Kentucky Small Grain Variety Trials–1971

By Charles R. Tutt, Morris J. Bitzer, Verne C. Finkner, and James Herbek

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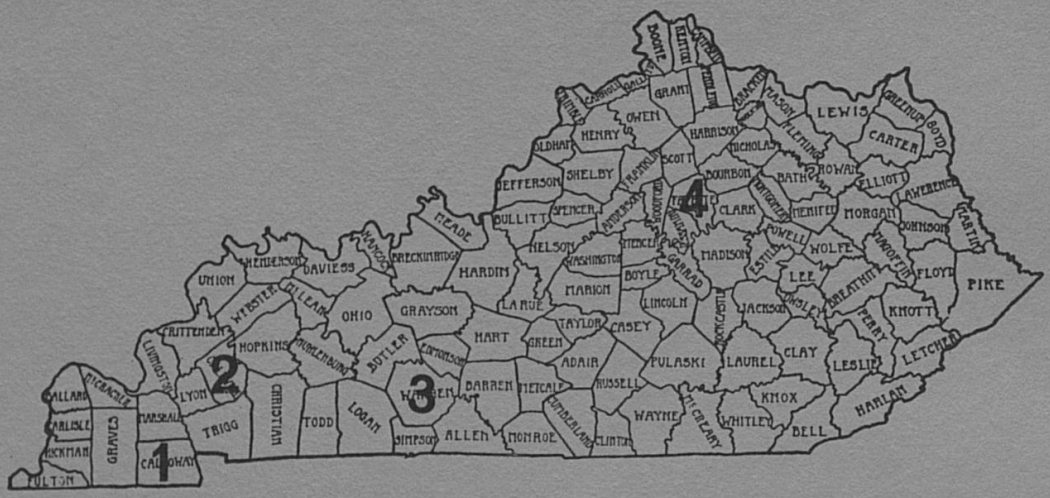
TESTING LOCATIONS OF THE KENTUCKY SMALL GRAIN VARIETY TRIALS–1971



Location	*Cooperator*
1. Murray	Murray State University Agriculture Department
2. Princeton	West Kentucky Substation
3. Bowling Green	Western Kentucky University Agriculture Department
4. Lexington	Kentucky Agricultural Experiment Station

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Small grains are an important agronomic crop in Kentucky. With the increased utilization of double cropping and demand for more feed grain, small grain acreage increased from 231-thousand acres in 1970 to 267-thousand acres in 1971. Barley acreage increased from 3- to 56-thousand acres, wheat from 170- to 190-thousand acres, and oats from 18- to 21-thousand acres. Similar or higher increases are expected for 1972.

TEST OBJECTIVES

Small grain variety tests are conducted annually by the Kentucky Agricultural Experiment Station to help growers select superior varieties for their farms. New varieties are continually being developed by agricultural experiment stations and commercial firms. The new and established varieties are compared at several locations in Kentucky, and this progress report includes a summary of results for the past five years. Continued testing and evaluation of small grain varieties and selections are essential if farmers, seedsmen and other agricultural workers are to be provided with information to help them select the varieties best adapted to their locality and individual requirements.

Information on varietal performance is presented from three locations in the state (Lexington, Bowling Green, and Princeton). In comparing the performance of varieties, data from the area which most nearly represents the grower's conditions should be used.

Recommendations are revised each year because of the availability of new varieties, improvements in production practices, and continually changing disease and insect hazards.

1971 CROP CONDITIONS

A record high state average yield of 40 bushels per acre for wheat was reported for Kentucky by the Crop Reporting Service. Near-record state average yields were also reported for barley (59 bushels per acre) and for oats (46 bushels per acre). These data reflect a favorable growing season during 1970-71. Increased acreage of Arthur wheat contributed to the record wheat yield. The only disease which affected these crops in 1971 was barley yellow dwarf virus. The most seriously affected were barley and oats; however, some wheat fields were affected by this disease. Barley yellow dwarf is a virus disease transmitted by aphids. Since resistant varieties are not available, control of this disease is difficult. Infection often occurs in the fall but is not noticed until the following spring. This makes insect control nearly impossible. A few reports of localized disease and unfavorable weather conditions were received. It is hoped that data reported in this progress report will contribute to continued increase in the quantity and quality of Kentucky produced small grains.

PERFORMANCE DATA

The barley, wheat, and oat variety trials were conducted at Murray, Princeton, Bowling Green and Lexington in 1971. However, the trials at Murray were completely destroyed by birds, and no data are presented from this location. Results for previous years from Murray are available in the 1970 reports. Commercial varieties and experimental lines developed by public and private agencies were grown in these tests.

Since results vary from year to year, two-, three-, four-, and five-year averages are presented from which to obtain a more accurate picture of varietal performance when compared with annual data.

EXPERIMENTAL METHODS

A randomized complete block with four replications was used in all trials. Each experimental plot consisted of four rows, 1 foot apart and 10 feet long. The plots were planted with a specially built four-row seeder, and the data were taken from the two center rows of each plot.

All experimental areas were fallowed the previous year and a legume crop was plowed under prior to the fall seeding.

DATA COLLECTED

It is important to consider characteristics other than grain yield when selecting a variety.

Grain yield was taken by cutting the two center rows of each plot and threshing the grain through a stationary plot thresher. The weights of each plot were recorded in grams and converted to bushels per acre.

Test weight, or the weight of a bushel of grain, is a measure of the quality of grain. The higher the test weight, the higher the quality and market value, unless the grain has been down-graded because of another quality factor.

Lodging was recorded as the percentage of the total plants that were lying on the ground or leaning at a 45-degree angle from the vertical when the grain was mature. The term "maturity" as used in this report refers to the date the grain was ready to be combine-harvested.

Plant height was reported as the number of inches from the ground to the tip of the upright grain head.

Survival was recorded as the percentage of plants which were estimated to have survived the winter. This is a measure of winterhardiness and is an important factor to consider when selecting a variety.

Date headed was reported as the number of days after March 31 when 50 percent of the heads had emerged from the plants in each plot. This is a measure of maturity and is important when selecting a variety for use in a double cropping system.

RESULTS AND DISCUSSION

The performance of the 1971 trials and of the previous five years are presented by crop and location in a tabular form. Since the genetic expression of a variety is greatly influenced by the environment, it is best to have several years' data from which to draw conclusions. If a variety has only been tested for two years, it should not be compared against a four- or five-year average of another variety, since it is possible that one of the other years was extremely good or poor and not comparable.

Yields reported in these trials should not be considered the maximum potential for the varieties. High fertility was not used so that differential lodging data could be recorded. The yield of a variety is relative and should be compared with the yields of the other varieties in the same experiment and at the same location. Small differences in yield of only a few bushels per acre between two varieties from an individual test should not be interpreted to indicate the superiority of one variety over another. However, if one variety consistently out-yields another over a period of several years, the chances are that the differences are real and should be considered important.

Lodging data are quite difficult to interpret. A high-yielding variety should not necessarily be down-graded because of a high percentage of lodging for a given year and at a given location. Local weather conditions, such as heavy wind and rain, may cause a variety to lodge much more than it normally does. It should also be emphasized that a variety reported to be 50 percent lodged does not imply that only 50 percent of the grain can be harvested. With good equipment, if may be expected that almost all of the grain could be saved. Lodging data for a period of years should receive more consideration than annual lodging data since they will give a more accurate picture of varietal performance.

The 1971 performance data are presented in Tables 1 to 10. Comparisons for date of heading for the recommended and certified varieties are presented in Table 11. These comparisons are important for selecting varieties for a double cropping system. A summary of the small grain recommendations for 1972 is presented in Table 12.

Table 1.—Results of Barley Performance Trials at Lexington, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Survival	Date headed*
	bu.	lb./bu.	%	in.	%	
Five Year Average 1967-71						
Barsoy	82.5	50.0	16.9	34.9	99.4	27.0
Knob	66.9	45.9	25.6	34.6	92.8	31.5
Harrison	85.7	48.2	15.6	40.9	99.7	35.9
Jefferson	66.8	45.5	21.3	42.4	99.7	36.3
Dayton	54.5	43.6	57.5	39.0	76.6	32.7
Schuyler	86.7	44.7	43.8	36.9	99.4	42.1
Four Year Average 1968-71						
Barsoy	90.9	50.1	20.0	35.3	99.4	29.6
Knob	78.2	45.9	31.7	34.5	92.8	33.9
Harrison	87.2	48.0	20.0	40.9	99.7	37.2
Jefferson	74.8	45.6	27.5	42.2	99.7	37.4
Dayton	61.7	43.8	57.5	39.4	76.6	34.9
Schuyler	88.6	44.7	52.5	37.3	99.4	42.7
Lakeland	91.2	47.2	10.8	39.3	100.0	40.7
Paoli	77.2	45.7	40.8	32.9	100.0	33.6
Three Year Average 1969-71						
Barsoy	99.0	50.2	20.0	35.3	50.2	30.3
Knob	82.2	45.9	31.7	33.3	45.9	34.8
Harrison	94.9	47.8	20.0	41.1	47.8	38.8
Jefferson	83.7	45.5	27.5	41.9	45.5	38.9
Dayton	63.8	43.6	57.5	39.2	71.3	36.0
Schuyler	89.2	44.4	52.5	37.3	44.4	43.8
Lakeland	94.7	47.0	10.8	38.8	47.0	42.3
Paoli	82.3	45.6	40.8	32.8	45.6	34.2
Hanover	46.0	43.7	39.2	36.1	43.7	34.3
Rapidan	57.8	43.8	50.0	34.3	43.8	34.8
Two Year Average 1970-71						
Barsoy	106.6	51.0	30.0	36.8	98.8	28.4
Knob	80.5	46.6	45.0	33.6	88.1	33.9
Harrison	95.7	47.7	30.0	41.5	99.4	38.0
Jefferson	83.1	45.1	41.3	42.4	99.4	45.1
Dayton	69.1	44.8	43.8	39.8	61.3	44.8
Schuyler	95.0	44.0	47.5	37.8	98.8	44.0
Lakeland	92.4	47.3	16.3	39.5	100.0	47.3
Paoli	83.4	45.9	50.0	33.9	100.0	45.9
Hanover	33.0	43.3	52.5	35.6	50.0	43.3
Rapidan	43.9	44.1	55.0	34.1	50.0	44.1
McNair 601	71.0	46.1	37.5	36.4	78.8	46.1
1971 Results						
Barsoy	103.2	51.9	7.5	39.0	97.5	30.0
Knob	98.1	47.6	7.5	37.3	76.3	38.5
Harrison	119.4	49.6	0.0	46.5	98.8	42.3
Jefferson	104.1	47.0	25.0	48.0	98.8	42.5
Dayton	80.4	47.1	25.0	45.8	22.5	40.3
Schuyler	110.0	47.0	30.0	41.5	97.5	47.3
Lakeland	119.3	49.5	0.0	43.3	100.0	44.8
Paoli	103.0	48.0	45.0	38.0	100.0	36.3
Hanover	0.0	-	-	-	0.0	-
Rapidan	0.0	-	-	-	0.0	-
McNair 601	87.4	48.0	7.5	38.5	57.5	37.5
Keowee	97.2	49.3	17.5	42.0	52.5	43.3

* No. days after March 31.

Table 2.—Results of Barley Performance Trials at Princeton, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Survival	Date headed*
	bu.	lb./bu.	%	in.	%	
			Five Year Average 1967-71			
Barsoy	65.1	48.6	12.0	32.3	93.8	21.1
Knob	59.5	44.1	44.5	34.4	98.5	27.8
Harrison	68.0	48.7	22.8	38.9	98.5	32.1
Jefferson	69.1	44.6	22.8	40.4	98.8	32.0
Dayton	54.6	42.8	65.5	37.4	99.3	26.7
Schuyler	58.5	42.1	36.5	34.2	99.0	37.5
			Four Year Average 1968-71			
Barsoy	75.1	49.4	10.6	34.8	92.2	22.5
Knob	68.3	45.0	43.8	36.9	98.1	29.7
Harrison	73.4	49.0	25.3	41.5	98.1	33.4
Jefferson	77.1	44.9	27.2	43.6	98.4	33.4
Dayton	64.1	43.9	66.3	40.4	99.1	27.8
Schuyler	67.0	42.9	39.4	36.9	98.8	38.0
Lakeland	73.5	47.1	18.1	40.2	95.6	36.6
Paoli	75.6	46.3	25.9	32.9	97.2	30.7
			Three Year Average 1969-71			
Barsoy	80.6	49.4	5.8	34.5	89.6	22.2
Knob	75.0	45.1	44.6	36.5	97.5	30.3
Harrison	80.7	49.1	17.8	40.9	97.5	33.8
Jefferson	88.6	45.4	14.6	43.1	97.9	33.8
Dayton	70.9	44.4	55.8	39.6	98.8	27.8
Schuyler	71.1	43.1	35.0	36.7	98.3	38.6
Lakeland	80.4	47.2	9.2	39.4	94.2	37.2
Paoli	77.6	46.3	26.7	32.6	96.3	31.4
Hanover	82.2	43.6	44.2	39.3	94.2	31.8
Rapidan	76.9	43.8	47.1	37.8	97.9	32.0
			Two year Average 1970-71			
Barsoy	74.7	49.0	7.5	33.5	84.4	21.8
Knob	78.7	45.3	44.4	34.9	96.3	30.3
Harrison	83.2	48.9	9.4	39.3	96.3	34.4
Jefferson	88.6	45.1	11.9	41.8	96.9	34.0
Dayton	72.4	44.2	45.0	37.9	98.1	28.1
Schuyler	65.9	42.8	39.4	36.1	97.5	39.9
Lakeland	77.4	47.2	11.9	38.4	91.3	37.9
Paoli	70.8	46.1	28.8	32.1	94.4	32.9
Hanover	75.7	43.3	38.1	37.6	91.3	33.0
Rapidan	70.4	43.5	48.8	36.6	96.9	33.3
McNair 601	70.4	45.1	36.9	35.6	95.0	30.5
			1971 Results			
Barsoy	73.1	48.8	15.0	35.8	85.0	23.5
Knob	73.3	43.2	88.8	36.3	100.0	33.5
Harrison	81.4	49.1	18.8	41.3	97.5	38.0
Jefferson	89.0	45.5	23.8	43.3	95.0	38.3
Dayton	58.1	42.3	82.5	39.5	96.3	31.8
Schuyler	53.2	40.0	78.8	39.0	98.8	41.8
Lakeland	66.9	46.4	23.8	40.5	96.3	40.5
Paoli	73.5	45.8	57.5	35.0	95.0	35.8
Hanover	66.5	43.7	70.0	38.0	88.8	36.8
Rapidan	54.7	42.8	97.5	37.8	95.0	37.0
McNair 601	63.2	43.6	68.8	36.8	95.0	35.0
Keowee	59.3	47.2	100.0	39.5	100.0	36.5

* No. days after March 31.

Table 3.—Results of Barley Performance Trials at Bowling Green, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height
	bu.	lb./bu.	%	in.
		Five Year Average 1967-71		
Barsoy	45.1	48.8	1.0	28.9
Knob	41.8	44.9	11.5	30.1
Harrison	40.3	46.6	4.8	32.3
Jefferson	43.4	45.2	0.0	34.2
Dayton	45.9	44.4	28.5	33.3
Schuyler	41.4	45.6	10.0	27.3
		Four Year Average 1968-71		
Barsoy	54.6	48.8	1.3	31.4
Knob	47.5	45.6	14.4	32.1
Harrison	43.7	47.7	5.9	33.6
Jefferson	49.9	45.6	0.0	36.4
Dayton	52.5	45.8	29.4	35.3
Schuyler	47.7	46.1	12.5	28.6
Lakeland	50.2	47.6	0.0	33.4
Paoli	48.7	45.7	0.0	26.9
		Three Year Average 1969-71		
Barsoy	50.0	48.7	1.7	29.5
Knob	43.0	45.8	5.8	30.0
Harrison	40.7	47.6	0.0	31.6
Jefferson	48.1	45.6	0.0	34.1
Dayton	50.1	46.3	9.2	33.8
Schuyler	48.1	46.4	0.0	26.6
Lakeland	46.3	47.3	0.0	31.3
Paoli	42.4	45.5	0.0	24.6
Hanover	48.5	43.8	2.9	30.5
Rapidan	46.9	43.3	8.3	28.7
		Two Year Average 1970-71		
Barsoy	38.1	48.3	2.5	28.4
Knob	32.7	45.6	8.8	27.4
Harrison	32.7	47.1	0.0	28.3
Jefferson	41.3	45.3	0.0	31.6
Dayton	39.2	46.3	13.8	31.0
Schuyler	34.4	46.7	0.0	22.9
Lakeland	31.1	46.9	0.0	28.1
Paoli	31.3	45.2	0.0	22.4
Hanover	37.5	43.5	0.0	27.4
Rapidan	39.0	43.2	0.0	25.3
McNair 601	33.8	44.9	0.0	27.3
		1971 Results		
Barsoy	34.5	47.3	5.0	29.0
Knob	34.7	42.6	17.5	27.3
Harrison	27.0	45.0	0.0	28.0
Jefferson	35.2	44.6	0.0	31.8
Dayton	30.2	44.8	27.5	30.8
Schuyler	36.3	44.8	0.0	24.5
Lakeland	28.5	44.8	0.0	30.0
Paoli	32.8	44.4	0.0	23.5
Hanover	34.2	42.5	0.0	25.8
Rapidan	38.6	42.1	0.0	25.5
McNair 601	35.7	44.2	0.0	28.0
Keowee	38.7	46.4	0.0	28.5

* All varieties survived 100%

Table 4.—Results of Wheat Performance Trials at Lexington, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Date headed*
	bu.	lb./bu.	%	in.	
		Five Year Average 1967-71			
Arthur	54.8	60.5	36.5	42.6	41.2
Blueboy	62.3	54.7	11.0	39.8	44.4
Benhur	43.1	60.7	13.5	41.2	39.8
Knox 62	40.7	60.2	66.5	43.8	40.4
Monon	44.6	59.1	47.0	42.3	39.8
Redcoat	45.8	59.2	23.5	47.0	47.5
Riley 67	42.8	59.2	40.0	43.7	42.3
Lewis	44.0	58.4	33.0	41.8	41.0
		Four Year Average 1968-71			
Arthur	62.0	60.5	45.6	43.6	42.6
Blueboy	70.1	54.7	13.8	41.4	46.3
Benhur	49.1	60.7	16.9	43.5	41.6
Knox 62	44.4	60.2	83.1	44.8	42.8
Monon	51.1	59.0	58.8	44.3	42.0
Redcoat	51.2	59.2	29.4	49.1	47.8
Riley 67	47.2	59.1	50.0	45.1	44.1
Lewis	47.7	58.4	41.3	43.3	43.0
Logan	42.1	58.0	31.7	44.3	48.8
		Three Year Average 1969-71			
Arthur	65.0	60.6	37.5	42.1	43.4
Blueboy	66.3	54.6	16.7	40.5	47.5
Benhur	52.2	60.8	11.7	42.2	42.5
Knox 62	48.1	60.3	80.8	43.7	43.8
Monon	55.2	59.0	55.8	43.0	43.0
Redcoat	57.4	59.3	19.2	48.2	48.3
Riley 67	50.1	59.1	44.2	43.8	44.7
Lewis	50.1	58.3	38.3	42.2	44.0
Logan	56.2	58.0	31.7	44.3	48.8
		Two Year Average 1970-71			
Arthur	66.0	61.0	47.5	43.3	42.9
Blueboy	64.1	54.1	25.0	41.5	46.8
Benhur	53.7	61.5	12.5	43.3	41.8
Knox 62	49.9	61.0	83.8	45.3	42.9
Monon	57.2	59.2	53.8	44.8	42.3
Redcoat	56.7	58.9	27.5	49.0	47.6
Riley 67	51.6	59.6	48.8	45.1	44.0
Lewis	54.1	59.2	46.3	43.9	43.0
Logan	53.5	57.5	43.5	45.4	48.4
McNair 2203	62.7	58.0	53.8	39.8	43.4
McNair 4823	67.7	60.5	1.3	38.8	44.9
Arthur 71	63.7	60.8	73.7	42.1	42.9
		1971 Results			
Arthur	63.8	60.2	65.0	46.0	47.5
Blueboy	61.6	52.4	47.5	43.8	52.0
Benhur	55.8	61.7	20.0	47.0	46.5
Knox 62	44.3	60.2	90.0	48.0	47.5
Monon	57.1	59.5	82.5	47.8	47.0
Redcoat	58.5	58.0	55.0	50.3	52.3
Riley 67	49.6	58.8	80.0	48.5	48.8
Lewis	52.9	59.1	65.0	47.0	47.8
Logan	52.0	56.4	75.0	47.0	52.8
McNair 2203	65.2	58.6	55.0	41.0	47.8
McNair 4823	70.3	61.2	2.5	40.3	50.0
Arthur 71	65.7	60.1	70.0	44.8	47.5

* No. days after March 31.

Table 5.—Results of Wheat Performance Trials at Princeton, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Date headed*
	bu.	lb./bu.	%	in.	
		Five Year Average 1967-71			
Arthur	52.5	59.2	22.3	39.8	35.5
Blueboy	51.6	52.4	12.0	40.8	39.2
Benhur	42.8	58.1	21.0	41.5	34.5
Knox 62	40.8	58.7	45.8	42.9	34.9
Monon	37.5	57.1	44.3	41.7	34.7
Redcoat	45.4	57.7	10.0	46.9	43.5
Riley 67	36.1	56.6	39.0	42.0	38.0
Lewis	40.5	57.2	40.8	41.0	35.7
		Four Year Average 1968-71			
Arthur	53.4	59.3	27.8	41.9	37.8
Blueboy	52.6	52.2	15.0	42.4	42.1
Benhur	44.4	58.3	26.3	43.3	36.8
Knox 62	41.7	58.9	52.8	44.2	37.3
Monon	38.9	57.2	54.1	43.0	36.8
Redcoat	46.3	57.9	12.5	48.0	44.9
Riley 67	36.6	56.7	48.1	43.6	40.9
Lewis	42.1	57.3	50.9	42.8	38.0
Logan	48.1	56.9	23.8	45.6	44.6
		Three Year Average 1969-71			
Arthur	58.8	59.5	13.3	41.3	37.9
Blueboy	55.2	52.5	10.4	42.6	42.1
Benhur	47.8	58.4	9.6	43.1	36.8
Knox 62	46.0	59.1	47.1	43.7	37.9
Monon	42.7	57.5	47.5	43.0	36.8
Redcoat	47.1	58.0	7.9	48.2	45.4
Riley 67	37.9	56.9	36.7	43.5	40.7
Lewis	45.3	57.4	42.9	43.0	38.3
Logan	48.8	56.8	26.7	46.0	44.9
		Two Year Average 1970-71			
Arthur	56.2	59.6	8.1	39.8	38.6
Blueboy	57.1	52.6	0.0	41.6	41.9
Benhur	46.5	58.4	0.0	41.4	38.1
Knox 62	46.0	59.3	21.3	42.1	39.0
Monon	40.7	57.5	26.3	41.3	37.4
Redcoat	50.5	58.3	0.0	46.8	45.6
Riley 67	38.4	57.0	7.5	42.4	41.5
Lewis	49.2	57.7	14.4	41.5	38.5
Logan	53.6	57.0	8.8	45.1	44.9
McNair 2203	56.4	56.4	9.4	39.9	38.4
McNair 4823	49.4	57.0	0.0	36.5	44.1
Arthur 71	53.9	60.0	0.0	38.1	38.8
		1971 Results			
Arthur	63.9	60.0	16.3	42.0	40.8
Blueboy	63.8	52.1	0.0	43.0	44.5
Benhur	52.5	58.3	0.0	43.3	40.8
Knox 62	51.7	60.0	42.5	45.0	40.8
Monon	48.9	58.2	47.5	43.5	39.8
Redcoat	57.7	58.9	0.0	50.3	48.5
Riley 67	43.5	57.5	15.0	45.5	43.5
Lewis	54.2	57.7	28.8	43.5	41.0
Logan	57.8	57.6	17.5	48.0	47.0
McNair 2203	62.0	56.2	12.5	41.0	41.3
McNair 4823	51.2	57.1	0.0	37.0	47.3
Arthur 71	52.8	60.2	0.0	40.3	41.0

* No. days after March 31.

Table 6.—Results of Wheat Performance Trials at Bowling Green, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height
	bu.	lb./bu.	%	in.
		Five Year Average 1967-71		
Arthur	35.8	58.7	0.5	32.9
Blueboy	36.2	57.1	0.3	35.3
Benhur	29.8	57.9	3.5	35.1
Knox 62	32.3	58.9	18.5	38.9
Monon	31.7	57.1	4.0	36.3
Redcoat	31.2	57.7	0.5	40.0
Riley 67	31.2	57.2	11.8	36.4
Lewis	29.9	56.5	9.0	35.1
		Four Year Average 1968-71		
Arthur	38.4	58.9	0.0	34.5
Blueboy	40.0	57.6	0.3	36.7
Benhur	32.0	58.2	3.1	36.1
Knox 62	36.8	59.3	11.9	40.4
Monon	36.3	57.6	0.0	37.1
Redcoat	32.9	58.3	0.6	41.0
Riley 67	34.0	57.4	14.1	37.6
Lewis	33.6	57.2	8.8	36.6
Logan	43.1	58.6	0.0	39.3
		Three Year Average 1969-71		
Arthur	36.4	58.8	0.0	32.5
Blueboy	37.5	58.1	0.0	35.2
Benhur	30.5	58.2	0.0	34.8
Knox 62	37.8	59.2	0.0	39.4
Monon	34.9	57.5	0.0	35.3
Redcoat	32.2	58.4	0.0	38.7
Riley 67	32.3	57.5	0.0	35.7
Lewis	32.8	57.3	0.0	34.6
Logan	40.8	58.6	0.0	36.4
		Two Year Average 1970-71		
Arthur	32.1	58.8	0.0	31.1
Blueboy	33.7	58.4	0.0	33.9
Benhur	29.8	58.1	0.0	34.1
Knox 62	36.4	59.1	0.0	38.1
Monon	33.1	57.3	0.0	34.9
Redcoat	30.5	58.6	0.0	37.8
Riley 67	29.7	57.5	0.0	34.4
Lewis	30.3	57.2	0.0	32.9
Logan	35.7	58.8	0.0	34.8
McNair 2203	34.8	57.0	0.0	31.4
McNair 4823	31.6	59.7	0.0	30.4
		1971 Results		
Arthur	30.2	59.0	0.0	33.0
Blueboy	29.8	58.5	0.0	34.3
Benhur	26.3	58.3	0.0	34.5
Knox 62	36.3	59.7	0.0	40.8
Monon	31.0	56.6	0.0	37.0
Redcoat	33.1	59.0	0.0	39.0
Riley 67	30.0	57.6	0.0	37.0
Lewis	28.7	57.5	0.0	34.5
Logan	34.9	58.5	0.0	35.3
McNair 2203	28.4	56.4	0.0	30.0
McNair 4823	31.9	59.4	0.0	31.3
Arthur 71	31.2	59.3	0.0	30.8

Table 7.—Results of Winter Oat Performance Trials at Lexington, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Survival	Date headed*
	bu.	lb./bu.	%	in.	%	
			Five Year Average 1967-71			
Compact	72.0	33.5	37.5	33.6	69.3	49.3
Norline	76.6	34.6	48.8	46.1	71.5	44.9
Walken	69.3	31.8	35.8	38.8	65.0	54.6
			Four Year Average 1968-71			
Compact	65.0	33.1	56.3	33.1	62.8	49.3
Norline	75.2	34.5	68.8	44.7	69.1	43.3
Walken	65.9	31.8	42.5	38.5	58.1	52.9
			Three Year Average 1969-71			
Compact	71.3	32.9	56.3	35.9	63.8	59.5
Norline	78.5	34.2	68.8	46.0	69.2	55.9
Walken	67.4	31.5	42.5	40.4	56.3	63.8
Dubois	53.4	35.8	57.5	42.8	57.5	54.5
Coker 66-22	75.0	33.9	57.5	43.1	60.4	50.4
			Two Year Average 1970-71			
Compact	92.3	34.7	56.3	35.9	90.6	59.5
Norline	81.1	34.4	68.8	46.0	87.5	55.9
Walken	88.0	34.0	42.5	40.4	77.5	63.8
Dubois	75.3	37.8	57.5	42.8	82.5	54.5
Coker 66-22	90.0	34.9	57.5	43.1	80.0	50.4
Ky. 63-1935	93.8	34.5	43.8	42.8	98.1	63.6
			1971 Results			
Compact	116.5	35.4	15.0	37.3	87.5	63.0
Norline	99.7	33.9	42.5	49.3	75.0	61.5
Walken	103.4	33.2	0.0	39.0	55.0	68.0
Dubois	107.1	37.5	22.5	45.0	65.0	59.8
Coker 66-22	126.3	36.2	15.0	45.0	60.0	54.5
Ky. 63-1935	124.5	34.2	0.0	43.5	97.5	68.0

* No. days after March 31.

Table 8.—Results of Winter Oat Performance Trials at Princeton, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Survival	Date headed*
	bu.	lb./bu.	%	in.	%	
			Five Year Average 1967-71			
Compact	64.7	31.1	70.3	34.8	93.0	48.7
Norline	52.2	28.7	89.5	43.6	88.5	47.2
Walken	60.8	29.4	57.3	40.8	96.3	53.7
			Four Year Average 1968-71			
Compact	63.5	30.5	82.2	35.9	95.6	51.0
Norline	51.6	27.9	92.5	44.5	91.9	49.1
Walken	59.9	28.7	64.1	42.5	98.4	55.2
			Three Year Average 1969-71			
Compact	62.9	29.8	86.3	34.7	94.2	51.3
Norline	48.2	27.2	93.8	44.0	89.2	49.2
Walken	60.1	28.3	68.3	41.5	97.9	55.1
Dubois	60.4	32.0	67.9	42.6	83.3	47.6
Coker 66-22	87.4	33.6	66.7	41.1	82.1	42.1
			Two Year Average 1970-71			
Compact	70.0	30.3	79.4	33.9	93.8	51.3
Norline	50.3	27.2	90.6	43.9	87.5	48.9
Walken	66.0	29.0	52.5	41.3	96.9	56.1
Dubois	63.2	31.9	51.9	41.9	77.5	47.3
Coker 66-22	96.6	33.8	50.0	40.5	75.6	42.6
Ky 63-1935	63.6	28.8	50.6	42.4	91.9	56.1
			1971 Results			
Compact	86.1	31.9	58.8	35.3	87.5	54.0
Norline	57.2	29.3	82.5	44.5	77.5	50.8
Walken	86.0	30.5	16.3	43.0	93.8	59.5
Dubois	76.4	33.7	7.5	42.5	55.0	49.5
Coker 66-22	104.6	33.6	6.3	40.8	52.5	45.3
Ky 63-1935	79.6	30.9	2.5	43.0	83.8	58.5

* No. days after March 31.

Table 9.—Results of Winter Oat Performance Trials at Bowling Green, Ky.

Variety	Acre yield	Test weight	Lodging	Plant height	Date headed**
	bu.	lb./bu.	%	in.	
		Five Year Average 1967-71			
Compact	60.4	37.8	20.5	28.9	48.3
Norline	64.2	35.5	36.8	38.3	48.8
Walken	58.8	34.9	26.0	33.5	53.3
		Four Year Average 1968-71			
Compact	67.9	38.1	24.7	29.9	48.3
Norline	70.3	35.8	25.9	39.7	48.8
Walken	67.6	35.2	21.9	34.8	53.3
		Three Year Average 1969-71			
Compact	74.3	38.4	0.0	27.3	27.3
Norline	72.6	36.0	1.7	38.6	38.6
Walken	68.9	35.5	0.0	32.2	32.2
Dubois	61.7	37.5	7.1	34.8	34.8
Coker 66-22	72.7	37.7	2.5	34.6	34.6
		Two Year Average 1970-71			
Compact	82.3	38.5	0.0	34.5	48.3
Norline	82.8	36.1	0.0	38.6	48.8
Walken	75.4	35.5	0.0	31.1	53.3
Dubois	65.5	37.6	0.0	33.8	46.5
Coker 66-22	77.4	37.8	0.0	32.3	40.0
Ky 63-1935	67.7	34.3	0.0	30.9	55.0
		1971 Results			
Compact	61.3	40.3	0.0	23.8	48.3
Norline	76.3	36.9	0.0	35.8	48.8
Walken	60.1	38.4	0.0	29.0	53.3
Dubois	56.4	37.8	0.0	30.5	46.5
Coker 66-22	71.6	38.2	0.0	30.8	40.0
Ky 63-1935	55.5	35.2	0.0	30.0	55.0

* All varieties survived 100%
** No. days after March 31.

Table 10.—Results of Spring Oat Performance Trials in Kentucky.

Variety	Acre yield	Test weight	Lodging	Plant height	Date headed*
	bu.	lb./bu.	%	in.	
		Two Year Average 1969-70 at Princeton			
Andrew	30.3	24.6	73.1	35.9	60.4
Brave	24.8	22.4	78.1	34.3	60.9
Clintford	34.6	25.5	57.5	31.3	60.8
Diana	38.8	26.5	30.5	32.1	61.1
Grundy	30.9	23.7	70.0	31.8	59.8
Jaycee	30.3	21.2	71.3	32.0	60.4
		1970 Results at Princeton			
Andrew	23.5	24.3	48.8	29.8	63.5
Brave	20.7	21.6	56.3	29.3	63.8
Clintford	27.7	25.0	22.5	27.8	63.5
Diana	38.1	26.4	5.0	26.8	64.5
Grundy	24.0	22.8	55.0	27.5	62.3
Jaycee	26.3	20.4	42.5	26.3	63.5
		Two Year Average 1968-1971 at Lexington			
Andrew	59.6	29.7	22.5	37.8	72.6
Brave	61.3	31.4	31.2	36.5	73.2
Clintford	53.6	32.3	12.5	33.8	72.9
Jaycee	54.6	31.7	41.2	34.6	72.2
		1971 Results at Lexington			
Andrew	32.0	28.1	0.0	37.5	75.8
Brave	34.5	29.2	0.0	34.0	77.5
Clintford	32.0	28.7	0.0	32.5	76.8
Diana	32.4	27.0	0.0	32.5	77.0
Grundy	27.6	28.1	0.0	32.5	76.5
Jaycee	34.4	28.3	0 0	33.8	76.5

* No. days after March 31.

Table 11.—Comparisons for Date of Heading for Recommended and Certified Varieties of Barley, Wheat, and Oats in Kentucky.

Barley varieties	Date headed*	Wheat varieties	Date headed*	Oat varieties	Date headed*
Barsoy	21.6	Monon	35.8	Coker 66-22	38.0**
Dayton	27.3	Knox 62	36.2	Dubois	43.0**
Knob	27.8	Benhur	36.4	Norline	44.6
Jefferson	32.2	Arthur	36.8	Compact	47.1
Harrison	32.3	Arthur 71	36.8**	Walken	52.4
		Blueboy	40.4		
		Redcoat	44.3		

* Five year average, no. days after March 31.
** Estimated from less than five years' data.

RECOMMENDATIONS FOR 1972

A summary of the small grain varieties for 1972 is presented in Table 12. Varieties are labeled as recommended and/or certified. Those varieties which are superior in one or more characteristics important for the crop and have been tested by the Kentucky Agricultural Experiment Station for 3 or more years are recommended for production. Varieties that have been recommended for Kentucky, recently certified in another state, or approved by an appropriate National Varietal Review Board may be certified for production. The certified list will include, in addition to the recommended varieties, (1) varieties that may have potential for Kentucky and (2) older varieties that are still acceptable for production in Kentucky but are not as good as the recommended varieties.

Table 12.—Summary of Small Grain Recommendations for 1972.

Winter barley	Winter wheat	Winter oats
Recommended	Recommended	Recommended
Barsoy	Arthur	Coker 66-22
Harrison	Arthur 71*	Compact
Jefferson	Blueboy	Dubois
Knob		Norline
		Walken
Certified	Certified	Certified
Barsoy	Arthur	Coker 66-22
Dayton	Arthur 71*	Compact
Harrison	Benhur	Dubois
Jefferson	Blueboy	Norline
Knob	Knox 62	Walken
	Monon	
	Redcoat	

*Certified seed will not be available until spring of 1973.

A description of the varietal recommendations for 1972 follows:

WINTER BARLEY VARIETIES

Recommended winter barleys are less winter-hardy than winter wheat, but more so than winter oats. Winterhardiness,

straw strength, and maturity are important characteristics when choosing a variety. Barley performs best on good, well-drained soil and is not a poor land crop. It is an excellent feed grain for livestock when fed with the other grain crops. The varietal performance data are presented in Tables 1, 2, and 3.

Barsoy, a Kentucky released variety, is very early maturing and is excellent for double cropping. It has good lodging resistance, is short of stature, and is high yielding. It has medium-length awns which break off readily during threshing. Barsoy is susceptible to loose smut, but its earliness of maturity has permitted it to escape damage from most diseases. It has good winterhardiness and performs well in most areas in the state.

Knob is a recently released variety from the Kentucky Agricultural Experiment Station, It is a few days earlier in maturity than Harrison, but later than Barsoy; however, it matures faster after heading than the other varieties. It is a short, stiff-strawed, beardless variety with disease resistance similar to Barsoy. Knob is easily threshed and has good winterhardiness.

Harrison is an awned variety developed by Purdue University. It has performed well in Kentucky but is later maturing than Barsoy. It has better winterhardiness than Barsoy and Knob and is resistant to most of the barley diseases except loose smut.

Jefferson is quite similar to Harrison, but awnless.

Dayton is an older barley variety released by the Ohio Agricultural Experiment Station that has consistently yielded well in Kentucky. It is later maturing and not as high yielding as Barsoy.

SOFT RED WINTER WHEAT VARIETIES

Kentucky's climate and soils are well suited for the production of high quality soft red winter wheat. No one variety has all the desirable characteristics; each has certain advantages. Yielding ability, straw strength, height, earliness, grain quality and disease resistance are important in choosing a variety. Wheat is an excellent feed grain for livestock. Varietal performance is presented in Tables 4, 5, and 6.

Arthur is a high quality variety released by Purdue University in 1968. It is a short, early, high-yielding variety that is the best wheat variety for double cropping. Arthur has good straw strength, high-tillering ability and excellent winterhardiness. It is resistant to loose smut, powdery mildew, and moderately resistant to leaf rust. It is susceptible to the most common race of Hessian fly, race B.

Arthur 71 has just been released from Purdue University. It is very similar to Arthur, but has added resistance to leaf rust and Hessian fly, race B. Certified seed will not be available until 1973. Arthur 71 will be recommended as a replacement for Arthur as seed becomes available.

Blueboy is a highly productive, short, medium-to-late maturing, stiff-strawed variety that was released in 1967 by North Carolina State University. It responds well to high levels of fertilization but matures slower after heading than other varieties. It has a good soft wheat milling grain quality, but has a relatively low test weight with a high flour yield. Blueboy is susceptible to leaf rust, powdery mildew, and the common races of Hessian fly.

Benhur is an early-maturing variety with good resistance to most wheat diseases. It has not yielded as well as Arthur in Kentucky but is shorter and stiffer-strawed. Benhur was released by Purdue University in 1966.

Knox 62, released by Purdue University, has resistance to race B of Hessian fly and is slightly earlier maturing than Arthur.

Monon is the earliest maturing wheat in Kentucky, released by Purdue University, but has not yielded as well as Arthur. It has exceptional winterhardiness and is a short, stiff-strawed variety.

Redcoat is the best disease and lodging resistant variety released by Purdue University. It stands well under high fertility conditions, but it is later maturing than Blueboy and does not possess the oustanding high-yielding ability.

WINTER OAT VARIETIES

Winter oats are the least winterhardy of the winter grains. Early seeding, good fertilization practices, and planting on well-drained soils are recommended to minimize winter killing. Most winter oats are susceptible to the crown rusts so must be selected for maturity, lodging resistance, and yielding ability. Winter oats are excellent also for fall grazing and silage. The performance of the winter oat varieties is presented in Tables 7, 8, and 9.

Compact is a Kentucky developed winter oat variety that combines excellent lodging resistance and high test weight with good winter survival and high yield. It is shorter than Norline, equal in winter survival, and two days later in heading.

Walken is a short-statured, stiff-strawed, later maturing variety that has excellent winterhardiness. It was released in Kentucky to provide a winter oat with potential for high forage and grain yields.

Norline is an older Indiana oat variety that has yielded well in Kentucky. It has slightly more disease resistance than the other oat varieties.

Coker 66-22 is a newly recommended oat variety developed by Coker's Pedigreed Seed Company in South Carolina. It is a very early maturing oat with excellent straw strength and grain yield. The grain is of high test weight and quality. It has not survived as well at Lexington as the other varieties.

Dubois is an older Purdue University developed variety but has had a good performance record in Kentucky. Lodging resistance is not as good as Compact and Walken. Matures a few days earlier than Compact.

SPRING OATS FOR KENTUCKY

The University of Kentucky will not make any recommendations for spring oat varieties. The spring oat varieties tested in Kentucky (Table 10) are not superior or equal to any of the recommended winter oat varieties. Also, there are no spring oat

certified seed growers in Kentucky. However, since approximately one-third of the oat acreage in Kentucky is of the spring type, test data on spring oat varieties released in neighboring states are presented in Table 10. Spring oat varieties were tested at Lexington in 1968 and 1971 and at Princeton in 1969 and 1970.

The varieties listed in Table 10 were released by the following states: Andrew - Minnesota; Brave and Jaycee - Illinois; Clintford and Diana - Indiana; and Grundy - Iowa. Probably the most common variety grown by name in Kentucky is Brave. However, any of these varieties are acceptable. An important point to remember is that winter oat varieties are *not acceptable* for spring planting.

CERTIFIED SEED

Planting certified seed is one of the first steps in insuring a good small grain crop. The extra cost of certified seed is quite economical in view of the high quality of seed obtained. Certified seed is seed which has been grown in such a way as to insure the genetic identity and purity of a variety. Certified seed also helps to maintain freedom from weed and other crop seed and, in some cases, freedom from disease. The Agricultural Experiment Station recommends that Kentucky-certified seed be used whenever possible for growing commercial crops of small grains.

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