For Crop Production 1999

ORCHARDGRASS VARIETY TRIALS

Minnesota Agricultural Experiment Station — University of Minnesota
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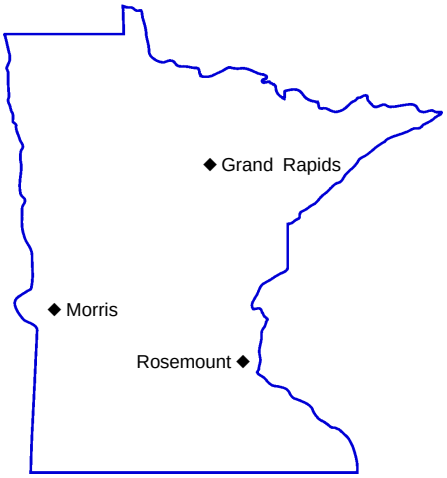
This is a report on results of a new series of orchardgrass variety performance tests conducted by the Minnesota Agricultural Experiment Station. This report was prepared by Nancy J. Ehlke (612-625-1791; <ehlke001@tc.umn.edu>), agronomist, and Donn J. Vellekson (612-625-9765; <velle001@tc.umn.edu>), research plot coordinator, Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN 55108.

Successful orchardgrass production can often depend to a considerable extent on selecting the best varieties for a particular farm. For that reason, varieties are compared in trial plots on Minnesota Agricultural Experiment Station fields at Grand Rapids, Morris and Rosemount. Varieties are grown in replicated plots at each location. These plots are handled so that the factors affecting yield and other characteristics are as nearly the same for all varieties at each location as is possible.



Locations where orchardgrass trials were conducted for this report.

Orchardgrass is often used in hay and pasture mixes with other grasses and legumes because it establishes rapidly and recovers quickly after grazing or harvesting. Its major limitation is a lack of winterhardiness, but it can persist and remain productive in areas with reliable snow cover.

Performance in Trials

Orchardgrass varieties were established in pure stand in 1989 at Rosemount and Grand Rapids and in 1997 at Rosemount and Morris. Experimental plots were generally harvested three times per year. Nitrogen was applied in the early spring and after each harvest at a rate of 50 pounds of nitrogen per acre.

Interpreting the Tables

The LSD (Least Significant Difference) values associated with the data in table 1 are measures of variability within the trials. If a yield difference between two varieties within a

single column exceeds the LSD value at the bottom, you can assume that the higher yielding variety was truly better yielding.

A 5 percent level of significance is used in the table. This means that yield differences exceeding the stated LSD value are real 95 percent of the time. If the difference is less than the LSD, greater attention should be given to other traits which are also important in making your variety choices.

Acknowledgements, Permissions and Caveats

Fieldwork for orchardgrass trials was supervised by Gregory Cuomo and Russell Mathison.

Publication project chair is Leland L. Hardman, professor, Agronomy and Plant Genetics. Web product manager for extension communications is Larry A. Etkin, senior editor.

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Table 1 — Dry matter yield, in tons dry matter per acre, of orchardgrass varieties seeded at three locations.

Variety	Grand Rapids 1990-1994	Rosemount 1990-92	Rosemount 1998	Morris 1998
Ambassador	3.5	4.7	4.9	2.7
Condor	—	—	5.0	2.7
Crown	3.5	4.6	4.8	—
Dawn	3.6	4.6	—	—
Duke	—	—	5.5	2.8
Elsie	3.5	4.8	—	—
Haymate	—	—	4.8	3.0
Justus	3.4	4.7	5.0	3.0
Napier	3.6	4.6	4.5	2.3
Orbit	3.4	4.5	3.9	2.7
Orion	3.7	5.0	5.0	2.6
Potomac	3.5	4.5	5.1	2.7
Shawnee	3.3	4.5	—	—
Sterling	3.4	4.8	—	—
LSD 5%	NS	0.5	0.7	0.5

Table 2 — Potential 1999 orchardgrass seed sources known to the Minnesota Crop Improvement Association.

ABT/La Crosse Seed Company
PO Box 187
LaCrosse WI 54601
800-658-9428

Agassiz Seed & Supply
445 7th Street NW
West Fargo ND 58078
701-282-8118

Albert Lea Seed House
1414 West Main, PO Box 127
Albert Lea MN 56007
507-373-3161, 800-352-5247

Croplan Genetics
PO Box 64089, Cenex/Land O' Lakes
St. Paul MN 55164
612-451-5490

Discount Farm Center
PO Box 84, West Hwy 212
Watertown SD 57201
605-886-5888

Garst Seed Company
2369 330th Street
Slater IA 50244
800-831-6630

Geertson Seed Farm
1665 Burrough Rd
Adrian OR 97901
541-339-3768

International Seeds Inc.
PO Box 168
Halsey OR 97348
541-369-2251

Olds Seed Company
Box 7790
Madison WI 53707
800-356-7333, 608-249-9291

Peterson Seed Company
Box 346
Savage MN 55378
800-328-5898

Premium Seed Company, Inc.
7800 East State Hwy 101
Shakopee MN 55379
612-496-1783

R.J. Hunt Seed Company
13477 County Road 101
Wadena MN 56482
218-631-4190

Top Farm Hybrids
17177 60th Street Southwest
Cokato MN 55321
320-286-5516

Trelay, Inc.
11623 Hwy 80 North
Livingston WI 53554
800-421-0397, 608-943-6363

Twin Cities Seeds
7265 Washington Avenue South
Edina MN 55439
800-545-8873

Werner Farm Seeds
3104 Millersburg Blvd.
Dundas MN 55019
507-645-7995

Orchardgrass Planting Rate and Date

Rate is based on normal seedbeds and on normal size, good quality seed. Rate used can vary greatly depending on seed cost, desired stand, expected mortality, emerging ability, seed weight, seed germination, seedbed condition, depth of planting and planting equipment. Weight given is the most widely accepted in the U.S.

Crop Use	Bushel Weight (pounds)	Seeds/pound (number)	Rate/acre (pounds)	Rate (seeds)	Planting Date
In mixtures	14	416,000	3	30/square foot	Use date for legume