

**RECOMMENDATION FOR RELEASE OF CAYUSE, A SPRING OAT  
FOR WESTERN WASHINGTON**

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Yellow dwarf (red leaf of oats) is the most serious disease of oats in western Washington. Beginning in 1959 and ending 1962, 4000 plus varieties of oats were screened for tolerance or resistance to the disease at The Southwest Washington Research Center, Vancouver. 'Cayuse' was selected from these oats on the basis of an apparent ability to yield even though discolored by the disease (tolerance?) and because of good agronomic type. After the screening phase Cayuse was tested in the regular oat trials at 3 western Washington locations and it consistently produced well in comparison to all previous commercial varieties (Table 1).

When the promise of Cayuse was shown in the western nurseries, it was introduced into the 5 eastern Washington oat nurseries. It has been tested for 2 years in these nurseries and is the highest yielder in them (Table 2). It entered the Northwest Regional Oat Nursery in 1965 and tied for 1st place in 8 irrigated nurseries and was 1st in 8 dryland nurseries. Its performance to date argues for its release at present for western Washington where it has been most thoroughly tested.

Cayuse is a pale green, short, moderately early oat with above average straw strength. The panicles are open and spreading, the grain light colored. Its main weakness is a relatively light (but acceptable) bushel weight. No disease of consequence other than yellow dwarf has attacked this variety at any Washington location during the period of observation.

Area for release: Western Washington

Seed stocks: Foundation seed will be available for planting in the spring of 1967.

History:

Cayuse was produced by N. F. Jensen, Cornell University. It is Craig x Alamo line number 5271aB - 2B - 51. It has been assigned C. I. number 8263 and is now in the U.S.D.A. World Oat Collection. Dr. N. F. Jensen, Department of Plant Breeding, Cornell University, approves our naming and release of this variety.

Agronomic characteristics:

Probably the best perspective is obtained by using its rank among 21 varieties of the Northwest Regional Oat Nursery.

	<u>Irrigated</u>	<u>Unirrigated</u>
Yield	1	1
Test weight	20	15
Maturity	12	3
Height	4	2
Kernel weight	13	5
Groat percentage	15	4
lodging	12	1

Groat

Obviously its overall performance is better in dryland than under irrigation. Orbit, another Cornell oat, has much stronger straw, yields well, but its performance under yellow dwarf in western Washington is not known. The "tolerance" of Cayuse to this disease warrants its trial on farms.

Utilization:

Feed, as hay or grain. Its light kernel would not be adapted for rolled oats.

Table 1. Western Washington Yields, Data of H. M. Austenson

	1962		1963		Pyallup		Vancouver			Mt. Vernon		
	1962	1963	1964	1965	1963	1964	1965	1963	1964	1965		
Cayuse	182	141	63	135	95	44	90	90	93	175		
Shasta	135	104	"	"	47	"	"	112	"	"		
Coverland		87	44	130	57	31	69	76	68	141		
Eagle			55			46	41		79	167		
Victory			48	115		41	"		"	"		
Park			53	107		40	58		63	149		

Table 2. Eastern Washington Yields, Data of L. Bacon, Medium Fertility

	Pullman		Dusty		Pomeroy		Dayton		Walla Walla	
	1964	1965	1964	1965	1964	1965	1964	1965	1964	1965
Cayuse	136	130	87	86	80	109	121	58	113	94
Russell	112	107	77		80		100		109	
Park	121	99	64	66	69	94	91	44	96	70
Shasta	115		64		65		91		92	

Table 3. Performance of Cayuse in the Northwest Regional Oat Nursery, data from Dr. Frank Petr, Aberdeen, Idaho, 1966.

Irrigated nurseries (8 Locations)

Rank	C. I. no.	Designation	bu./A	lbs/bu
1.	8263	Craig x Alamo	135.9	35.3
2.	7811	Orbit	135.7	36.6
3.	7476	Zanster	127.5	39.2
4.	2874	Minn. II-22-220	127.2	35.0
5.	7557	Russell	125.7	38.6
10.	6611	Park	119.9	36.9
14.	4181	Overland	115.6	37.2
15.	1145	Victory	111.3	39.3

Nonirrigated nurseries (8 Locations)

1.	8263	Craig x Alamo	91.1	36.8
2.	7811	Orbit	83.6	35.1
3.	2874	Minn. II-22-220	81.9	33.5
4.	7476	Zanster	81.7	37.7
6.	1145	Victory	79.7	37.0
7.	4181	Overland	78.1	37.5
9.	7557	Russell	76.8	34.1
12.	6611	Park	75.5	36.4

## Winter Barley

### *White Winter*

White Winter (Idaho Club) is a six-row winter barley. It is moderately winter hardy and resistant to mildew. White Winter has rough awns and compact head. In fall seedings, it matures early; in spring seedings, it is late maturing. When spring planted, its earlier growth is sprawling, and at maturity it is medium tall. Its stiff straw makes it more resistant to lodging than other varieties. White Winter can be used for malting. Spring-sown White Winter generally out-yields spring varieties. White Winter is recommended for fall seeding in areas with 18 or more inches of rainfall in Eastern Washington.

It is not recommended for spring planting.

### *Luther*

Luther is a mutant selection derived from treating seed of Alpine with diethyl sulfate. Luther has a higher yield record than Alpine or White Winter. It is more lodging resistant than these two varieties because Luther is 5 to 7 inches shorter. Tests indicate that this short strawed mutant responds to fertilizer in most locations and can be fertilized with a minimum of lodging. Luther is more winter hardy than Alpine and considerably more winter hardy than White Winter.

Luther is a feed barley and is not acceptable to the malting industry.

### *Kamiak*

Kamiak is a winter barley similar to Hudson in appearance. The selection has been tested at Pullman, Pomeroy, and Dayton, where it has produced higher average yields than Hudson. It is about equal to Luther in most locations. Kamiak is equal to Hudson in winter hardiness with slightly larger kernel size than either Hudson or Luther. It is more lodging resistant than Hudson with shorter straw, but it is slightly taller than Luther. The test weight of Kamiak is higher than Luther, but slightly lower than Hudson. The variety matures about the same as Hudson, but is at least 10 days earlier than Luther. Kamiak does not have small, glume hairs which cause "itching" during the threshing of Luther.

Kamiak should perform well in Eastern Washington where Hudson is being grown.

## Oats

### *Cayuse*

Cayuse is a high yielding, moderately early spring oat recommended in Washington and Northern Idaho. It is a short, pale green variety with open and spreading heads. The straw is strong and resistant to lodging. The kernels are light yellow.

Cayuse has yielded 10 to 20 per cent more than Park in test plantings.

The main weakness of Cayuse is its test weight, which is relatively lower than that of Park. The test weight of Cayuse has averaged about 35 pounds per bushel in all Washington locations compared with 37 for Park.

Cayuse has some tolerance to the most serious oat disease in Washington—yellow dwarf or “red leaf of oats.” The yellow dwarf tolerance of Cayuse can be seen mainly in its high yielding ability. Discoloration results after severe attack by aphids carrying the virus.

No other disease of consequence has attacked Cayuse in any Washington locations since testing began in 1959.

Although Cayuse is susceptible to node blackening and stem break, these diseases do not affect oat yield in Washington.

### *Park*

Park is an attractive, stiff strawed, high yielding spring oat with plump, short, white kernels. It can be distinguished from most other oat varieties by its upright leaves, which are dark green in color. Park is a mid-season oat and is medium high. It rarely grows over 42 inches in height under irrigation. The heads are medium short and erect. Park has yielded about the same as Cody or Shasta. Park is recommended to replace Cody because it has more uniform straw height and kernel size. Park can be grown in Eastern Washington in areas with 14 or more inches of rainfall, on irrigated land in Central Washington, and in Western Washington.