

EVALUATION OF VARIETIES OF ORCHARDGRASS, FINE FESCUE, AND BROME IN CENTRAL OREGON, 2001

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Abstract

Plots were established August 11, 2000 at the Central Oregon Agricultural Research Center (COARC) to evaluate eight varieties of orchardgrass, six varieties of hard fescue, and five varieties of brome. Hard fescue variety 'Warwick' produced significantly higher yields than 'Scallis II' or 'Eureka'. 'SR 3100' hard fescue produced the second-highest yield with the greatest seed yield per biomass. Yields for orchardgrass varieties 'Quantam' and 'Orion' were significantly higher than either 'Mammoth' or 'Justus'. Mountain brome variety 'BCAPN-1' produced an outstanding yield despite significant shatter at harvest.

Introduction

There is a continuing search by the agricultural community in central Oregon to explore new crop opportunities. Since this area is heavily invested in grass and vegetable seed production, evaluating opportunities to expand into additional grass seed crops would be a logical area to pursue. In cooperation with industry representatives, Peter Sexton established plots in 2000 to evaluate varieties of orchardgrass, fine fescue, tall fescue, and bromes at COARC in Madras, Oregon.

Methods and Materials

Plots were established August 11, 2000 at COARC to evaluate eight varieties of orchardgrass, six varieties of hard fescue, five varieties of tall fescue, and three varieties of brome. Eighteen-ft plots by four rows for all varieties except hard fescue (with eight-row plots) were replicated four times in a randomized block design. None of the tall fescue plots were harvested due to a drop in interest in that species.

Plot harvest was determined by varietal maturity. 'Eureka' hard fescue and 'Quatro' sheep fescue were harvested June 23, followed by harvest of 'Scallis II', 'SR 3100' and 'Warwick' hard fescue and 'CAS-FCS1' chewings fescue on July 2. All orchardgrass varieties were harvested July 12, along with 'CAS-AZ11' and 'BCAPN-1' bromes. There was some shatter in the orchardgrass varieties, but it was slight and appeared to be similar across varieties. 'BCAPN-1' was overmature with significant shatter and should have been harvested a week earlier, while the timing on 'CAS-AZ11' appeared correct. One variety of brome was not harvested due to severe shatter.

Results and Discussion

Seed yields for fine fescue (Table 1), orchardgrass (Table 2), and brome grasses (Table 3) were significantly different between varieties for each of the grass types. Hard fescue variety 'Warwick' produced significantly higher yields (1,249 lb/acre) than 'Scallis II' (778 lb/acre) or 'Eureka' (662 lb/acre). 'SR 3100' hard fescue produced the second highest yield at 1,079 lb/acre, with the greatest seed yield per biomass. Chewings fescue variety 'CAS-FCS1' yielded 945 lb/acre and 'Quatro' sheep fescue produced 892 lb/acre. These yields are competitive with the Willamette Valley production of 775 lb/acre.

Orchardgrass varieties 'Quantam' (621 lb/acre) and 'Orion' (487 lb/acre) yielded significantly higher than either 'Mammoth' (367 lb/acre) or 'Justus' (320 lb/acre). However, all varieties were significantly lower than the 850 lb/acre production in the Willamette Valley.

Mountain brome variety 'BCAPN-1' produced an outstanding yield of 1,683 lb/acre despite significant shatter at harvest, which was estimated to be about a week late. Smooth brome variety 'CAS-AZ11' was harvested in a timely manner and produced 781 lb/acre.

Table 1. Performance of fine fescue varieties planted August 2000 at the Central Oregon Agricultural Research Center and harvested in 2001.

Variety	Harvest date	Seed yield ----lb/acre----	Biomass ----ton/acre----
Warwick (hard)	July 2	1,249 a ¹	7.7
SR 3100 (hard)	July 2	1,079 ab	5.8
CAS-FCS1 (chewing)	July 2	945 ab	6.8
Quatro (sheep)	June 23	892 ab	5.9
Scallis II (hard)	July 2	778 b	5.8
Eureka (hard)	June 23	662 b	6.4
			NS

¹Mean separation with Student-Newman-Kuels (SNK) Test at $P \leq 0.05$.

Table 2. Performance of orchardgrass varieties planted August 2000 at the Central Oregon Agricultural Research Center and harvested in 2001.

Variety	Harvest date	Seed yield ----lb/acre----	Biomass ----ton/acre----
Quantam	July 12	621 a ¹	4.2
Orion	July 12	487 b	3.9
Frode	July 12	444 bc	4.2
Ambassador	July 12	406 bcd	4.3
Pizza	July 12	388 bcd	3.5
Stampede	July 12	374 bcd	4.0
Mammoth	July 12	367 cd	4.0
Justus	July 12	320 d	3.2
			NS

¹Mean separation with Student-Newman-Kuels (SNK) Test at $P \leq 0.05$.

Table 3. Performance of brome grass varieties planted August 2000 at the Central Oregon Agricultural Research Center and harvested in 2001.

Variety	Harvest date	Seed yield ----lb/acre----	Biomass ----ton/acre----
BCAPN-1 (mountain)	July 12	1683 a ¹	6.3
CAS-AZ11 (smooth)	July 12	781 b	6.7
			NS

¹Mean separation with Student-Newman-Kuels (SNK) Test at $P \leq 0.05$.