

Forage Research Updates

MINNESOTA

Italian Ryegrass Demonstrates High Yield and Quality Potential

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During 2004, Italian ryegrass seeded April 30 has produced up to 6 ton DM/ac of high quality forage in a small plot trial on the Schefer dairy farm in Stearns Co., MN. Italian ryegrass usually behaves as an annual in northern USA environments, but in contrast to “true” annual ryegrass, it produces only leafy (high-quality) growth during the year of spring establishment. The trial has been harvested four times (June 29, July 23, Aug. 19, and Sept. 27), and sufficient regrowth for a fifth harvest may be present in early November. Yields could be somewhat less in a warmer, drier year. Plots received 40 lb N/ac per harvest as ammonium nitrate. Manure could be used in place of fertilizer. Fertilizer incorporated prior to establishment was applied by Midwestern Bio-Ag based on soil tests.

Preliminary forage quality tests suggest very high quality potential. Preliminary RFV estimates averaged 190 at the 1st harvest, and 150 for the 2nd and 3rd harvests. Preliminary Relative Forage Quality (RFQ) estimates are even more impressive, averaging about 250 for the first three harvests. The high values are due to exceptionally high dry matter and fiber (NDF, 48 h in vitro) digestibilities (~90% and 75%, respectively). Quality analyses will be completed by winter.

Italian ryegrass can be used as an annual silage or grazing crop. Since plant moisture is typically over 85% and wilting is difficult, Italian ryegrass harvest as hay is challenging, but not impossible. It also can be used as a nurse crop for perennial forage establishment. It boosts seeding year forage yields while providing a higher quality alternative to small grain nurse crops. When used as a nurse crop, seeding rates of Italian ryegrass must be fairly low (<5 lb/ac) so it doesn't out-compete slower-establishing perennials.

Table 1. 2004 forage yields (ton DM/ac, 100% DM) of selected entries
(small-plot trial seeded 4/30/04; Painesville, Stearns Co., MN)

Variety	Species	June 29	July 23	Aug. 19	Sept. 27	Total
		----- Ton DM/acre -----				
Barextra	Italian ryegr. tetraploid	0.96	1.90	1.66	1.53	6.05
Bardelta	Italian ryegr. diploid	1.04	2.03	1.48	1.28	5.83
Baridana	Orchardgrass	0.26	0.96	1.20	1.11	3.53
Robust	Barley	2.36	0.26	--	--	2.62
Marathon	Reed canarygrass	0.18	1.12	0.54	0.71	2.55
Jim	Oat	1.54	0.73	--	--	2.27