TECHNICAL BULLETIN NO. 735 • DECEMBER 1940

Yields of Barley Varieties in the United States and Canada

1932–36

By

G. A. WIEBE
Agronomist
Division of Cereal Crops and Diseases
Bureau of Plant Industry

P. R. COWAN
Senior Assistant Cerealist, Barley Investigations
Experimental Farms Service
Dominion Department of Agriculture, Canada

and

LUCILLE REINBACH-WELCH
Junior Agricultural Statistician
Division of Cereal Crops and Diseases
Bureau of Plant Industry

UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

For sale by the Superintendent of Documents, Washington, D. C. • Price 10 cents

show that Wisconsin Barbless (Pedigree 38) produced the highest yield (table 11). The next highest yielding variety is Alpha, a two-rowed sort. It was also high in yield in the previous 5-year period, 1927–31.

Wisconsin Barbless (Pedigree 38) is recommended as a market and feed barley for Michigan. Spartan is a good variety where barley is used principally for feed or as a nurse crop. It is particularly suited to this latter use because of its early maturity, stiffness of straw, and sparse foliage. Barley should be seeded as soon as the ground can be properly prepared in the spring, at the rate of 1½ to 2 bushels per acre.

TABLE 11.—*Acre yields of varieties of barley grown at the Michigan Agricultural Experiment Station, East Lansing, in 1 or more of the years 1932–36*

[Data obtained through the courtesy of the Michigan Agricultural Experiment Station]

Variety	C. I. No.	Station No.	Number of plots and acre yield [1]										Average yield, 1932–36	Number of years grown and yield in comparison with standard variety for comparable years	
			1932		1933		1934		1935		1936				
			Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield		Years	Yield
				Bu.		*Bu.*		*Bu.*		*Bu.*		*Bu.*	*Bu.*		*Pct.*
Michigan-Two-Rowed (Heil Hanna No. 1)	2782	124	59	53.0	4	31.9	6	17.6	6	51.5	6	41.3	39.1	5	116.9
Spartan [2]	5027	68	2	42.4	83	25.7	107	16.8	101	46.0	94	36.2	33.4	5	100.0
Alpha	959	121	2	58.5	4	29.5	6	16.6	6	57.0	6	41.6	40.6	5	121.6
Wisconsin Barbless (Pedigree 38)	5105	180	2	65.7	4	28.8	6	21.2	6	59.3	6	41.6	43.3	5	129.6
Oderbrucker (Wisconsin Pedigree 9)	1275	101	2	41.1	4	32.4	6	17.1	6	45.1	6	36.9	34.5	5	103.3
Velvet	4252	95	2	50.0	4	28.8	6	17.8	6	53.8	6	39.8	38.0	5	113.8
Glabron	4577	99	2	46.2	4	30.1	6	17.6	6	52.4	6	40.9	37.4	5	112.0
Minnesota 450	4646	100	2	54.7	4	27.0	6	10.7	6	60.3	6	38.0	38.1	5	114.1
Trebi	936	137	2	53.8	4	28.5	6	14.9	6	53.8	6	42.3	38.7	5	115.7

[1] Plots consisted of 5 16-foot rows of which the center 3 were harvested.
[2] Standard variety with which others are compared.

MINNESOTA

MINNESOTA AGRICULTURAL EXPERIMENT STATION, UNIVERSITY FARM, ST. PAUL

F. R. IMMER, *professor of agronomy, geneticist, Division of Agronomy and Plant Genetics*

Yield tests for Minnesota are reported from six stations (table 12). For the State as a whole the highest yielding varieties are Wisconsin Barbless (Pedigree 38) and Trebi. The varieties recommended for all sections of the State are Wisconsin Barbless (Pedigree 38), Velvet, Glabron, Peatland, and Improved Manchuria (C. I. 2330). Peatland is recommended particularly for peat lands or in regions where scab is a serious problem. It has produced high yields at the Grand Rapids station. Minsturdi is grown to a very limited extent on very heavy soil. Where malting barley is grown, the recommended varieties are Wisconsin Barbless (Pedigree 38), Velvet, Improved Manchuria, and Peatland. Glabron is recommended only for feed. Trebi is no longer

TABLE 12.—*Acre yields of varieties of barley grown at the Minnesota Agricultural Experiment Station, University Farm, St. Paul; at the Southeast Experiment Station, Waseca; at the West Central Experiment Station, Morris; at the Northwest Experiment Station, Crookston; at the North Central Experiment Station, Grand Rapids; and at the Northeast Experiment Station, Duluth, in 1 or more of the years 1932–36*

[Data obtained through the courtesy of the Minnesota Agricultural Experiment Station]

Station and variety	C. I. No.	Station No.	Number of plots and acre yield										Average yield, 1932–36	Number of years grown and yield in comparison with standard variety for comparable years	
			1932		1933		1934		1935		1936				
			Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield		Years	Yield
St. Paul:				Bu.		Bu.		Bu.		Bu.		Bu.	Bu.		Pct.
Improved Manchuria	2330	184	3	26.9	3	27.1	3	12.7	3	51.9	3	22.7	28.3	5	91.8
Velvet [1]	4252	447	3	26.8	3	38.2	3	15.0	3	57.0	3	17.0	30.8	5	100.0
Wisconsin Barbless (Pedigree 38)	5105	529	3	3.80	3	38.8	3	5.5	3	63.3	3	18.3	32.8	5	106.4
Trebi	936	448	3	29.1	3	45.9	3	14.6	3	62.1	3	25.3	35.4	5	114.9
Minsturdi	1556	439	3	25.8	3	40.4	3	16.3	3	62.1	3	30.9	35.1	5	114.0
Peatland	5267	452	3	28.1	3	31.0	3	5.4	3	51.9	3	11.0	25.5	5	82.7
Svansota	1907	440	3	27.4	3	36.2	3	2.9	3	56.7	---	-----	-----	4	89.9
Spartan	5027	460	3	25.9	3	43.3	3	9.3	3	64.4	---	-----	-----	4	104.3
Smooth Awn × Manchuria	5998	462	3	25.6	3	34.8	3	12.0	3	49.4	---	-----	-----	4	88.9
Manchuria × Smooth Awn	4667	457	3	26.4	3	40.8	3	19.6	3	60.0	---	-----	-----	4	107.2
Svanhals × Lion	5999	474	3	30.9	3	30.9	3	6.6	3	58.9	---	-----	-----	4	92.9
Glabron	4577	445	---	-----	3	34.4	3	13.6	3	46.0	3	24.0	-----	4	92.8
Oderbrucker (Wisconsin Pedigree 5–1)	4666	528	---	-----	3	26.0	3	6.1	3	43.3	3	10.3	-----	4	67.4
Odessa	182	564	---	-----	3	32.9	3	13.8	3	53.6	3	21.7	-----	4	95.9
South Dakota 1340 (Lion × Manchuria)	6001	565	---	-----	3	41.1	3	10.1	3	61.1	3	31.8	-----	4	113.3
Waseca:															
Improved Manchuria	2330	184	3	33.5	3	44.8	3	18.9	3	53.5	3	38.0	37.7	5	91.9
Velvet [1]	4252	447	3	37.4	3	53.5	3	18.5	3	56.5	3	39.4	41.1	5	100.0
Glabron	4577	445	3	37.7	3	59.6	3	22.6	3	59.0	3	42.8	44.3	5	108.0
Wisconsin Barbless (Pedigree 38)	5105	529	3	58.2	3	65.9	3	22.1	3	72.3	3	45.0	52.7	5	128.3
Trebi	936	448	3	49.2	3	62.1	3	25.3	3	66.9	3	55.9	51.9	5	126.4
Minsturdi	1556	439	3	41.0	3	54.7	3	19.9	3	61.3	3	46.6	44.7	5	108.9
Peatland	5267	452	3	36.0	3	59.1	3	11.3	3	47.8	3	38.5	38.5	5	93.9
Svanhals × Lion	5999	474	3	36.7	3	46.9	3	27.7	3	63.7	---	-----	-----	4	105.5
Spartan	5027	460	3	33.2	3	56.8	3	8.8	3	61.3	---	-----	-----	4	96.5
Smooth Awn × Manchuria	5998	462	3	44.7	3	58.4	3	23.0	3	57.8	---	-----	-----	4	100.8
Manchuria × Smooth Awn	4667	457	3	42.2	3	57.8	3	26.8	3	51.1	---	-----	-----	4	107.2
Svansota	1907	440	3	38.5	---	-----	---	-----	---	-----	---	-----	-----	1	102.9
Oderbrucker (Wisconsin Pedigree 5–1)	4666	528	---	-----	3	46.4	3	13.8	3	40.4	3	36.5	-----	4	81.7
Odessa	182	564	---	-----	3	62.0	3	17.4	3	61.2	3	39.3	-----	4	107.1
South Dakota 1340 (Lion × Manchuria)	6001	565	---	-----	3	58.0	3	13.3	3	54.5	3	48.0	-----	4	103.5
Manchuria (N. Dak. 2121)	2947	---	---	-----	---	-----	3	15.8	3	40.7	---	-----	-----	2	75.3
Morris: [2]															
Improved Manchuria	2330	184	3	34.4	---	-----	---	-----	3	34.2	3	23.3	30.6	3	95.1
Velvet	4252	447	3	38.8	---	-----	---	-----	3	36.7	3	21.1	32.2	3	100.0
Glabron	4577	445	3	35.1	---	-----	---	-----	3	33.8	3	23.8	30.9	3	96.0
Wisconsin Barbless (Pedigree 38)	5105	529	3	47.2	---	-----	---	-----	3	55.2	3	20.1	40.8	3	126.8
Trebi	936	448	3	46.6	---	-----	---	-----	3	43.8	3	26.1	38.8	3	120.6
Peatland	5267	452	3	43.2	---	-----	---	-----	3	49.1	3	18.1	36.8	3	114.3
Smooth Awn × Manchuria	5998	462	3	47.0	---	-----	---	-----	3	34.0	---	-----	-----	2	107.3
Manchuria × Smooth Awn	4667	457	3	43.5	---	-----	---	-----	3	31.5	---	-----	-----	2	99.3
Svanhals × Lion	5999	474	3	43.8	---	-----	---	-----	3	48.9	---	-----	-----	2	122.8
Oderbrucker (Wisconsin Pedigree 5–1)	4666	528	---	-----	---	-----	---	-----	3	34.3	3	19.0	-----	2	92.2
Odessa	182	564	---	-----	---	-----	---	-----	3	41.9	3	25.7	-----	2	117.0
South Dakota 1340 (Lion × Manchuria)	6001	565	---	-----	---	-----	---	-----	3	35.1	3	20.1	-----	2	95.5

[1] Standard variety with which others are compared.
[2] No yields are reported at Morris in 1933 and 1934, because of a crop failure owing to drought.

TABLE 12.—*Acre yields of varieties of barley grown at the Minnesota Agricultural Experiment Station, University Farm, St. Paul; at the Southeast Experiment Station, Waseca; at the West Central Experiment Station, Morris; at the Northwest Experiment Station, Crookston; at the North Central Experiment Station, Grand Rapids; and at the Northeast Experiment Station, Duluth, in 1 or more of the years 1932–36*—Continued

Station and variety	C. I. No.	Station No.	Number of plots and acre yield												Number of years grown and yield in comparison with standard variety for comparable years	
			1932		1933		1934		1935		1936		Average yield, 1932–36			
			Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield			Years	Yield
Crookston:				Bu.		Bu.		Bu.		Bu.		Bu.	Bu.			Pct.
Improved Manchuria	2330	184	3	33.0	3	26.2	3	49.4	3	40.0	3	8.2	31.4		5	93.5
Velvet [1]	4252	447	3	32.1	3	35.6	3	47.2	3	40.6	3	12.6	33.6		5	100.0
Glabron	4577	445	3	26.2	3	28.4	3	52.1	3	32.9	3	11.5	30.2		5	89.9
Wisconsin Barbless (Pedigree 38)	5105	529	3	35.9	3	44.5	3	51.4	3	45.2	3	8.8	37.2		5	110.5
Trebi	936	448	3	41.8	3	22.8	3	65.1	3	56.5	3	23.1	41.9		5	124.5
Peatland	5267	452	3	25.2	3	35.3	3	44.7	3	52.0	3	6.7	32.8		5	97.5
Smooth Awn × Manchuria	5998	462	3	30.5	3	31.3	3	60.5	3	37.3					4	102.6
Manchuria × Smooth Awn	4667	457	3	34.3	3	27.6	3	57.6	3	43.0					4	104.5
Svanhals × Lion	5999	474	3	32.0	3	36.1	3	51.5	3	40.6					4	103.1
Svansota	1907	440	3	20.6											1	64.2
Oderbrucker (Wisconsin Pedigree 5–1)	4666	528			3	34.7	3	48.2	3	32.5	3	4.1			4	87.9
Odessa	182	564			3	33.3	3	59.3	3	44.0	3	17.2			4	113.1
South Dakota 1340 (Lion × Manchuria)	6001	565			3	8.8	3	56.8	3	42.0	3	13.9			4	89.3
Grand Rapids:																
Improved Manchuria	2330	184	3	22.1	3	10.1	3	29.3	3	28.6	3	18.0	21.6		5	94.6
Velvet [1]	4252	447	3	32.2	3	8.0	3	40.4	3	26.0	3	7.7	22.9		5	100.0
Glabron	4577	445	3	14.4	3	14.2	3	37.3	3	21.4	3	12.8	20.0		5	87.6
Wisconsin Barbless (Pedigree 38)	5105	529	3	20.7	3	10.6	3	43.3	3	25.1	3	9.0	21.7		5	95.1
Trebi	936	448	3	20.7	3	15.5	3	42.6	3	33.5	3	19.0	26.3		5	114.9
Peatland	5267	452	3	26.8	3	14.4	3	43.2	3	35.6	3	16.5	27.3		5	119.4
Smooth Awn × Manchuria	5998	462	3	19.9	3	10.9	3	39.5	3	31.5					4	95.5
Manchuria × Smooth Awn	4667	457	3	19.5	3	12.7	3	35.5	3	29.7					4	91.4
Svanhals × Lion	5999	474	3	18.6	3	9.8	3	44.5	3	24.5					4	91.4
Svansota	1907	440	3	16.6											1	51.6
Oderbrucker (Wisconsin Pedigree 5–1)	4666	528			3	10.1	3	26.7	3	23.8	3	13.0			4	89.6
Odessa	182	564			3	14.0	3	42.5	3	28.0	3	14.4			4	120.5
South Dakota 1340 (Lion × Manchuria)	6001	565					3	31.8	3	25.9	3	15.0			3	98.1
Duluth:																
Improved Manchuria	2330	184	3	22.6	3	38.4	3	55.7	3	24.6	3	12.0	30.7		5	108.6
Velvet [1]	4252	447	3	22.5	3	30.4	3	51.8	3	27.5	3	8.9	28.2		5	100.0
Glabron	4577	445	3	25.9	3	36.3	3	50.3	3	21.4	3	12.9	29.4		5	104.0
Wisconsin Barbless (Pedigree 38)	5105	529	3	29.3	3	60.1	3	73.4	3	40.5	3	10.3	42.7		5	151.4
Trebi	936	448	3	30.6	3	35.8	3	75.5	3	30.5	3	21.2	38.7		5	137.2
Peatland	5267	452	3	31.4	3	41.7	3	50.7	3	33.0	3	17.5	34.9		5	123.5
Svansota	1907	440	3	22.2	3	33.5	3	54.7	3	23.0					4	100.9
Smooth Awn × Manchuria	5998	462	3	22.5	3	34.7	3	64.0	3	17.9					4	105.2
Manchuria × Smooth Awn	4667	457	3	22.7	3	21.6	3	58.0	3	24.5					4	95.9
Oderbrucker (Wisconsin Pedigree 5–1)	4666	528			3	32.9	3	38.8	3	19.2	3	9.2			4	84.4
Odessa	182	564			3	44.1	3	54.5	3	33.0	3	17.4			4	125.6
South Dakota 1340 (Lion × Manchuria)	6001	565					3	51.2	3	27.0	3	14.2			3	104.8
Svanhals × Lion	5999	474			3	34.1	3	48.4	3	24.5					3	97.4

[1] Standard variety with which others are compared.

a recommended variety, primarily because of trade preferences for other types of barley. The Waseca station represents the important barley area of the State more nearly than any of the other stations. Here, Wisconsin Barbless (Pedigree 38) is the best variety.

Barley should be seeded as early as the ground can be prepared. This can usually be done by April 10 in some parts of the State, although in others it may not be possible before April 25. The recommended seeding rate is 2 bushels per acre.

MISSOURI

AGRICULTURAL EXPERIMENT STATION, COLUMBIA

B. M. KING, *assistant professor, Department of Field Crops*

Yield tests for Missouri are reported from two stations (table 13). At Columbia, the yields are from field plot tests in 1932, 1933, and 1934 and from nursery rows in 1935 and 1936; at Elsberry, they are from field plot tests only. At Columbia, the yields are from fall seeding and, of the varieties grown for 4 years, the highest yielding ones are Alaska, Tennessee Winter selection 52, and Wisconsin Winter.

TABLE 13.—*Acre yields of varieties of barley grown at the Missouri Agricultural Experiment Station, Columbia, and at the experiment field at Elsberry in 1 or more of the years 1932–36*

[Data for Columbia obtained through the courtesy of the Missouri Agricultural Experiment Station and for Elsberry in cooperation with the station]

Station and variety	C. I. No.	Station No.	Number of plots and acre yield										Average yield, 1932–36	Number of years grown and yield in comparison with standard variety for comparable years	
			1932		1933		1934		1935		1936				
			Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield	Plots	Yield		Years	Yield
Columbia:															
Fall-sown				*Bu.*		*Bu.*		*Bu.*		*Bu.*		*Bu.*	*Bu.*		*Pct.*
Hooded Winter (Va.)	------	B 210	2	19.8	---	-----	2	14.5	5	29.9	5	15.8	-----	4	101.7
Bearded Winter (Mo.)	------	B 215	2	26.8	2	28.9	2	13.1	5	33.5	5	21.1	24.7	5	112.0
Kentucky No. 1 [1]	6050	B 216	2	17.1	2	30.7	2	17.8	5	26.0	5	17.8	21.9	5	100.0
Kentucky No. 4	------	B 217	2	4.7	---	-----	---	-----	5	25.9	5	13.2	-----	3	71.9
Tennessee Winter selection 52	3543	B 218	---	-----	2	22.5	2	16.1	5	47.6	5	21.1	-----	4	116.3
Tennessee Beardless 5 (Beardless 5)	3384	B 219	---	-----	2	19.4	2	15.0	5	24.2	5	11.2	-----	4	75.6
Hooded Winter (Tenn.)	------	B 232	---	-----	2	20.7	2	8.9	5	26.4	5	15.2	-----	4	77.1
Kentucky No. 5	------	B 269	---	-----	2	17.5	2	33.2	5	19.8	---	-----	-----	3	94.6
Kentucky No. 2	6148	B 285	---	-----	2	16.8	2	39.3	5	25.7	---	-----	-----	3	109.8
Tennessee Beardless 6 (Beardless 6)	2746	B 287	---	-----	2	13.0	2	-----	---	17.8	---	-----	-----	2	63.5
Wisconsin Winter	2159	B 236	---	-----	2	24.7	2	14.0	5	45.7	5	19.1	-----	4	112.1
Alaska	4106	B 237	---	-----	2	27.4	2	10.9	5	52.9	5	20.5	-----	4	121.0
Han River	2163	B 238	---	-----	2	30.9	2	9.3	5	47.1	5	15.1	-----	4	110.9
Hooded Winter (mass selection from B211–212)	------	B 233	---	-----	---	-----	---	-----	5	36.1	5	10.6	-----	2	106.6
Unnamed	4298–1	B 244	---	-----	---	-----	---	-----	5	23.4	---	-----	-----	1	90.0
Do	4299–2	B 245	---	-----	---	-----	---	-----	5	28.1	5	5.9	-----	2	77.6
Hankow	197	B 246	---	-----	---	-----	---	-----	5	25.3	5	10.6	-----	2	82.0
Alaska	534	B 247	---	-----	---	-----	---	-----	5	44.0	5	23.8	-----	2	154.8
Popeline	704	B 249	---	-----	---	-----	---	-----	5	23.2	5	7.9	-----	2	71.0
Black Russian	705	B 250	---	-----	---	-----	---	-----	5	38.1	5	11.2	-----	2	112.6
Venus	736	B 251	---	-----	---	-----	---	-----	5	22.9	5	4.6	-----	2	62.8

See footnotes at end of table.