Bitterbrush Germination — Second test (Seed) Petri germ

Experiment Border strat Treatment Strat 50°F Location Lab 7

Seed: Name Wheeler (Com. washed) Source _____ Collection date _____

Viability: By excise _____ %. From this test _____ %.

Date 1978		Time of Day	Germ. time (days)		Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Test.
Aug	1	12 noon		Seed into 50°F in Petri dishes after soaking 4 hrs in Lab 7 (72°±F)							0
				Sample 1			(162)	(152V)		10NV	219
Aug	7	7:30A	0	at 50° In 68°	10%	tips	0	0	0		6
	8	8AM	1	@68°	20%	"	9	9		Ave 1mm to 2mm	
	9	"	2	"	40%	"	5	14		To 5mm	
	10	"	3	"	"	"	0	14			
	11	"	4	"	"	"	0	14			
	14	9AM	7	" In to 35° & 40°	"		0	14		End	
Oct	26	"	0	at 40°			60	74			
				By excise 78V 10NV				78			
								152		End	
				Sample 2			(161)	(148V)		13NV	
Aug	7	7:30	In strat @ 50°				0	0	0		
"	9	9AM	"	" "	20%	tips	1	1		0.5mm	
"	11	8AM	"	" "	"	"	3	4			226
"	14	9AM	"0	at 50 In 68	40%	"	1	5		To 1mm	13
"	15	8AM	1				6	11			
"	16	" "	2				3	14			
"	18	" "	4				1	15			
"	21	" "	7	at 68° In 35°, 40°			0	15		End	
Nov	14	10AM	0-1	at 40° "13 In 68			133	148			
								0			
								148		End	

Bitterbrush Germination — Report

Seed

Experiment Border strat Treatment Strat 50°F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Treat.
			Sample (3)		(151)	(142)	9NV		
Aug 7	7:30	6	To strat 50°F		0	0			(6)
" 9	10AM	8	" " "	30% tips	0	0			
" 11	8AM	10	" " "	" "	3	3		to 3mm Aleut	
" 14	9AM	13	" " "	40% "	5	8		to 8mm	
" 18	9AM	17	" " "		3	11			233
" 21	8AM	0	out 50° In 68°	45% tips	6	17		End	(20)
" 22	8AM	1	@ 68°		4	21			
" 23	"	2	"		2	23			
" 24	"	3	"		2	25			
" 25	"	4	"		0	25			
" 28	"	7	" Into 40°		0	25		End	
Nov 14	10AM	-	@ 68° out 40° 4/13		98	123			
				Excise		19			
						142		End	
		Strat days	Sample (4)		(172)	(158V)	14NV		
Aug 7	7:30	6	To strat 50°		0	0	0		
9	10AM	8	" " "	30% tips	2	2		To 1mm: 16St	
11	8AM	10	" " "	" "	1	3		To 3mm Aleut	
14	9AM	13	" " "	45% "	4	7		To 4mm	
18	9AM	17	" " "		2	9			
21	8AM	20	" " "	"	5	14			
Aug 28	8AM	0	out 50° In 68°		3	17			
29	"	1	@ 68°		2	19			
30	"	2	"		5	24			
31	"	3	"		1	25			
Sept 1	"	4	"		0	25			
" 5	"	8	" Into 40°		0	25		End	
Nov 14	11AM	0	out 40° In 68°		44	69			
16	8AM	2	@ 68°		89	158			
						0			
						158		End	

Bitterbrush Germination (Seed)

Experiment Border - strat Treatment Strat 50°F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Treat.
			Sample (5)	(181)	(165 V)		16 NV		
Aug 7	7:30	6	To strat 50°		0	0	0		
" 9	10AM	8	" " "	20% tips	0	0	0		
" 11	8AM	10	" " "	" "	0	0	0		
" 14	9AM	13	" " "	35% "	1	1		To 1.5mm	
" 18	9AM	17	" " "		3	4			
" 21	8AM	20	" " "	40% "	1	5			
" 28	8AM	27	" " "	To 14mm	5	10			
Sept 5	8AM	0 out 50° In 68°			5	15		(End) strat	
Sept 6	8AM	1 @ 68°			0	15			
" 7	8AM	2 "			1	16			
" 8	"	3 "			3	19			
" 11	"	6 "			2	21			
" 12	"	7 "	Into 40°F		1	22		(End) germ	
Nov 13	1PM	out 40°F In 68°			65	87			
14	8AM	1	Back 40°		6	93			
Dec 8	1PM	0	out 40 In 68°		-	93			
" 11	1PM	3	@ 68		55	148		Excellent	
						17			
165						165		(End)	
16									
181			Sample		( )	( )			
		0							

Bitterbrush Germination (Seed)

Experiment Border strat Treatment Strat 50°F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)	No of Days Treat.
		Strat	Sample (6)		(192)	(170)	22 Nov	21
Aug 7	7:30A	6	In strat 50°		0	0	0	(0)
" 9	10:00A	8	" " "	75% tips	0	0	0	
" 11	8AM	14	" " "	"	0	0	0	
" 14	9AM	13	" " "	60% "	1	1		
" 18	9AM	17	" " "		5	6		
" 21	8AM	20	" " "	60% "	4	10		
" 28	8AM	27	" " "	To 11 mm	2	12		
Sept 5	8AM	35	" " "	To 11 mm	7	19		235
" 12	8AM	42	out 50° In 68°	To 13 mm	3	22	End strat	(42)
" 13	8AM	1	@ 68°	To 6 mm	5	27		
Sept 14	8AM	2	@ 68°		3	30		
15	"	3	"		1	31		
18	"	6	"	To 6 40°	3	34	End germ	
Nov 15	9AM	out 48	In 68°	5 superb.	117	151		
						19		
						170	End	
			Sample		( )	( )		
		0						

Bitterbrush Germination

Seed

Experiment Border strat Treatment Strat 50°F - Report Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978		Time of Day	Germ. time (days)		Tips (No)	Tips (%)		Germination (No)	Germination (Cum)	Germination (%)			No of Days Treat.
			Start days										
				Sample	(7)		(196)		(181 V)		15 NV		
Aug	7	7:30A	0	In strat 50°				0	0	0			
"	9	9AM	8	" " "	75% tips			1	1			To 2mm left	
"	11	8AM	10	" "	25			1	2			To 3mm All out	
"	14	9AM	13	" "	45 tips	To 6mm		4	6				
"	18	"	17	" "	"			3	9				
"	21	8AM	20	" "	60% "			9	18				
"	28	8AM	27	" "	To 13mm			29	47				
Sept	5	8AM	35	" "	To 6mm			3	50				
"	12	8AM	42	" "	To 17mm			1	51				261
	18	8AM	48	0 out 50° In 68°				1	52		End strat	(48)	X
Sept	25	9AM	7	@68F Into 40° strat				3	55			End Germ	
Nov	15	9AM	0	out 40° In 68° Excel				80	135				
	17	8AM	2	Back 40°				2	137				
Dec	8	1PM	0	out 40° In 68				—	137				
"	11	1PM	3	@68				15	152				
									29				
									181			End	
	181												
	15												
	196												
				Sample			( )		( )				
			0										

Bitterbrush Germination - Repeat (Seed)

Experiment Border-strat Treatment Strat 50°F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Treat.
			Sample	(8)	(196)	(176 V)	20 NV		
Aug 7	7:30A	6	In strat 50°		0	0	0		
" 9	10 AM	8	" " "	75% tips	2	2		To 15mm left	
" 11	8AM	10	" "		0	2		" ext	
" 14	9AM	13	" "	35% tips To 6mm	4	6			
" 18	"	17	" "		2	8			
" 21	8AM	20	" "	45% tips	1	9			
" 28	8AM	27	" "	To 8mm	1	10			
Sept 5	8AM	35	" "	To 11mm	1	11			
12	8AM	42	" "	To 17mm	3	14			
18	8AM	48	" "		2	16			268
Sept 25	9AM	55 0	out 50 In 68°	To 8mm	4	20		End strat	55
26	8AM	1	@68°	To 6mm	3	23			
27	8AM	2	"	To 3mm	3	26			
28	8AM	3	"	To 2mm (curled)	1	27			
29	8AM	4	"	To 5mm	4	31			
Oct 2	8AM	7	"	Into 40°F	1	32		End 68°	
Nov 15	9AM		out 40 In 68°		22	54			
16	8AM		@68 Back 40°		82	136			
Dec 8	1PM	0	out 40° In 68°						
11	"	3	@68		24	160		Excellent	
						16			
			Sample	( )		176	)	End	
160		0							
20 NV									
16									
196									

Bitterbrush Germination

seed

Experiment Border strat Treatment Strat 50°F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Treat.
			Sample (9)	(181)		(172 V)	9 NV		
Aug 7	7:30A	6	In strat 50°		0	0	0		
9	10AM	8	" " "	35% tips	0	0	0		
11	8AM	10	" " "		1	1			
14	9AM	13	" " "	60% tips	1	2			
18	"	17	" " "		3	5			
21	8AM	20	" " "	65%	2	7			
28	8AM	27	" " "	To 11mm	4	11			
Sept 5	8AM	35	" " "	To 13mm	2	13			
12	8AM	42	" " "	To 18mm	3	16			
18	8AM	48	" " "		2	18			
Sept 25	9AM	55	@ 50°		4	22			
Oct 2	9AM	0	Oct 50 In 68°F		2	24		End strat	
" 10	8AM	8		In to 40°F	14	38		End Germ	
Nov 15	9AM	0	out 40° In 68°		27	65			
16	8AM	1	@ 68°		60	125			
17	8AM	2	@ 68°	Back 40°	7	132			
Dec 8	1PM	0	out 40° In 68		—	132			
" 11	1PM		@ 68		32	164		Excellent	
					8	8			
						172		End	

64
9 NV
8 V
181

Bitterbrush Germination — Report — Seed

Experiment Border strat Treatment Strat 50°F Location Lab 7

Seed: Name Winder (Conn. washed) Source _____ Collection date _____

Viability: By excise _____ %. From this test _____ %.

Date 1978	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Treat.
		Strat days						No. This sample / Last divided into 4 samples 10 A, B, C, D, of 33 seeds each	
			Sample (10)		(213)		( )		
Aug 7	7:30A	6	In strat 50°		0	0	0		
" 9	10 AM	8	" " "	40% tips	1	1		To 1mm left	
" 11	8AM	10	" "		1	2		All out	
" 14	9AM	13		60% "	4	6		To 2mm	
" 18	"	17	" "		9	15			
" 21	8AM	20	" "	65% tips	8	23			
" 28	8AM	27	" "	To 15mm	6	29			
Sept 5	9AM	35	" "	To 12mm	4	33			
12	8AM	42	" "	To 16mm	5	38		This record	
18	8AM	48	" "		1	39		Early portion	
" 25	9AM	55	" "	" 9mm	1	40		of samples	
Oct 2	9AM	62	" "	" 12mm	4	44		10A	
" 10	10AM	70	" "	" 15mm	4	48		10B	
" 17	8AM	77	" "	" 5mm	7	50		10C	
" 23	8AM	83	" "	To Base Arc Down	21	71		10D	
" 26	"	86	" "	To 2mm	2	73			
" 30	"	90	" "	" "	1	74			
Nov 6	"	97	" "		3	77			
" 13	"	104	" "	To 22mm Arc 15	4	81		Seperate	
					4X				
			Sample (10A)		(213)	(197 V)	16 NV		324
Nov 20	1PM	0	out 50° In 68°	1x4	4	85			(111)
21	8AM	1	@ 68	1x4	4	89			89
22	8AM	2	" 27 left	4NV out = 16	0	89			4x4 16NV
23	9AM	3	"	0x4	0	89			27x4 10B left
24	8AM	4	"	3x4 (excised)	12	101			T 213
25	9AM	5	"	0x4	0	101			
		(Remaining 24 excised. All appear viable 24x4 ok			-12	89		End	
						96			
						+12			
						197		End	ok

Bitterbrush Germination

Seed

Experiment Border strat Treatment Strat 50F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978	Time of Day	Germ. time (days)	Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)		No of Days Treat.
									Start
					4X			6x4=24NV	
			Sample (10B)		(213)	(189V)		24NV	
Nov 13	8AM	0	In strat 50°		4	81		Last line early portion	104
" 20	1PM		" " " 0x4		0	81			111
" 28	11AM	0	Out 50 In 68° 0x4		0	81		End	119
" 29	8AM	1	@68° just germ. 1x4		4	85		Last	
" 30	9:30A	2	"		0	85			
Dec 1	8AM	3	"		0	85			
4	"	6	" 6NV out		0	85		4V out	
5	"	7	" 0x4 In 40°		0	85		End	
Dec 20	3PM		@68	26x4	104	104			
						189		End	
81			189						
132	← 33x4		24						
213			213						
			Sample		( )	( )			
		0							

Bitterbrush Germination

Seed

Experiment Border strat Treatment Strat 50°F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978		Time of Day	Germ. time (days)		Tips (No)	Tips (%)		Germination (No)	Germination (Cum)	Germination (%)			No of Days Treat.
													strat
							4x						
				Sample	10c		(209)		(177V)		32NV		
Nov	13	8AM	0	In strat 50°				4	81	Last line	only portion		104
"	20	1PM		"	"	0x4		0	81				111
"	28	11AM		"	"	0x4		0	81				
Dec	1	8AM		"	"	1x4		4	85				
	4	"		"	"	0x4		0	85				
	8	10AM		"	"	3x4		12	97				
"	22	10AM	0	"	"	10x4		40	137	To 35min Ave 15min			Excel.
				8x4 = 32NV out									
				10x4 = 40 remaining									
				Now Out 50° In 68°									
"	26	8AM	4			1x4		4	141				
				Excised 9x4					36 ok				
									177		End		
			177										
			32										
			209										
	137												
	32												
	40			Sample			( )		( )				
	209		0										

Bitterbrush Germination

Seed

Experiment Border strat Treatment Strat 50F Location

Seed: Name Source Collection date

Viability: By excise %. From this test %.

Date 1978		Time of Day	Germ. time (days)		Tips (No)	Tips (%)	Germination (No)	Germination (Cum)	Germination (%)			No of Days Treat.
							4X	34 seeds in this sample				
					Sample	10	213				✓	
Nov	13	8AM	0	In strat 50			4	81		last line early germination		104
"	20	1PM	"	"		0x4	0	81				111
"	28	11AM	"	"		0x4	0	81				
"	29	8AM	"	"		1x4	4	85				
"	30	9:30A	"	"		0x4	0	85				
Dec	1	8AM	"	"		0x4	0	85				
"	4	"	"	"		1x4	4	89				125
"	8	10AM	"	"		0x4	0	89				
"	22	10AM	"	"		3x4	12	101		To 20mm germ.		
						10x4=40 NV germ						
						18x4=72 remaining						
"	26	8AM	"	"		1x4	4	105		To 7mm		
"	29	1PM	"	"		1x4	4	109		To 5mm		
Jan	8	9AM	"	"		2x4	8	117				
	15	9AM	"	"		0x4	0	117				
	24	1PM	"	"		2x4	8	125				
Febr	5	2PM	"	"		8=2x4 NV germ						
	12	2PM	"	"		2x4	8	133				
	21	2PM	"	"		2x4	8	141		+ 48 NV to date		
	26	11AM	"	"		0x4	0	141				
Mar	12	8AM	"	"		1x4	4	145				
	29	9AM	"	"		1x4	4	149				
Apr	2	"	"	"		2x4	8	157				
		161					10x4	=40				
		+ last excised					2x4	8				
		48 NV					NV	48				
		Total 213										
→	9	9AM	"	"		1x4	4	161			165 Germ	
		1 left excised									48 NV	
Apr	12	11AM	← This germ 8mm				4	165			213	