

PROPOSAL FOR RELEASE OF ALPINE WINTER BARLEY

April 1961

Recommendation for release of Alpine barley:

Alpine winter barley has been tested at Pullman for the past four years and also at the off-station nurseries at Walla Walla, Pomeroy, and Dusty for the past three years. The results of the tests indicate that in early fall seeding Alpine will surpass White Winter in yield and will surpass Olympia in yield during good growing seasons. In commercial plantings Alpine appears to be more winter hardy than White Winter. It will not replace White Winter. However, because of the limited production of Olympia, this variety should be removed from the list of varieties recommended in Washington.

Reasons for recommendation for release:

- (a) The emphasis in the Winter barley breeding program has been to develop more winterhardy barley varieties to be grown in this area. Olympia and White Winter have been backcrossed to a very winterhardy composite cross. Until material is selected from these crosses, it would be a good idea to have a commercial variety with more winterhardiness than either Olympia or White Winter. Every so often these two commercial varieties freeze out to a certain extent. The Utah Station reports that Alpine is more winterhardy than White Winter. Since White Winter and Olympia are nearly equal in winterhardiness, we can assume that Alpine is at least equal to Olympia in winterhardiness and very likely is more winterhardy. These points have not been proven here, since all three varieties have had 100 per cent survival during the past three years. However, in commercial plantings, Alpine appears to have some advantage.
- (b) A second reason for the release of Alpine is the fact that it appears to have better threshability than either Olympia or White Winter. This is partially caused by the dehiscing nature of the awns on Alpine. The awns of the Alpine usually fall off before maturity, which essentially allows Alpine to be threshed as clean as beardless barley types. Olympia, especially, has a tendency to have poor threshing qualities because of long, rough awns.
- (c) A third reason for the release of Alpine is its ability to stand without shattering. Olympia, when left in the field too long after maturity, has a tendency to shatter extensively. The Alpine and White Winter shatter a little after maturity but not nearly so much as Olympia.
- (d) A fourth reason for the release of Alpine is that it will, over a period of years, probably produce average yields which will surpass Olympia and White Winter because of its reported greater winterhardiness and greater shatter resistance. In normal years, Olympia may outyield Alpine in later seedings. But Olympia will probably suffer more during cold winters and will lose more heads during summer storms than will Alpine, so these facts should push the balance in favor of Alpine over a period of years.
- (e) Alpine already has been released for Oregon growers and is now grown on an extensive acreage in Washington.

Area for release:

Alpine should perform well in most of the areas of Eastern Washington including the drier areas around Walla Walla, etc.

Seed Stocks:

Seed Stocks are available from Utah, and Bill Gregg has purchased 2 bushels of foundation seed. Several more bushels should be purchased this fall for distribution to our growers.

History:

Alpine resulted from a cross made at the Utah Agricultural Experiment Station [(Coast x Lion) x Winter Club] x Purdue 21.

Area of Production:

Alpine is suited to the drylands of the Intermountain West and also to irrigated lands. It appears to be adapted to areas in Washington, Oregon, Idaho, and Utah. Alpine gives best results when grown on well drained soils and when a reasonable growth takes place in the fall.

Agronomic Characteristics:

Yield:

Alpine appears to give good yields when seeded early in fall. It outyields Olympia and White Winter when seeded early but produced lower yields when seeded in late fall. It responds better to fertilizer than White Winter (Table 1)

Test Weight:

Alpine has a higher test weight than White Winter (Table 1)

Winterhardiness:

It is reported to be more winterhardy than White Winter and Olympia. At Pullman, none of the three have winterkilled during the last 4 years.

Maturity:

late compared to other winter varieties. It matures 2-3 days later than White Winter and about a week later than Olympia.

Straw strength:

Stiff. It appears to be stiffer than Olympia and about equal to White Winter.

Straw length:

Tall. Not much difference in plant height among Alpine, Olympia and White Winter.

Disease reaction:

Some resistance to smuts in Utah and to mildew in some areas. No diseases present in Alpine, Olympia, or White Winter during the last 3 years.

Utilization:

Alpine is now considered as a feed barley, at least until malting and brewing tests are completed. Growers have indicated that it does not "roll" as well as White Winter.

Description:

Plant:

Facultative winter growth habit.

Head:

6-row, dense, semi-club, erect, no overlapping of lateral kernels, and rachis edges are hairy.

Beard:

Rough, falls off easily.

Glume:

Numerous long hairs in wide band, and glume awn is 2 to 3 times the length of the glume.

Kernel:

Hull:

Adhering, smooth to slightly wrinkled.

Aleurone:

Blue.

Rachilla hairs:

Long.

Veins:

Prominent.

Crease:

Narrow, almost closed at base, flaring at beard end.

Kernel size:

Medium large.

Kernel shape:

Tapers gradually, wider at beard end, lateral kernels moderately twisted.

TABLE 1

Agronomic data on Alpine Barley at Pullman, Walla Walla, Pomeroy and Dusty

Variety	C.I. No.	Date seeded	Date headed	Date ripe	% Shat- tering	% Lodg- ing	% Survi- val	Test wt.	Yield		N F yield ave.	F yield ave.	
									NF	F			
1960													
Pullman	Alpine	9578	9/24	6-13	7-18	0	100	100	52.0	93.0	90.0	70.0	96.5
	Olympia	6107	9/24	6-2	7-12	5	100	100	53.9	103.7	99.7	81.5	94.7
	W.W.	592	9/24	6-10	7-12	0	100	100	49.7	85.5	86.2	71.6	91.1
											(2 year)	(2 year)	
Walla Walla	Alpine	9578	10/16			0	13	100	47.1	76.4	75.8	86.9	94.2
	Olympia	6107	10/16			0	37	100	48.2	65.5	74.8	80.9	97.6
	W.W.	592	10/16			0	35	100	46.2	72.0	65.2	87.8	91.6
											(3 year)	(2 year)	
Pomeroy	Alpine	9578	9/30			0	0	100	48.2	63.0	87.6	69.2	90.1
	Olympia	6107	9/30			0	0	100	51.2	62.1	75.0	68.7	79.5
	W.W.	592	9/30			0	0	100	47.2	67.5	61.9	61.8	77.4
											(2 year)	(2 year)	
Dusty	Alpine	9578	10/5			0	0	100	48.7	70.0	75.2	71.6	75.1
	Olympia	6107	10/5			0	0	100	50.4	57.1	66.3	66.8	69.8
	W.W.	592	10/5			0	0	100	48.3	60.5	65.1	66.4	77.4

N. F. Over-all average yield for four stations:

Alpine-----73.1  
 Olympia-----75.2  
 W.W.-----70.9