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Seed production and seed quality of *Brachiaria* hybrids (Mulato and Mulato II) at different sites of Thailand

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Key words: *Brachiaria* hybrid, Mulato II, seed production, seed quality

Introduction *Brachiaria* hybrids were introduced to Thailand from CIAT in 1996 as part of a *Brachiaria* species evaluation. The Department of Livestock Development (DLD) identified Mulato (*Brachiaria ruziziensis* x *B. brizantha* cv. Mulato) as the most promising variety for livestock production in the seasonally wet-dry climates and poor soils of northeast Thailand. On-station seed production trials began in 2000 and on-farm production started in 2003. In 2004, Thai farmer produced 17 tons of Mulato seed, which was exported to Latin America through Tropical Seed, LLC. Unfortunately, seed yields of Mulato were too low to make seed production a viable enterprise for Thai farmers. A new hybrid, Mulato II (*B. ruziziensis* x *B. decumbens* x *B. brizantha*), which is similar to Mulato agronomically but produces higher seed yields, was introduced from CIAT in 2004.

On-station trials Experiments to evaluate seed yield and seed quality of Mulato and Mulato II were conducted at DLD stations at Lampang (LP), Nakhonratchasima (NM), and Khon Kaen (KK). Seed was harvested by covering seed heads with nylon net bag. Seed yield of Mulato and Mulato II were variable but seed quality was good (Table 1). These yields compare to 202 kg/ha for Mulato and 509 kg/ha for Mulato II grown at Ubonratchathani University (Hare, 2007).

Table 1 Seed yield and seed quality of Mulato and Mulato II grown at different sites in Thailand (2004-2006).

Site	Mulato				Mulato II			
	Seed yield (kg/ha)	Purity (%)	1,000 Seed weight (g)	Germination (%)	Seed yield (kg/ha)	Purity (%)	1,000 Seed weight (g)	Germination (%)
LP	162	89	8.8	70	494	94	7.2	86
NM	331	98	8.7	69	119	99	7.0	79
KK	317	96	8.7	67	241	97	7.4	69

Smallholder farmers' seed production Seed production trials on-farm commenced in 2003 with 7 smallholder farmers in Khon Kaen Province, supported by Division of Animal Nutrition, Department of Livestock Development (DLD), Thailand, and Grupo Papatla seed company. As shown in Table 2, farmers produced 173 kg of Mulato good quality seed in 2003 (average seed yield was 94 kg/ha). From 2004 to 2006, smallholder farmers in collaboration with Ubonratchathani University (UU) and Papatla seed company, produced a total of 5,959 kg of good quality seed of Mulato II (Hare, 2007). In 2007, it is expected that farmers will produce 30 tons of Mulato II seed through UU and DLD.

Table 2 Seed production and seed quality of Mulato and Mulato II produced by smallholder farmers in Thailand.

Year	Mulato				Mulato II ¹
	Seed production (kg)	Seed purity (%)	1,000 Seed weight (g)	Germination (%)	Seed production (kg)
2003	173	84	9.0	68	-
2004	17,283	90	8.8	65	2,070
2005	1,798	97	9.2	56	1,292
2006	2,182	97	9.2	56	2,597

¹ Hare (2007)

Conclusions Finding areas suitable for seed production of *Brachiaria* hybrids was not without difficulties. Seed yields varied widely between sites and years, which was partly related to lack of experience but also to a difficult crop. Higher seed yields were recorded for Mulato II (494 kg/ha) than for Mulato (331 kg/ha) at the most suitable sites. Low initial seed yields in 2004 discouraged many farmers from producing Mulato. In 2007, farmers planted more than 100 ha of Mulato II and first estimates of yields indicate a production of approximately 30 tons of seed. There is a need to further increase seed yield of Mulato hybrids to ensure an economically viable enterprise for farmers in Thailand.

Reference

Hare, M.D. 2007. Successful seed production of South American forages in Ubon Ratchathani province, Thailand: Research, development and export. In *Proceedings of an International Forage Symposium: Forages: A Pathway to Prosperity for Smallholder Farmers* pp. 35-60.