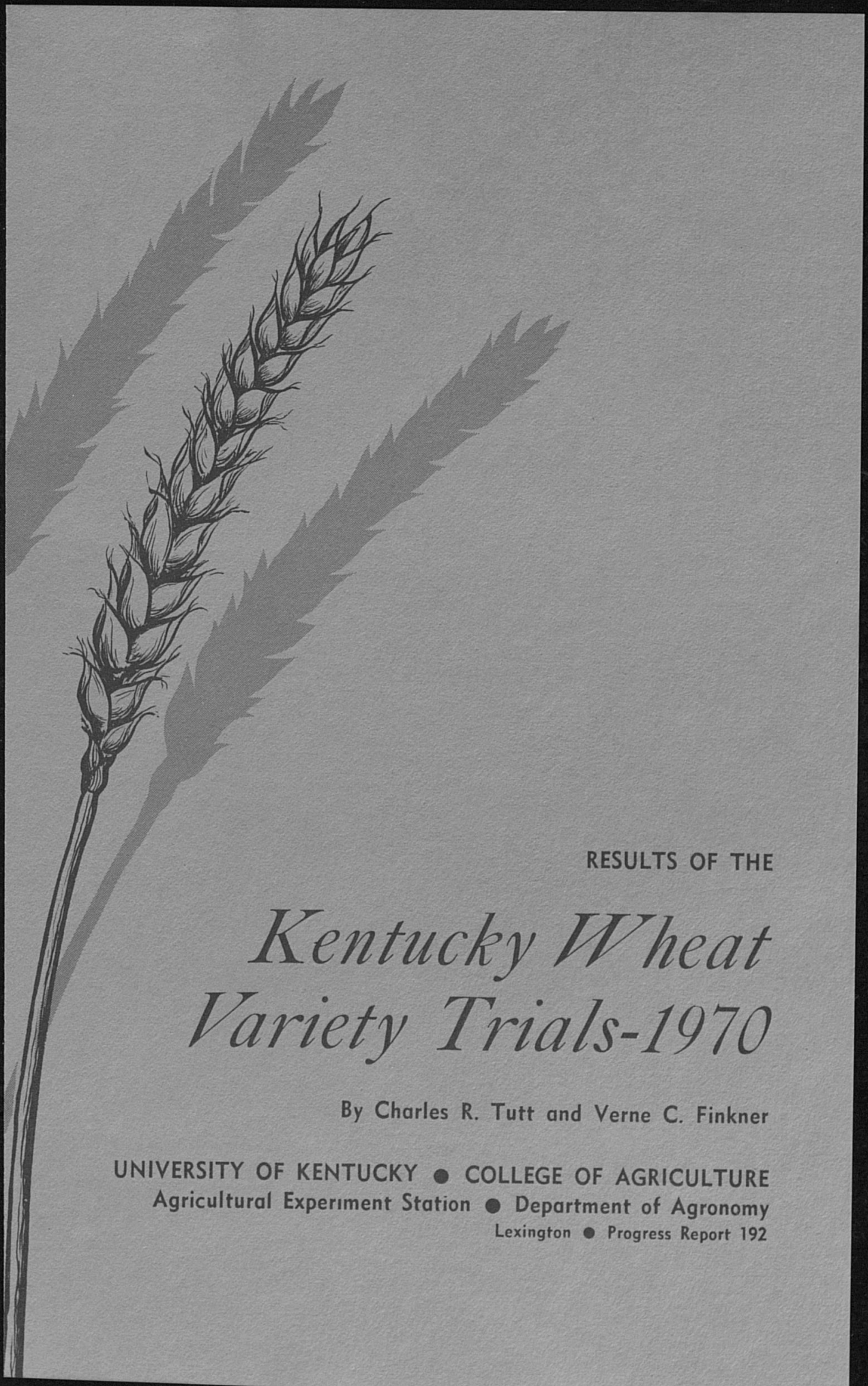

RESULTS OF THE

Kentucky Wheat Variety Trials-1970

By Charles R. Tutt and Verne C. Finkner

UNIVERSITY OF KENTUCKY ● COLLEGE OF AGRICULTURE
Agricultural Experiment Station ● Department of Agronomy
Lexington ● Progress Report 192

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TESTING LOCATIONS OF THE 1970 KENTUCKY WHEAT VARIETY TRIALS

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

Acknowledgment is made to John Byars, of the Department of Agronomy, and the University of Kentucky Computing Center, for assistance in summarizing the results reported in this progress report.

Kentucky Wheat Variety Trials 1970

By Charles R. Tutt and Verne C. Finkner

EXPERIMENTAL METHODS FOR 1970 VARIETY TRIALS

Environmental conditions and soil types may cause a variety to respond differently in different areas of Kentucky. For these reasons, the 1970 wheat variety trials were conducted at Murray, Princeton, Bowling Green and Lexington. The ultimate test for a variety is how it performs on an individual farm but performance in a test nearest your farm is a reliable selection guide.

Data are also collected for a period of years at each location. Since results vary from year to year, 3- and 4-year results give a more accurate picture of varietal performance than do annual data.

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

Each experimental plot consisted of four rows 1 foot apart and 13 feet long. Each variety was grown in four plots, placed at random over the test area, and the results presented in the tables are the average response of the four plots. The plots were planted with a specially built four-row seeder, and the data were taken from a 10-foot section of the two center rows of each plot.

Yield

Yields were taken by cutting a 10-foot section of each of the two center rows and threshing the grain through a stationary plot thresher. The weights of each plot were recorded in grams and then converted to bushels per acre.

Lodged

Lodging was reported as the percentage of the total plants that were lying on the ground or were leaning at a 45-degree angle from the vertical. Lodging was reported 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

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

Date Headed

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.

Survival

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

Test Weight

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 the higher the market value, unless the grain has been down-graded because of another quality factor.

INTERPRETATION

It is important to consider other characteristics in addition to yield before choosing a variety. Plant height,

lodging resistance, maturity date and grain quality may be of equal importance to yield in some production systems.

Yields reported in these trials should not be considered the maximum potential for the varieties. High fertilization rates were not used, so as to permit differences in lodging to be recorded.

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 normal. 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, one may expect to save almost all of the grain. 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 yield of a particular 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 in 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 significant and should be considered important.

For any small grain variety, the ultimate test is how it performs on an individual farm. Therefore to make a sound decision, it is wise to plant a few acres of a new variety and then compare the results with those of another variety presently being grown.

Kentucky Agricultural Experiment Station
1971 Recommended Winter Wheat Varieties

Arthur	Blueboy	Monon
Benhur	Knox 62	Redcoat

Certified Seed

Planting certified seed is one of the first steps in insuring a good wheat 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.

SUMMARY OF WHEAT VARIETIES

EVALUATED AT:

LEXINGTON

PRINCETON

MURRAY

BOWLING GREEN

Table 1. Summary of Wheat Varieties Evaluated at Lexington, Kentucky.

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
		Yield, Bushels Per Acre		
Arthur	68.2	65.6	61.4	52.6
Benhur	51.6	50.4	46.9	39.9
Blueboy	66.6	68.7	72.9	62.5
Knox 62	55.6	50.0	44.5	39.8
Lewis	55.3	48.6	45.9	41.8
Logan	54.9	58.2	58.2	--
McNair 2203	60.2	--	--	--
McNair 4823	65.0	--	--	--
Monon	57.3	54.2	49.1	41.5
Redcoat	55.0	56.8	48.7	42.7
Riley 67	53.5	50.3	47.3	41.1
Stadler	50.0	48.4	45.8	39.6
Triumph	56.2	50.9	47.6	42.1
Average	57.6	54.7	51.7	44.4
		Lodged at Maturity, Percent		
Arthur	30.0	23.8	39.2	29.4
Benhur	5.0	7.5	15.8	11.9
Blueboy	2.5	1.3	2.5	1.9
Knox 62	77.5	76.3	80.8	60.6
Lewis	27.5	25.0	33.3	25.0
Logan	12.5	10.0	10.0	--
McNair 2203	52.5	--	--	--
McNair 4823	0.0	--	--	--
Monon	25.0	42.5	50.8	38.1
Redcoat	0.0	1.3	20.8	15.6
Riley 67	17.5	26.3	40.0	30.0
Stadler	47.5	46.3	46.7	35.0
Triumph	55.0	52.5	65.0	48.8
Average	27.1	28.4	36.8	29.6
		Height, Inches		
Arthur	40.5	40.1	42.8	41.8
Benhur	40.5	39.8	42.3	39.8
Blueboy	39.3	38.9	40.6	38.8
Knox 62	42.5	41.5	43.8	42.8
Lewis	40.8	39.8	42.1	40.5
Logan	43.8	43.0	43.0	--
McNair 2203	38.5	--	--	--
McNair 4823	37.3	--	--	--
Monon	41.8	40.6	43.1	40.9
Redcoat	47.8	47.1	48.8	46.3
Riley 67	41.8	41.5	43.9	42.5
Stadler	44.0	43.8	46.1	44.4
Triumph	40.8	39.5	42.3	40.4
Average	41.5	41.4	43.5	41.8

Table 1. (continued)

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
	Date Headed, No. Days After March 31			
Arthur	38.3	41.4	40.9	39.6
Benhur	37.0	40.5	40.0	38.1
Blueboy	41.5	45.3	44.3	42.6
Knox 62	38.3	41.9	41.3	38.7
Lewis	38.3	42.1	41.4	39.3
Logan	44.0	46.8	46.8	--
McNair 2203	39.0	--	--	--
McNair 4823	39.8	--	--	--
Monon	37.5	41.0	40.3	37.9
Redcoat	43.0	46.3	46.3	46.3
Riley 67	39.3	42.6	42.5	40.7
Stadler	40.0	43.0	42.5	40.4
Triumph	36.0	39.8	39.5	37.4
Average	39.4	42.8	42.3	40.1
		Survival, Percent		
Arthur	100.0	100.0	100.0	100.0
Benhur	100.0	100.0	100.0	100.0
Blueboy	100.0	100.0	100.0	100.0
Knox 62	100.0	100.0	100.0	100.0
Lewis	100.0	100.0	100.0	100.0
Logan	100.0	100.0	100.0	--
McNair 2203	100.0	--	--	--
McNair 4823	100.0	--	--	--
Monon	100.0	100.0	100.0	100.0
Redcoat	100.0	100.0	100.0	100.0
Riley 67	100.0	100.0	100.0	100.0
Stadler	100.0	100.0	100.0	100.0
Triumph	100.0	100.0	100.0	100.0
Average	100.0	100.0	100.0	100.0
		Test Weight, Pounds Per Bushel		
Arthur	61.8	60.8	60.6	60.6
Benhur	61.2	60.3	60.3	60.3
Blueboy	55.8	55.7	55.8	55.7
Knox 62	61.8	60.3	60.2	60.2
Lewis	59.2	57.8	58.0	58.1
Logan	58.6	58.9	58.9	--
McNair 2203	57.4	--	--	--
McNair 4823	59.9	--	--	--
Monon	58.8	58.7	58.8	58.9
Redcoat	59.8	60.0	59.7	59.6
Riley 67	60.4	59.3	59.2	59.4
Stadler	61.4	60.5	60.6	60.5
Triumph	62.1	60.6	60.4	60.5
Average	59.9	59.4	59.3	59.4

Table 2. Summary of Wheat Varieties Evaluated at Princeton, Kentucky

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
		Yield, Bushels Per Acre		
Arthur	48.6	56.3	49.9	49.6
Benhur	40.5	45.5	41.7	40.4
Blueboy	50.3	50.9	48.9	48.5
Knox 62	40.4	43.2	38.4	38.1
Lewis	44.2	40.8	38.0	37.1
Logan	49.5	44.3	44.8	--
McNair 2203	50.8	--	--	--
McNair 4823	47.5	--	--	--
Monon	32.5	39.5	35.6	34.6
Redcoat	43.3	41.7	42.4	42.3
Riley 67	33.4	35.0	34.3	34.2
Stadler	39.8	42.3	39.9	37.9
Triumph	33.5	38.1	34.2	34.9
Average	42.6	43.4	40.7	36.1
		Lodged at Maturity, Percent		
Arthur	0.0	11.9	31.7	23.8
Benhur	0.0	14.4	35.0	26.3
Blueboy	0.0	15.6	20.0	15.0
Knox 62	0.0	49.4	56.3	46.6
Lewis	0.0	50.0	58.3	43.8
Logan	0.0	31.3	25.8	--
McNair 2203	6.3	--	--	--
McNair 4823	0.0	--	--	--
Monon	5.0	47.5	56.3	43.4
Redcoat	0.0	11.9	16.7	12.5
Riley 67	0.0	47.5	59.2	45.0
Stadler	0.0	40.6	50.8	39.4
Triumph	5.0	51.3	58.3	55.0
Average	1.3	33.8	42.6	31.9
		Height, Inches		
Arthur	37.5	41.0	41.8	39.3
Benhur	39.5	43.0	43.3	41.1
Blueboy	40.3	42.4	42.2	40.3
Knox 62	39.3	43.0	43.9	42.4
Lewis	39.5	42.8	42.6	40.4
Logan	42.3	45.0	44.8	--
McNair 2203	38.8	--	--	--
McNair 4823	36.0	--	--	--
Monon	39.0	42.8	42.8	41.3
Redcoat	43.3	47.1	47.3	46.1
Riley 67	39.3	42.5	43.0	41.2
Stadler	42.5	45.1	45.3	43.0
Triumph	37.0	40.6	40.8	39.6
Average	39.6	43.2	43.4	37.7

Table 2. (continued)

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
	Date Headed, No. Days After March 31			
Arthur	36.5	36.5	36.8	34.3
Benhur	35.5	34.9	35.4	33.0
Blueboy	39.3	40.9	41.3	37.9
Knox 62	37.3	36.5	36.2	33.5
Lewis	36.0	36.9	37.0	34.4
Logan	42.8	43.9	43.8	--
McNair 2203	35.5	--	--	--
McNair 4823	41.0	--	--	--
Monon	35.0	35.4	35.8	33.4
Redcoat	42.8	43.9	43.8	42.3
Riley 67	39.5	39.3	40.0	36.6
Stadler	38.3	38.8	38.8	35.5
Triumph	33.8	33.9	34.3	32.1
Average	37.9	38.3	38.5	32.1
		Survival, Percent		
Arthur	100.0	100.0	100.0	100.0
Benhur	100.0	100.0	100.0	100.0
Blueboy	100.0	100.0	100.0	100.0
Knox 62	100.0	100.0	100.0	100.0
Lewis	100.0	100.0	100.0	100.0
Logan	100.0	100.0	100.0	--
McNair 2203	100.0	--	--	--
McNair 4823	100.0	--	--	--
Monon	100.0	100.0	100.0	100.0
Redcoat	100.0	100.0	100.0	100.0
Riley 67	100.0	100.0	100.0	100.0
Stadler	100.0	100.0	100.0	100.0
Triumph	100.0	100.0	100.0	100.0
Average	100.0	100.0	100.0	100.0
		Test Weight, Pounds Per Bushel		
Arthur	59.2	59.1	58.9	58.7
Benhur	58.6	58.5	58.2	57.9
Blueboy	53.2	52.9	52.3	52.6
Knox 62	58.6	58.4	58.2	58.0
Lewis	57.8	57.2	57.0	56.9
Logan	56.5	56.2	56.4	--
McNair 2203	56.7	--	--	--
McNair 4823	56.9	--	--	--
Monon	56.9	56.9	56.6	56.5
Redcoat	57.7	57.3	57.3	57.0
Riley 67	56.6	56.3	56.1	56.1
Stadler	59.1	58.4	58.2	57.9
Triumph	58.0	57.9	57.8	57.6
Average	57.4	57.2	57.0	51.7

Table 3. Summary of Wheat Varieties Evaluated at Murray, Kentucky.

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70
	Yield, Bushels Per Acre		
Arthur	64.9	48.7	46.1
Benhur	67.3	46.1	43.1
Blueboy	62.9	52.1	49.6
Knox 62	54.1	44.1	39.6
Lewis	61.9	43.6	40.1
Logan	61.3	47.2	43.8
McNair 2203	58.3	--	--
McNair 4823	51.3	--	--
Monon	59.0	45.6	42.7
Redcoat	56.6	44.3	43.9
Riley 67	48.8	39.1	37.1
Stadler	55.0	41.6	38.1
Triumph	49.2	41.4	38.2
Average	57.7	44.9	42.0
	Lodged at Maturity, Percent		
Arthur	0.0	0.0	0.0
Benhur	0.0	0.0	0.4
Blueboy	0.0	0.0	0.0
Knox 62	0.0	0.0	15.0
Lewis	1.3	0.6	4.6
Logan	0.0	0.0	7.9
McNair 2203	0.0	--	--
McNair 4823	0.0	--	--
Monon	2.5	1.3	5.0
Redcoat	0.0	0.0	0.0
Riley 67	0.0	0.0	12.5
Stadler	0.0	0.0	3.3
Triumph	2.5	1.3	10.8
Average	0.5	0.3	5.4
	Height, Inches		
Arthur	34.0	35.0	36.8
Benhur	38.0	36.0	38.8
Blueboy	35.8	35.6	36.6
Knox 62	40.0	41.5	43.3
Lewis	37.8	36.1	39.1
Logan	39.3	37.1	39.8
McNair 2203	33.8	--	--
McNair 4823	32.3	--	--
Monon	37.8	38.5	40.8
Redcoat	46.3	42.4	44.8
Riley 67	37.0	37.0	39.8
Stadler	40.8	39.8	42.6
Triumph	36.0	37.0	38.9
Average	37.6	37.8	40.1

Table 3. (continued)

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70
	Date Headed, No. Days After March 31		
Arthur	30.5	31.1	31.4
Benhur	35.3	33.1	32.8
Blueboy	37.5	36.8	35.5
Knox 62	30.0	30.5	31.0
Lewis	30.8	33.1	32.9
Logan	41.5	41.6	41.3
McNair 2203	31.3	--	--
McNair 4823	40.3	--	--
Monon	30.0	30.5	31.0
Redcoat	40.3	40.5	40.5
Riley 67	32.3	33.8	33.8
Stadler	31.5	33.5	33.5
Triumph	29.0	30.6	31.1
Average	33.9	34.1	34.1
		Survival, Percent	
Arthur	100.0	100.0	100.0
Benhur	100.0	100.0	100.0
Blueboy	100.0	100.0	100.0
Knox 62	100.0	100.0	100.0
Lewis	100.0	100.0	100.0
Logan	100.0	100.0	100.0
McNair 2203	100.0	--	--
McNair 4823	100.0	--	--
Monon	100.0	100.0	100.0
Redcoat	100.0	100.0	100.0
Riley 67	100.0	100.0	100.0
Stadler	100.0	100.0	100.0
Triumph	100.0	100.0	100.0
Average	100.0	100.0	100.0
	Test Weight, Pounds Per Bushel		
Arthur	59.7	59.3	59.4
Benhur	57.1	57.2	57.7
Blueboy	57.2	56.9	56.7
Knox 62	59.8	59.8	59.9
Lewis	58.0	57.8	57.9
Logan	59.7	58.9	58.8
McNair 2203	55.8	--	--
McNair 4823	58.7	--	--
Monon	58.2	58.1	58.3
Redcoat	60.0	59.3	59.3
Riley 67	57.4	57.3	57.4
Stadler	59.2	59.2	59.3
Triumph	59.2	59.1	59.3
Average	58.5	58.4	58.5

Table 4. Summary of Wheat Varieties Evaluated at Bowling Green, Kentucky.

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
		Yield, Bushels Per Acre		
Arthur	33.9	39.4	41.1	37.2
Benhur	33.4	32.6	33.9	30.6
Blueboy	37.6	41.3	43.4	37.7
Knox 62	36.5	38.5	37.0	31.3
Lewis	32.0	34.8	35.2	30.2
Logan	36.4	43.7	45.8	--
McNair 2203	41.2	--	--	--
McNair 4823	31.4	--	--	--
Monon	35.2	36.9	38.0	31.9
Redcoat	27.9	31.7	32.8	30.8
Riley 67	29.4	33.5	35.4	31.5
Stadler	32.5	34.8	33.5	30.5
Triumph	35.4	33.7	33.5	32.6
Average	34.1	36.4	37.2	32.4
		Lodged at Maturity, Percent		
Arthur	0.0	0.0	0.0	0.6
Benhur	0.0	0.0	4.2	4.4
Blueboy	0.0	0.0	0.4	0.3
Knox 62	0.0	0.0	15.8	23.1
Lewis	0.0	0.0	11.7	11.3
Logan	0.0	0.0	0.0	--
McNair 2203	0.0	--	--	--
McNair 4823	0.0	--	--	--
Monon	0.0	0.0	0.0	5.0
Redcoat	0.0	0.0	0.8	0.6
Riley 67	0.0	0.0	18.8	14.7
Stadler	0.0	0.0	15.0	16.9
Triumph	0.0	0.0	15.4	14.1
Average	0.0	0.0	7.5	9.1
		Height, Inches		
Arthur	29.3	32.3	35.0	32.9
Benhur	33.8	34.9	36.6	35.3
Blueboy	33.5	35.6	37.5	35.6
Knox 62	35.5	38.8	40.3	38.4
Lewis	31.3	34.6	37.3	35.3
Logan	34.3	37.0	40.7	--
McNair 2203	32.8	--	--	--
McNair 4823	29.5	--	--	--
Monon	32.8	34.4	37.1	36.1
Redcoat	36.5	38.5	41.7	40.3
Riley 67	31.8	35.0	37.8	36.3
Stadler	35.5	37.6	41.0	39.0
Triumph	31.5	34.4	37.1	36.0
Average	32.9	35.7	38.4	36.5

Table 4. (Continued)

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
		Survival, Percent		
Arthur	100.0	100.0	100.0	100.0
Benhur	100.0	100.0	100.0	100.0
Blueboy	100.0	100.0	100.0	100.0
Knox 62	100.0	100.0	100.0	100.0
Lewis	100.0	100.0	100.0	100.0
Logan	100.0	100.0	100.0	--
McNair 2203	100.0	--	--	--
McNair 4823	100.0	--	--	--
Monon	100.0	100.0	100.0	100.0
Redcoat	100.0	100.0	100.0	100.0
Riley 67	100.0	100.0	100.0	100.0
Stadler	100.0	100.0	100.0	100.0
Triumph	100.0	100.0	100.0	100.0
Average	100.0	100.0	100.0	100.0
		Test Weight, Pounds Per Bushel		
Arthur	58.6	58.6	58.8	58.5
Benhur	57.9	58.1	58.1	57.7
Blueboy	58.3	57.9	57.0	56.3
Knox 62	58.6	58.8	59.0	58.5
Lewis	56.9	57.2	57.1	56.0
Logan	59.2	58.7	58.6	--
McNair 2203	57.7	--	--	--
McNair 4823	60.0	--	--	--
Monon	58.1	58.1	58.2	57.3
Redcoat	58.2	57.8	57.8	57.0
Riley 67	57.4	57.4	57.3	57.0
Stadler	58.3	58.4	58.2	57.8
Triumph	58.6	58.7	58.8	58.5
Average	58.3	58.2	58.1	57.5

Table 5. All Location Summary of Wheat Varieties.

Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
		Yield, Bushels Per Acre		
Arthur	53.9	52.5	49.6	46.4
Benhur	48.2	43.6	41.4	38.2
Blueboy	54.4	53.2	53.7	49.6
Knox 62	46.6	43.9	39.9	37.0
Lewis	48.3	42.0	39.8	37.1
Logan	50.5	48.3	47.3	--
McNair 2203	52.6	--	--	--
McNair 4823	48.8	--	--	--
Monon	46.0	44.1	41.3	37.3
Redcoat	45.7	43.6	42.0	39.7
Riley 67	41.3	39.5	38.5	35.9
Stadler	44.3	41.8	39.3	36.4
Triumph	43.6	41.0	38.4	36.9
Average	48.0	44.9	42.8	39.5
		Lodged at Maturity, Percent		
Arthur	7.5	8.9	17.7	14.3
Benhur	1.3	5.5	13.9	11.4
Blueboy	0.6	4.2	5.7	4.6
Knox 62	19.4	31.4	42.0	37.8
Lewis	7.2	18.9	27.0	22.3
Logan	3.1	10.3	11.0	--
McNair 2203	14.7	--	--	--
McNair 4823	0.0	--	--	--
Monon	8.1	22.8	28.0	24.1
Redcoat	0.0	3.3	9.6	7.7
Riley 67	4.4	18.4	32.6	26.4
Stadler	11.9	21.7	29.0	25.0
Triumph	15.6	26.3	37.4	33.6
Average	7.2	15.6	23.1	20.7
		Height, Inches		
Arthur	35.3	37.1	39.1	37.8
Benhur	37.9	38.4	40.3	38.7
Blueboy	37.2	38.1	39.2	37.9
Knox 62	39.3	41.2	42.8	41.7
Lewis	37.3	38.3	40.3	38.8
Logan	39.9	40.5	42.0	--
McNair 2203	35.9	--	--	--
McNair 4823	33.8	--	--	--
Monon	37.8	39.1	40.9	39.7
Redcoat	43.4	43.8	45.6	44.3
Riley 67	37.4	39.0	41.2	40.0
Stadler	40.7	41.6	43.7	42.2
Triumph	36.3	37.9	40.0	38.7
Average	37.9	39.5	41.4	40.0

Table 5. (continued)

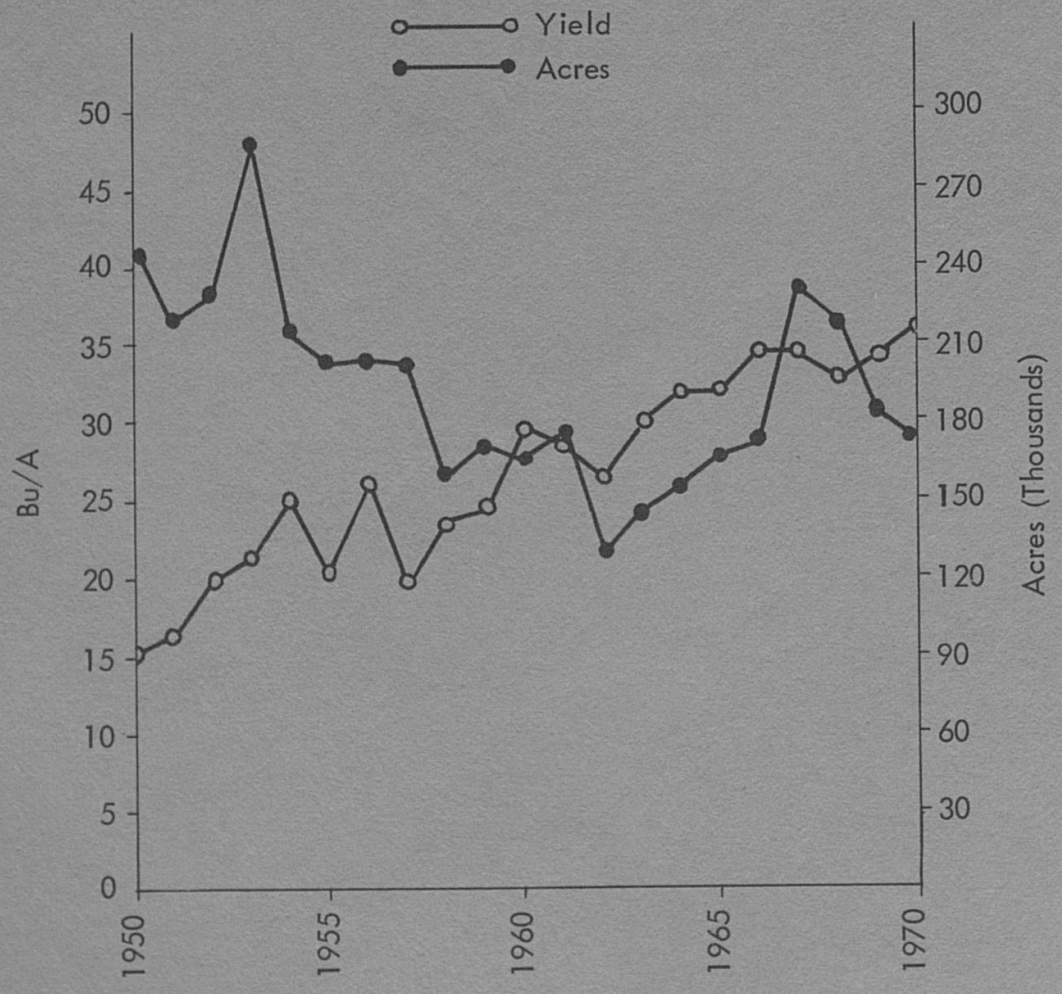
Variety	1-Year Average 1970	2-Year Average 1969-70	3-Year Average 1968-70	4-Year Average 1967-70
	Date Headed, No. Days After March 31			
Arthur	35.1	36.3	36.4	35.4
Benhur	35.9	36.2	36.1	34.8
Blueboy	39.4	41.0	40.4	38.9
Knox 62	35.2	36.3	36.1	34.7
Lewis	35.0	37.4	37.1	35.8
Logan	42.8	44.1	43.6	--
McNair 2203	35.3	--	--	--
McNair 4823	40.3	--	--	--
Monon	34.2	35.6	35.7	34.4
Redcoat	42.0	43.5	43.5	43.3
Riley 67	37.0	38.5	38.8	37.3
Stadler	36.6	38.4	38.3	36.8
Triumph	32.9	34.8	34.9	33.8
Average	37.1	38.4	38.3	36.5
		Survival, Percent		
Arthur	100.0	100.0	100.0	100.0
Benhur	100.0	100.0	100.0	100.0
Blueboy	100.0	100.0	100.0	100.0
Knox 62	100.0	100.0	100.0	100.0
Lewis	100.0	100.0	100.0	100.0
Logan	100.0	100.0	100.0	--
McNair 2203	100.0	--	--	--
McNair 4823	100.0	--	--	--
Monon	100.0	100.0	100.0	100.0
Redcoat	100.0	100.0	100.0	100.0
Riley 67	100.0	100.0	100.0	100.0
Stadler	100.0	100.0	100.0	100.0
Triumph	100.0	100.0	100.0	100.0
Average	100.0	100.0	100.0	100.0
		Test Weight, Pounds Per Bushel		
Arthur	59.8	59.6	59.8	59.4
Benhur	58.7	58.8	58.8	58.6
Blueboy	56.1	55.8	55.5	55.3
Knox 62	59.7	59.5	59.4	59.2
Lewis	58.0	57.5	57.6	57.3
Logan	58.5	58.3	58.2	--
McNair 2203	56.9	--	--	--
McNair 4823	58.9	--	--	--
Monon	58.0	58.1	58.1	57.9
Redcoat	58.9	58.8	58.6	58.3
Riley 67	57.9	57.8	57.7	57.7
Stadler	59.5	59.3	59.2	59.0
Triumph	59.5	59.3	59.2	59.1
Average	58.5	58.4	58.4	58.2

WHEAT PRODUCTION IN KENTUCKY

Importance

Kentucky's wheat acreage harvested for grain in 1970 was 170,000 acres. The acreage is generally dependent upon governmental programs. The average yield per acre in 1970 was a record 36 bushels per acre, which was 2 bushels above the 1969 average. Wheat production contributed almost $10 million dollars to Kentucky's agricultural income in 1970.

1950-70 Kentucky Wheat Acreage and Yield



Seedbed Preparation

Seedbed preparations for wheat range from no-tillage systems to plowing plus two or three diskings. The degree of soil preparation will depend upon the cropping system involved. If wheat is to be sown conventionally following a corn or soybean crop, two diskings will usually be sufficient to prepare a good seedbed.

Fertilizer and Lime

Wheat grows best when the soil pH is from 6.0 to 6.5. To accurately determine lime requirements, a soil test should be made. If lime is needed it should be applied before seeding. The following can be used as a guide for lime requirements:

Soil pH	*Lime Needed, Tons/A*
Below 5.3	3-4
6.1-6.7	2-3
Above 6.7	None

A soil test should be used also to determine the amounts of phosphorus and potassium to be applied. Phosphorus is particularly important in the fall during early growth. It stimulates early growth and vigorous root systems that help plants survive the winter. Potassium helps plants develop stronger straw which aids in reducing lodging. The following can be used as a guide for phosphorus and potassium applications:

Phosphorus Soil Test	*Phosphorus (P_2O_5) Needed, Lb/A*
Low	80-120
Medium	40-80
High	None

Potassium Soil Test	*Potassium (K_2O) Needed, Lb/A*
Low	40-80
Medium	0-40
High	None

Wheat grain yield will respond to nitrogen applications up to the point where lodging becomes a problem. Most of the better wheat varieties will stand up well with application rates of 30 to 50 pounds of nitrogen per acre. A split application is more effective than a single application. One-half of the nitrogen should be applied at planting time and the remainder top dressed next spring about the first of March.

Method of Planting

There are three general methods of seeding wheat--conventional drilling, broadcasting, and aerial seeding.

Drilling wheat with a grain drill is the most common method. The use of a grain drill has several advantages. The seeds are placed at a uniform depth which can be regulated according to soil moisture conditions. Seed distribution is very good, with no skipped places in the field.

The broadcast method of seeding wheat, however, is becoming more popular because of the reduced labor requirements and reduced equipment expense. The wheat seed may be mixed with the fertilizer and this mixture broadcast in one trip over the field. One disadvantage of this seeding method is that stands may not be as uniform as with drilling. Skips may be left in turning, and there may be strips through the field left unseeded owing to improper overlapping. A light disking may be required to cover the seed.

Aerial seeding is being used more and will be discussed under the section on double cropping.

Planting Rate

Drilled wheat should be planted at the rate of 1-1½ bushels per acre. The broadcast seeding rate should be increased

to 1½-2 bushels per acre. Aerial seeding should be at the rate of 2 bushels per acre to compensate for some loss in stands owing to poor seedling survival if weather conditions are unfavorable. Seeding rates should be increased by ½ to 1 bushel per acre if seeding is delayed after normal seeding dates.

Planting Date

Wheat should be planted between October 1 and October 25 so that plants can make sufficient growth and establish a good root system before winter. Varieties resistant to the hessian fly should be used if planting is done prior to the fly-free date.

Disease, Insect and Weed Control

Wild garlic is often a problem in wheat fields. This weed can be controlled by spraying with 2,4-D in March or early April. The rate of 2,4-D per acre should be one-half to one pint of 4 lb/gal of the amine or ester formulation. At this rate 2,4-D will also control dock and plantain.

Two diseases which may be a problem in wheat fields are smuts and the rusts. If smuts have been a problem, planting certified seed is the best way to control this disease. Rusts are most easily controlled by growing resistant varieties.

Armyworms and grasshoppers are the two insects most likely to be a problem and both of these can be controlled with the use of sevin applied at the rate of 2 pounds of the 50% wettable powder per acre.

Double Cropping

Wheat double cropped with soybeans is becoming increasingly important in Kentucky. This method of farming allows two cash crops to be grown in one year, thus increasing per acre returns.

Several factors have contributed to the popularity of double cropping. New higher yielding, shorter strawed, earlier

maturing wheat varieties have become available. Aerial seeding and fertilization, along with successful no-till planters, have also played an important part.

Aerial seeding of wheat in standing soybeans has been successful. One advantage of aerial seeding is that wheat can be sown earlier and the plants have more time to become established before the first hard freeze. The ideal time to aerial seed wheat in soybeans is just before the big lower leaves of the soybean plants fall. The leaves then provide a protective mulch for the germinating wheat seed. The seeding rate should be increased to 2 bushels per acre to allow for some stand reduction. Since the seed is not covered by soil some stand loss can occur during dry weather. To get uniform seeding and avoid skipped strips through the field an experienced pilot should be used.

Wheat seeded the conventional way with land preparation following the harvest of soybeans is also successful in double cropping.

Maturity is quite important in selecting a wheat variety to use in a double cropping program. A variety should be selected which matures relatively early. It is important that the following soybean crop be planted as early as possible to provide as long a growing season as possible.

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