature, light, and seed age on germination, seedling mortality over the first 6 months post germination, and the carbonate and gypsum content of soil associated with naturally occurring *Frankenia* populations. ‘L’ indicates larger-seeded species, ‘S’ indicates smaller-seeded species. (See Table 1 for key to symbols.)

Species	Seed mass	Salinity 0%	Salinity 10%	Salinity 20%	Salinity 30%	pH	EC (saline)	Sodic	CEC ratios
<i>F. cordata</i>	L	***	***	*	*	***	*	**	*
<i>F. planifolia</i>	L					*	*	*	*
<i>F. eremophila</i>	L					**	**	**	**
<i>F. serpyllifolia</i>	L	***	***	**	*	**	**	**	**
<i>F. gracilis</i>	L					**	*	*	*
<i>F. sessilis</i>	L	***	**	*	neg	**	***	***	***
<i>F. tetrapetala</i>	L	***	**	*	*				
<i>F. setosa</i>	L	***	***	**	**				
<i>F. interioris</i>	L	***	***	*	*				
<i>F. latior</i>	L					*	*	*	*
<i>F. connata</i>	L					***	*	*	*
<i>F. plicata</i>	L					*	*	**	**
<i>F. fecunda</i>	S	**	**	*	neg				
<i>F. foliosa</i>	S	***	**	**	neg	**	**	**	***
<i>F. cinerea</i>	S	***	***	*	neg				
<i>F. pauciflora</i> var. <i>fruticulosa</i>	S					***	*	*	*
<i>F. confusa</i>	S								
<i>F. laxiflora</i>	S	**	**	*	neg				
<i>F. magnifica</i>	S								
<i>F. pauciflora</i> var. <i>pauciflora</i>	S	**	*	*	neg				
<i>F. irregularis</i>	S								
<i>F. pauciflora</i> var. <i>gunnii</i>	S	***	**	**	*	***	**	**	**
<i>F. subteres</i>	S					***	**	*	**

Table 3. Effect of salinity levels on germination and the pH, EC, sodicity and CEC ratios of soil associated with naturally occurring *Frankenia* populations. ‘L’ indicates larger-seeded species, ‘S’ indicates smaller-seeded species. (See Table 1 for key to symbols.)