TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE STATE OF COLORADO NATURAL RESOURCES CONSERVATION SERVICE

PLANT MATERIALS TECHNICAL NOTE NO. 62 **JUNE 29, 2005**

To: All Offices

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Summary of Viability Information for Garnet Germplasm Mountain Brome Following Seed Storage for a Period of Ten Years at the Meeker Plant Center.

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Garnet mountain brome was released in 2000 as a tested class release for its head smut resistance, longevity, ease of establishment, and good production of both forage and seed. Its release provides an alternative to 'Bromar'. Garnet has better head smut resistance and longevity than 'Bromar'. Head smut resistance is important for seed production because if head smut is present on a plant, seed is not produced. Garnet has been in seed production at the Upper Colorado Environmental Plant Center from 1996 to the present. Viability in seeds refers to seeds that are capable of growing or developing and includes germination, along with dormant and hard seeds. In 2005, all lots of Garnet were updated for viability (see Table1). This Technical Note presents the current information on viability of Garnet.

1. Initial viability of ten lots (1995 through 2004) of Garnet averaged 68.7 percent and ranged from 53 percent (2000) to 84 percent (1999), a difference of 31 percent.

2. Three lots (1995, 1998, and 2003) that were tested for viability one year after the initial test, lost viability respectively of 0 percent (1995), 1 percent (1998), and 10 percent (2003).

3. Viability of five lots (1995, 1996, 1997, 1998, and 2001) of Garnet averaged a loss of 12.2 percent over three years.

4. Viability of the five lots (1995, 1996, 1997, 1998, and 2001) of Garnet three years after the initial test averaged 57.6 percent and ranged from 74 percent (1995) to 49 percent (1998 and 2001).

5. Dormant or hard seed for the initial test of the ten lots ranged from 0 percent (2000) to 55 percent (1996). Dormant or hard seed was not reported on any of the tests after four years (1995).

In conclusion, based on the data in the Table 1, showing ten years of seed storage, it appears the germplasm of Garnet mountain brome should not be stored for longer than three or four years to avoid a substantial loss of viability.

Table 1

Garnet Seed Viability

Key: Blue = Viability

Red = Hard or Dormant Seed

Year Grown / Lot	Year of Test 1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1995	Feb.	Feb.	July	Feb.	April		Aug.			Feb.
	76	76	78	74	60		17			6
	40	0	0	1	1		0			0
1996		Mar.		Feb.	April					Feb.
		80		66	66					19
		55		0	0					0
					Dec.					
					61					
					0					
1997			Feb.		April	April			Jan.	Feb.
			74		54	50			36	15
			45		0	0			0	0
1998				Feb.	April	April	April			Feb.
				59	58	44	49			15
				28	2	0	0			0
1999					Feb.		Aug.			Feb.
					84		80			44
					31		0			0
2000					Dec.					Feb.
					53					39
					0					0
2001							Jan.			Feb.
							60			49
							4			0
2002								Feb.		Feb.
								72		54
								27		0
2003									Feb.	Feb.
									65	55
									13	0
2004										Jan.
										64
										14