March 12, 1974

Hormay

Solution of materials

Harper '74 Boise Seed from bitterbrush seed

436 grams of seed into 135 cc of H₂O

1974 Seeds weighed 1 minute for foam formation Amount of foam Judged 2 minutes after agitation Water

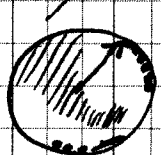
Date	Time	hrs	Comment	Color
March 12	9:15A	min	Seed into H₂O after rinsing to	Murky. No
"	5		remove surface "dust etc." (2 minutes)	color
	9:30	5mi	Water through outer seed Materials	Very pale
	5		in middle coat starting to dissolve.	straw yellow
	9:35	10 mi	Definite red pigment showing	Very pale straw tinge red.
	10		No foam	
	9:45	20	Coloring deepening - yellow & red	
	10			
	9:55	30	" " red standing to dominate yellow	
	20		Very light foam (small bubbles 50%	Reddish brown
			of edge No array covered)	
	10:15	50	Purplish Light foam 50% edge	
	10		Middle coat about 50% wetted	
	10:25	1hr	Purple. Tinge brown	
	15	1-15	Middle coat 95-100% wetted	
			50% jelly 10% surface foam	
	10:40		100% jelly. Embryo still hard "dry"	
	20	[redacted]	Appears H₂O does not penetrate The inner	
			coat as rapidly as the outer two	
			Cont'd next page	

Soaking 1 to 6 minutes

10:05	start	
10 06	1 minute	Outer coat softened and pliable. Can be peeled off
10 09	3 minutes	H₂O showing on surface of middle coat
10:11	6 minutes	Surface middle coat watery. Dissolving.
10 34	29 "	30% H₂O penetration of middle coat
11:10	1hr 5mis	100% " " " " Embryo softening
		... foam

✓ Edge refers to edge of water surface

Area = surface area



Mar 17 1974
Hornaday

Solution of materials Cont'd

Date	Time	
Mar. 17	11:AM 1-35	Purplish-red very light brown tinge. Prominent red cast
	45	40% foam. Cutting 50% hard. Embryo softening
	11:45 2-20	50% foam. Mound almost bubbled over
	35	Purple-red deep Cutting hard cheese. H2O definitely infiltrated embryo. Moisture sheen on cut surface
	12:20 2-55	Cutting as in fully saturated embryo
		Embryo slips out of inner coat easily
	45	Much excreted materials
		Deep (dirty) purple. Seed absorbed enough H2O to germinate no doubt.
	1:75 3-60	Embryo fully saturated. Beads moisture on cut surfaces
		Deep muddy purple 50% foam. (See over back page)
	(No 1 ← Excretion)	material (60)
Mar 12	11:57 A 0	Seed into H2O in Petri dish. No excretion Purple
	12:35 38mi	Excreting started in about 30 minutes
		Number of seeds (from) excreting
50	12:35 38mi	4
	1.75 1 1/4-78mi	17
	1:55 1 1/4-58mi	28
	3:15	31
Mar 13	9 AM	43 + 17 no excretion Total 60
	(No 2 ← Excretion)	(25)
Mar 13	8:48 A	Into H2O
	9:15 A	No excretions yet
	9:35 A	First tiny excretion beads showing
		No seeds excreting (from)
	9:45 A	1 First definite, prominent.
	10:15	2 Large mass collapse
	10:35	3
	11:10	6
Mar 14	7:30 A	18 > 1/2 < 10 of these excreting from pointed end (micropyle, chalazal scar) See back page
	✓ Excretion material	granular transparent, lucent lines

Mar 13 9:15A Very deep dark purple (opaque)
Heavy excretion sediment

Mar 14

Note!

Apparently excretions are squeezed out of breaks (holes) in the outer seed coat made by abrasion etc during cleaning handling. In case where the outer coat is not broken materials are extruded from the pointed end of the seed. - attachment scar

Solution of materials from seed.

5 minutes	Yellowish color
30 minutes	First red pigment
1hr 15 minutes	Red pigment dissolving rapidly