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Loyal Oat

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Late maturing

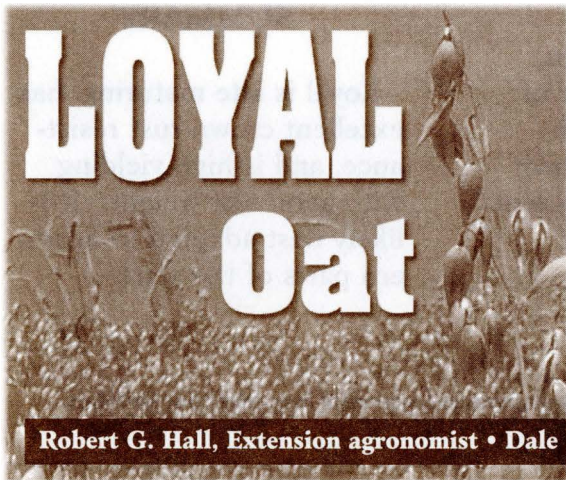
Excellent crown rust resistance

High yielding

Good test weight



SOUTH DAKOTA STATE UNIVERSITY
Agricultural Experiment Station
U.S. Department of Agriculture



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'Loyal' oat, released by the South Dakota Agricultural Experiment Station in 2000, represents a significant improvement in oats breeding. It provides growers the choice of a late variety which combines high yield with crown rust resistance and good quality grain.

ORIGIN

Loyal, tested as SD94160, was developed from a single F3 panicle resulting from the cross Noble/Dal/Nodaway70/3/ND821456/4/Premier/4/Don. Loyal has been tested in the South Dakota Crop Performance Testing program since 1998.

AGRONOMIC CHARACTERISTICS

Loyal is a white-hulled variety with good test weight and medium-high to high protein (groat) content. Loyal's protein content is equal to 'Troy' and higher than 'Jerry' (Table 2). Although not indicated in the tables, in 1997 Loyal

had a groat percentage of 72.7% which was similar to Jerry (72%) but higher than Troy (70%). Loyal is late maturing, heading about a day later than Troy and 3 days later than Jerry (Table 2).

Loyal is medium tall, averaging the same height as Troy and 2 inches taller than Jerry (Table 2). Straw strength is good.

Crown rust resistance is a major advantage of this variety. Loyal combines good crown rust resistance with good test weight. In addition,

Loyal has better resistance to loose smut than Jerry. Loyal is more susceptible than Jerry to barley yellow dwarf virus (BYDV), commonly called "red leaf."

PERFORMANCE DATA

Loyal has performed well in both eastern and western areas of South Dakota (Table 1). Loyal was in the top-yielding group at all five test locations having 3-year averages. Loyal averaged 113 bushels/acre compared to 112

Table 1. Average 3-year yield (bu/acre) and test weight(tw, lb/bu) comparison of Loyal with four oat varieties, 1998-2000.

Variety	LOCATION									
	Brookings		Watertown		Wall		Bison		Selby	
	bu	tw	bu	tw	bu	tw	bu	tw	bu	tw
Loyal	108	35	114	37	90	39	114	39	140	38
Don	107	34	99	35	83	39	109	39	133	37
Hystet	86	37	79	39	65	40	87	42	112	39
Jerry	110	36	105	38	85	39	113	40	146	38
Troy	105	33	96	36	92	38	110	38	148	38
Comparison Average:	103	35	99	37	83	39	107	40	136	38

for Jerry and 110 for Troy over all locations (Table 2).

Test results indicate Loyal should do well in the northern half of the state. In addition, it has performed better than expected for a late oat in southern parts of the state.

The name Loyal was selected for Loyal Evjen, who served as manager of the Northeast Research Farm north of Watertown for many years. He presently lives in retirement at South Shore, S.D.

SUMMARY

Loyal is late maturing, has excellent crown rust resistance, and is high yielding with good test weight. It is likely best adapted to northern parts of the state.

Table 2. Average 3-year agronomic performance and characteristics comparison of Loyal with four other oat varieties across all sites, 1998-2000.

Variety	Rel Hdg day	Protein pct	Bu Wt lbs	Ht inch	Yield bu/a	Stand- ability	Grain Color	Disease reaction			
								Stem Smut	Crown Rust	Red Rust	Leaf
Loyal	7	16	37	40	113	Good	White	R+	MS+	R+	S+
Don	0	15	36	32	106	Good	White	R	MS	S	MR
Hyttest	3	17	39	39	86	Good	Lt.Cream	MR	MS	MS	MS
Jerry	4	15	37	38	112	Good	White	—	MS	MR	MS
Troy	6	16	36	40	110	Fair	White	MR	S	MS	MR
Statewide Average:	—	16	37	38	105	—	—	—	—	—	—

+ R = resistant, MR = moderately resis., MS = mod. susceptible, S = susc.



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