Buchanania lanzan - 2000

Collecting partner	S.C. Naithani. Seed Biology Lab. School of Life Sciences Pt. Ravishankar Shukla University Raipur – 492 010 (M.P.) India					
Collection date	April 24th 2000					
Seed source	Village Sambalpuri, District Raigarh					
Initial trials						
Fruit weight	0.64 ± 0.05 g					
Seed weight	0.24 ± 0.02 g					
	Fruit		Embryonic axes		Cotyledons	
Mc (%)	46.3 ± 4.3		35.7 ± 0.9		15.4 ± 2.5	
Mc before processing (%)	19.4 ± 1.2					
Mc after processing (%)	18.2 ± 1.8					
Initial germination (%)	93					
Desiccation trial						
Mc after desiccation (%)	12.4	6.3	3.9	3.3	2.7	
Germination (%)	**91**	**81**	**80**	**73**	**60**	
Storage trial	Storage for 10, 15, 30, 75 and 120 days. Results after 30 days presented below.					
Mc before storage (%)	18.2	12.5	6.3	3.9	3.4	2.7
Germination (%) after storage at -20°C	0	0	50	52	53	40
Germination (%) after storage at 0°C	0	0	50	60	57	60
Germination (%) after storage at 15°C	40	51	50	75	76	59
Germination (%) after storage at 25°C	60	48	60	60	35	30
Comments and conclusions	The critical moisture content is somewhere between 6.3 and 12.4%. Seeds with the two highest moisture contents are sensitive to 0 and -20°C, the viability was 0% already after 10 days of storage.					

Buchanania lanzan - 2001 collection

Collecting partner	S.C. Naithani. Seed Biology Lab. School of Life Sciences Pt. Ravishankar Shukla University Raipur – 492 010 (M.P.) India								
Collection date	April 7th 2001								
Seed source	Village Bagbahera. District Mahasamund (about 85 km from Raipur)								
Initial trials									
Fruit weight	0.7114 ± 0.68 g								
Seed weight	0.2052 ± 0.02 g								
Seed size	0.95 ± 0.07 x 0.69 ± 0.03 cm								
Mc of seed before processing (%)	17.1 ± 1.16								
Mc of seed after processing (%)	16.3 ± 0.42								
Mc (%)	Fruit	Embryo	Cotyledons	Axis	Endocarp				
	62.2 ± 3.3	15.4 ± 0.6	14.0 ± 0.55	16.7 ± 0.56	10.3 ± 0.46				
Initial germination (%)	100								
Desiccation trial									
Mc after desiccation (%)	15.6	13.4	10.6	10.0	9.2	8.3	7.1	4.1	3.8
Germination (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**93**
Storage trial									
Mc before storage (%)	16.3	15.6	13.4	10.0	7.1	4.1	3.8		
Storage at 25°C									
Mc after 10 days of storage (%)	15.1	14.3	10.9	11.3	6.0	4.1	4.3		
Germination after 10 days of storage (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**		
Mc after 30 days of storage (%)	8.2	13.6	7.2	9.1	5.1	4.3	4.1		
Germination after 30 days of storage (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**		
Mc after 90 days of storage (%)	8.5	10.2	7.7	6.7	6.0	5.3	6.5		
Germination after 90 days of storage (%)	**85**	**90**	**95**	**100**	**100**	**100**	**100**		
Mc after 180 days of storage (%)	6.9	7.9	6.5	7.1	7.4	7.3	5.4		
Germination after 180 days of storage (%)	**75**	**95**	**80**	**100**	**100**	**100**	**95**		
Mc after 280 days of storage (%)	6.2	6.8	6.1	6.3	6.4	6.1	5.6		
Germination after 280 days of storage (%)	**35**	**42**	**68**	**88**	**85**	**92**	**92**		
Storage at 15°C									
Mc after 10 days of storage (%)	16.1	14.0	11.0	11.2	5.8	4.1	4.2		
Germination after 10 days of storage (%)	**65**	**70**	**70**	**100**	**100**	**100**	**100**		
Mc after 30 days of storage (%)	15.2	13.2	10.9	9.6	5.6	4.1	4.4		
Germination afte r30 days of storage (%)	**55**	**50**	**60**	**100**	**100**	**100**	**100**		
Mc after 90 days of storage (%)	13.5	10.3	9.4	8.6	6.1	4.4	5.1		
Germination after 90 days of storage (%)	**0**	**0**	**0**	**100**	**100**	**100**	**100**		
Mc after 180 days of storage (%)	9.2	9.1	8.5	8.8	6.4	6.1	5.3		
Germination after 180 days of storage (%)	**0**	**0**	**0**	**78**	**100**	**100**	**100**		
Mc after 280 days of storage (%)	11.4	-	-	9.4	8.1	6.5	5.2		
Germination after 280 days of storage (%)	**0**	-	-	**58**	**60**	**88**	**88**		
Storage at 0°C									
Mc after 10 days of storage (%)	16.1	13.9	11.8	11.8	5.5	3.8	4.5		
Germination after 10 days of storage (%)	**0**	**10**	**25**	**100**	**100**	**100**	**100**		
Mc after 30 days of storage (%)	16.1	13.5	11.2	9.9	6.6	3.7	4.3		
Germination after 30 days of storage (%)	**0**	**0**	**0**	**100**	**100**	**100**	**100**		
Mc after 90 days of storage (%)	-	-	-	9.2	6.5	4.8	4.7		
Germination after 90 days of storage (%)	-	-	-	**100**	**100**	**100**	**100**		
Mc after 180 days of storage (%)	-	-	-	8.2	8.0	5.8	5.9		
Germination after 180 days of storage (%)	-	-	-	**100**	**100**	**100**	**100**		
Mc after 280 days of storage (%)	-	-	-	9.1	8.9	6.9	4.7		

Germination after 280 days of storage (%)	**-**	**-**	**-**	**65**	**78**	**90**	**85**
Storage at -20°C							
Mc after 10 days of storage (%)	15.7	13.7	10.7	10.5	5.8	4.8	3.1
Germination after 10 days of storage (%)	**0**	**0**	**10**	**100**	**100**	**100**	**100**
Mc after 30 days of storage (%)	16.3	14.2	10.5	11.5	5.7	4.8	3.4
Germination after 30 days of storage (%)	**0**	**0**	**0**	**100**	**100**	**100**	**100**
Mc after 90 days of storage (%)	-	-	-	10.4	5.7	4.4	3.7
Germination after 90 days of storage (%)	**-**	**-**	**-**	**95**	**100**	**100**	**100**
Mc after 180 days of storage (%)	-	-	-	9.5	7.6	6.7	3.9
Germination after 180 days of storage (%)	**-**	**-**	**-**	**82**	**100**	**100**	**100**
Mc after 280 days of storage (%)	-	-	-	9.4	9.4	8.7	6.8
Germination after 280 days of storage (%)	**-**	**-**	**-**	**70**	**85**	**88**	**90**
Comments and conclusions	*Buchanania lanzan* seeds are shed at 17.1 ± 1.16% moisture content. They are desiccation and chilling tolerant. The control seeds showed no loss in germinability and mc up to 48 hrs of storage. Seed desiccated to as low as 4.1 % mc even showed 100% survival. In storage trials. seeds dried to 4.1 and 3.8 showed 95-100% germination up to 180 days of storage at all storage temperatures. Storage for 280 days led to slight reduction in germinability i.e. 85-92%. Hydrated seeds [16.3. 15.6. 13.4%mc] could not tolerate chilling temperature but storage of these seeds at 25°C showed germination in the range of 35-68% after 280 days of storage. Further drying to 10 and 7.1% mc improve chilling tolerance in terms of germinability and longevity. These seeds exhibit 95-100% survival up to 90 days at all storage temperatures with gradual loss in germinability [58-88%] on 280 days of storage.						