



Northern NY Agricultural Development Program 2004 Project Report

Tall Fescue Variety Trials 2004

Project Leader(s):

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Background:

Most cropland in Northern New York (NNY) is better suited to perennial grass production than to legumes or row crop production due to soil type and/or alfalfa snout beetle infestation. Previous grass studies at Canton, Chazy and Willsboro have indicated that tall fescue is very persistent in Northern NY and will yield as much or more than other cool-season grass species. Tall fescue continues to suffer from an image problem. Old tall fescue varieties contain an endophytic fungus that makes the grass plants healthier and stronger, but also makes the forage unsuitable for dairy cows. New endophyte-free tall fescue varieties do not have the palatability problems of the old varieties. Fescue is also discredited for having coarse leaves that are unpalatable. Many new varieties have been released that claim to solve this perceived problem.

Although tall fescue appears to be less persistent than other grasses in the upper Midwest, it has survived Northern New York winters over the past decade and does not appear to have any persistence problems in New York state. Several feeding trials conducted at the Cornell Animal Science Farm in Harford, NY, have demonstrated that tall fescue silage can produce as much milk per cow as alfalfa silage when rations are balanced. Tall fescue is typically lower in crude protein than other grasses, except for timothy, but is similar in fiber concentration and quality. Many new tall fescue varieties are now available for NNY and almost all are "endophyte-free." In trials over the past 10 years, tall fescue often ranks highest for yield among cool-season grass species in New York state.

Several new varieties have been developed with a much less toxic endophytic fungus that is supposed to improve plant health and persistence, but not have the negative affects on

palatability and performance found in older endophyte-infected varieties. These new “friendly endophyte” varieties have been promoted heavily through the midsection of the U.S., and are now being promoted in the Northeast. We have no information on the performance of any of these new varieties in northern NY.

Methods:

A trial containing 21 new varieties was established at Chazy in 2002. Recently, however, a large number of new tall fescue varieties were made available. This has resulted in the need to establish new trials. Trials with new tall fescue varieties were established at the Canton research farm and at Chazy in the spring of 2004. These trials contain 48 fescue varieties plus one orchardgrass and one reed canarygrass as checks. Five “friendly endophyte” varieties are included, as well as many with “soft leaf/lax leaf” characteristics.

A separate set of plots was established for the purpose of heading date evaluation. (Yield and quality plots are harvested prior to heading). The established fescue trial at Chazy was fertilized with recommended N, P and K fertilizer in the spring of 2004 and individual varieties are sampled twice a week through the spring growth, for yield and quality changes over time. Varieties were harvested three times per season over multiple seasons to evaluate varieties. This is an intensive 3-cut system, with the first and second cuts taken at approximately 50-55% NDF, with a 3rd cut in the fall suitable for dry cow forage.

Results:**Chazy Fescue Variety Trial Results**

	2003	2003	2004*	2004
	Tons		Tons	
<u>Variety</u>	<u>hay/acre</u>	<u>Signif.**</u>	<u>hay/acre</u>	<u>Signif.</u>
BARFA 1004	4.64	a	3.44	ghi
Festival	4.62	ab	3.93	bc
Kokanee	4.59	ab	4.07	ab
Hoedown	4.55	ab	3.94	abc
Fuego	4.54	ab	3.70	cdef
BE9301	4.52	abc	3.4	hi
Dovey	4.48	abcd	3.76	cde
Kora	4.43	abcde	4.18	a
TF-1	4.39	abcde	3.44	ghi
Barcarella	4.33	abcde	3.86	bcd
Barcel	4.32	abcde	3.51	fghi
Select	4.28	abcde	3.85	bcd
Jessup-MaxQ	4.24	abcde	3.81	cd
TF33	4.2	abcde	3.67	defg
Barolex	4.18	bcde	3.39	hi
Bronson	4.08	cde	3.55	efgh
WMF1***	4.07	de	3.68	defg
Bariane	4	ef	3.46	fghi
Seine	4	f	3.3	i
Bartura***	3.6	f	3.38	hi
PBR	3.57	f	2.93	j

* 2004 yields are from two harvests, without a fall harvest

** Varieties in a column with similar letters following the yield mean are not different

*** Bartura and WMF1 are meadow fescues

Over two years of three locations (including two central NY sites), Kora was the highest yielding variety. Other top varieties across all trials included Festival, Barcarella, Select, and Hoedown. Kokanee performed well, but is no longer sold commercially. Varieties on the bottom of the list have consistently stayed on the bottom.

Conclusions/Impacts:

The new trials sown in 2004 are guaranteed to get national attention from forage workers. I believe our trial results will match up well with a strong seed industry push for tall fescue in the Northeast. These results will be distributed and available on the web to aid Northern NY farmers in making seeding decisions.

Next steps:

The older fescue trial has been terminated at Chazy after 2004 data collection. The 48 fescue varieties sown at Chazy and Canton (and Mt. Pleasant) in 2004 represent the only such fescue trials in the world. We were able to get a large number of varieties because this is not a “paid entry” file, companies did not have to pay to provide entries. All other trials have a relatively few paid entries (e.g. Cornell Plant Breeding fescue trials last year had 6 or so entries, often many of these have not even reached “variety” status), or they are company trials with only company germplasm represented. Companies will be promoting the new novel endophyte varieties in NYS. We have five pairs of novel endophyte/endophyte-free entries to allow us to evaluate whether the novel endophyte varieties have a yield advantage in the north. We would like to continue the new trials through 3 harvest seasons (2005-07) to fully evaluate these varieties for northern NY conditions. Our plans for 2005 are to get these studies harvested one way or another without any direct funding, and to store quality samples for future analysis as time and funds permits. Results will be distributed through extension meetings and variety trial results will be posted on the web.

Acknowledgments:

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Person(s) to contact for more information:

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Northern New York Agricultural Development Program:

The Northern New York Agricultural Development Program provided funding for this grass-based agriculture/crop production research project. The Northern New York Agricultural Development Program is a farmer-driven research and education program specific to New York state’s six northernmost counties: Jefferson, Lewis, St. Lawrence, Franklin, Clinton and Essex.

Thirty-three farmers serve on the Program board led by Co-Chairs Jon Greenwood of Canton (315-386-3231) and Joe Giroux of Plattsburgh (518) 563-7523. For more information, contact Jon, Joe or R. David Smith at 607-255-7286 or visit www.nnyagdev.org # # #