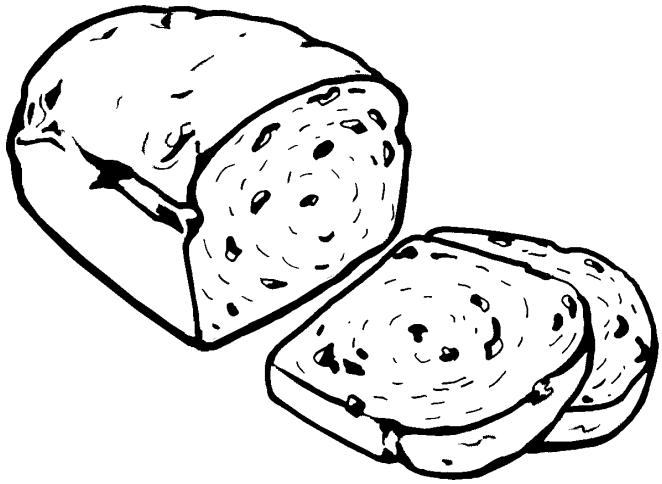
Kansas Wheat Quality 2001



Kansas Wheat Commission

Kansas Department of Agriculture

WEIGHTS, MEASURES
AND CONVERSION FACTORS

Weights and Measures and Conversion Factors

Bushel Weights:

- Wheat & Soybeans = 60 lbs.
- Corn, Sorghum & Rye = 56 lbs.
- Barley (grain) = 48 lbs.; Malt - 34 lbs.
- Oats = 32 lbs.

Bushels to Metric Tons:

- Wheat, Soybeans = bu. X .02721555*
- Barley = bu. X .021772
- Corn, Sorghum, Rye = bu. X .025400
- Oats = bu. X .014515

1 Metric Ton Equals:

- 2204.622 Pounds (lbs.)
- 22.046 Hundredweight (cwt)
- 10 Quintals

1,000 Kilograms Equals:

- 36.7437 bu. Wheat or Soybeans
- 39.3683 bu. Corn, Sorghum or Rye
- 45.9296 bu. Barley
- 68.8944 bu. Oats

Area:

- 1 Acre = .404694 Hectares
- 1 Hectare = 2.4710 Acres

Yields:

- Wheat: bu. per acre X 0.6725
  = quintals per hectare
- Rye, Corn: bu. per acre X 0.6277
  = quintals per hectare
- Barley: bu. per acre X 0.5380
  = quintals per hectare
- Oats: bu. per acre X 0.3587
  = quintals per hectare

* Kansas wheat production as of August 1, 2001 is forecast at 344.4 million bushels (9,373,035 metric tons).

WHEAT QUALITY
2001

KANSAS
AGRICULTURAL
STATISTICS
SERVICE

Fact Finders
For Agriculture

Kansas Department of Agriculture
632 SW Van Buren, Rm. 200
PO Box 3534
Topeka, KS 66601-3534
Phone: 785-233-2230

A Cooperative Function of

KANSAS DEPARTMENT OF AGRICULTURE

Jamie Clover Adams, Secretary

KANSAS STATE UNIVERSITY
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

Marc Johnson
Dean and Director

KANSAS WHEAT COMMISSION

Bruce Wilkens, Chairman
David E. Frey, Administrator

DEPARTMENT OF GRAIN SCIENCE
AND INDUSTRY

Brendan Donnelly, Head

Compiled by

KANSAS AGRICULTURAL STATISTICS SERVICE

632 SW Van Buren, Room 200

P.O. Box 3534

Topeka, Kansas 66601-3534

Dave Ranek, Quentin Wearne, & Ronald Sadler
Agricultural Statisticians

Eldon J. Thiessen, State Statistician
Eddie Wells, Deputy State Statistician

Melvin Perott, Computer Analyst

Candace S. Thomas provided research and editorial assistance, while Judy Allison was our designer and desktop publisher. Reproduction and distribution was handled in our printing unit by David Judd and Clyde Seel.

Issued September 2001

FOREWORD

The Kansas Wheat Commission joins the Kansas Department of Agriculture in presenting this 2001 Wheat Quality Report. This information is of vital interest to wheat producers, as well as domestic and foreign buyers.

The basic quality information is compiled by summarizing data from inspection certificates for railroad car samples of Kansas wheat moving from first point of sale. In addition, truckloads converted to carlot equivalents were included. Determinations of protein percentage, test weight per bushel, and other grade factors were made by the ***Kansas Grain Inspection Service, Inc.***

The Kansas Wheat Quality profile section is a summary of milling quality information by variety for the current year's Kansas wheat crop. Enumerators from Kansas Agricultural Statistics Service made the field collection of samples used in this project. We are indebted to the Department of Grain Science and Industry, Kansas State University, for milling and evaluating laboratory results from the samples tested.

We also want to give a special word of thanks to the wheat farmers throughout Kansas who cooperated in the Objective Yield Survey and permitted wheat samples to be collected.

Eldon J. Thiessen
State Statistician

Bruce Wilkens, Chairman
Kansas Wheat Commission

Copies of this bulletin are available upon request to the Administrator, Kansas Wheat Commission, 2630 Claflin Road, Manhattan, Kansas 66502 or the State Statistician, 632 SW Van Buren, Room 200, P.O. Box 3534, Topeka, Kansas 66601-3534.

This bulletin is also available on the internet at the Kansas Agricultural Statistics Service homepage at http://www.nass.usda.gov/ks/

KANSAS WHEAT QUALITY 2001

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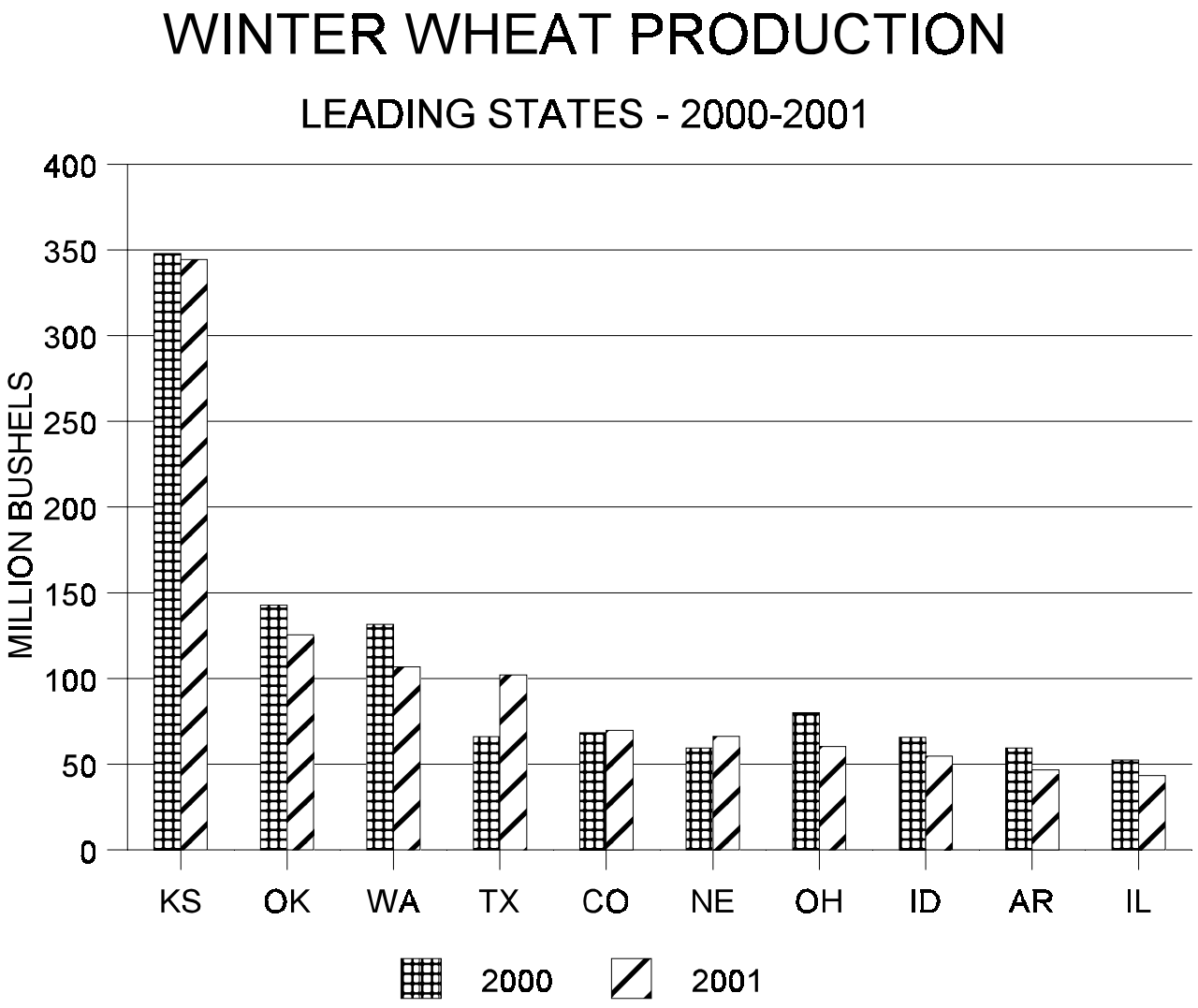
WHEAT SITUATION

World wheat production as of August 1, 2001 is expected to total 567.6 million metric tons (20.9 billion bushels), down 2 percent from a year ago. Total U.S. wheat production, at 54.0 million metric tons, will be down 11 percent from a year ago and will account for about 10 percent of the world total. Winter wheat production in U.S. is estimated at 37.7 million metric tons, or about 70 percent of the total U.S. wheat production. Kansas, with an estimated 9.4 million metric tons of winter wheat, will account for 25 percent of the U.S. winter wheat production. This output represents 17 percent of the total U.S. wheat output and 2 percent of the world total.



ACRES OF WHEAT PLANTED BY SIZE GROUP

Kansas farmers with 500 or more acres of wheat planted accounted for 23.0 percent of all wheat farms and represent 64.4 percent of acres planted in the fall of 2000. The total wheat acres planted totaled 9,900,000 acres.

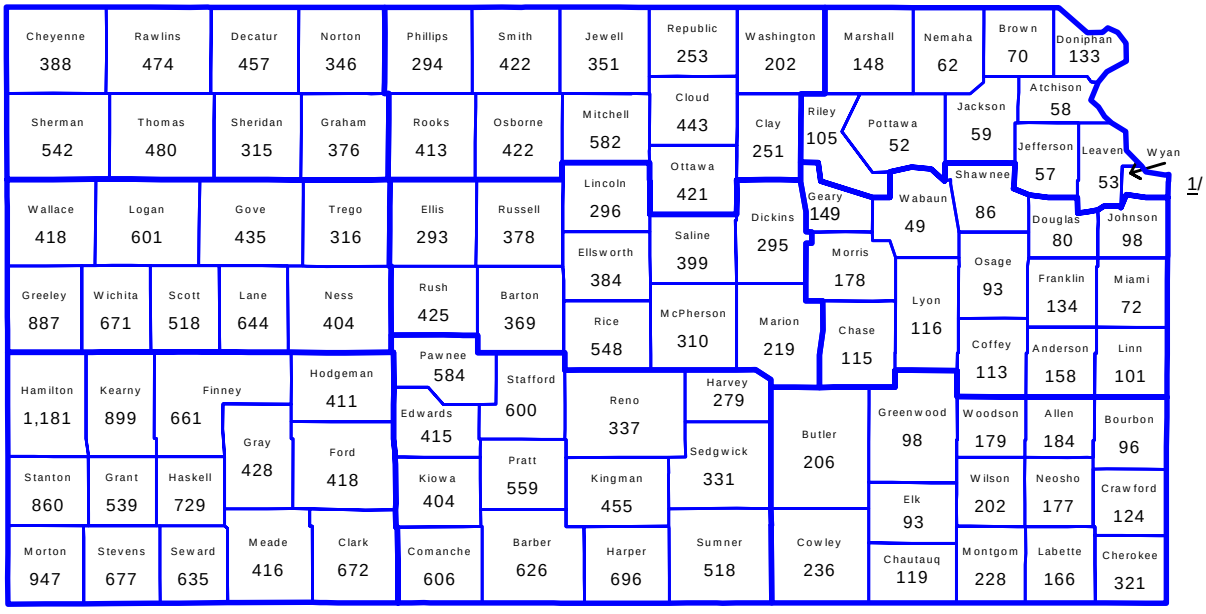
WHEAT PLANTED IN KANSAS FOR 2001 HARVEST, BY SIZE GROUPS

Acres of Wheat Planted per Farm	Number of Farms	Percent of Farms	Acres of Wheat Planted
1-24	2,600	8.0	33,400
25-74	5,900	18.5	247,500
75-199	7,600	23.7	837,100
200-499	8,600	26.8	2,409,000
500-749	3,300	10.2	1,742,800
750-999	1,500	4.7	1,130,800
1.000-1,999	2,200	6.8	2,542,200
2,000-2,999	200	0.9	575,300
3,000 +	100	0.4	381,900
State	32,000	100.0	9,900,000

AVERAGE ACRES PLANTED, BY COUNTY

Hamilton County led the State with an average of 1,181 acres planted per farm, followed by Morton County with 947 acres and Kearney County with 899 acres. Statewide, the average is 309 acres of wheat planted per farm.

ACRES OF WHEAT PER FARM PLANTING WHEAT, 2001 HARVEST



1/ Not published due to insufficient data.

U.S. WHEAT SUPPLY AND DISAPPEARANCE, 1993-2002

U.S. wheat supplies for the 2001/02 season are expected to be 2,948 million bushels, down 10 percent from last year. Beginning stocks, at 873 million bushels, are down 8 percent from a year ago. Estimated U.S. wheat production as of August 1, at 1,985 million bushels, is down 11 percent from last year. Disappearance is expected to total 2,332 million bushels, compared with 2,390 million bushels for 2000. Domestic use is expected to account for 1,282 million bushels, down 3 percent from the previous year. Exports, forecast at 1,050 million bushels, are 1 percent below a year ago. Carry-over at the end of the crop year is expected to total 616 million bushels, 29 percent below the 2000/01 level.

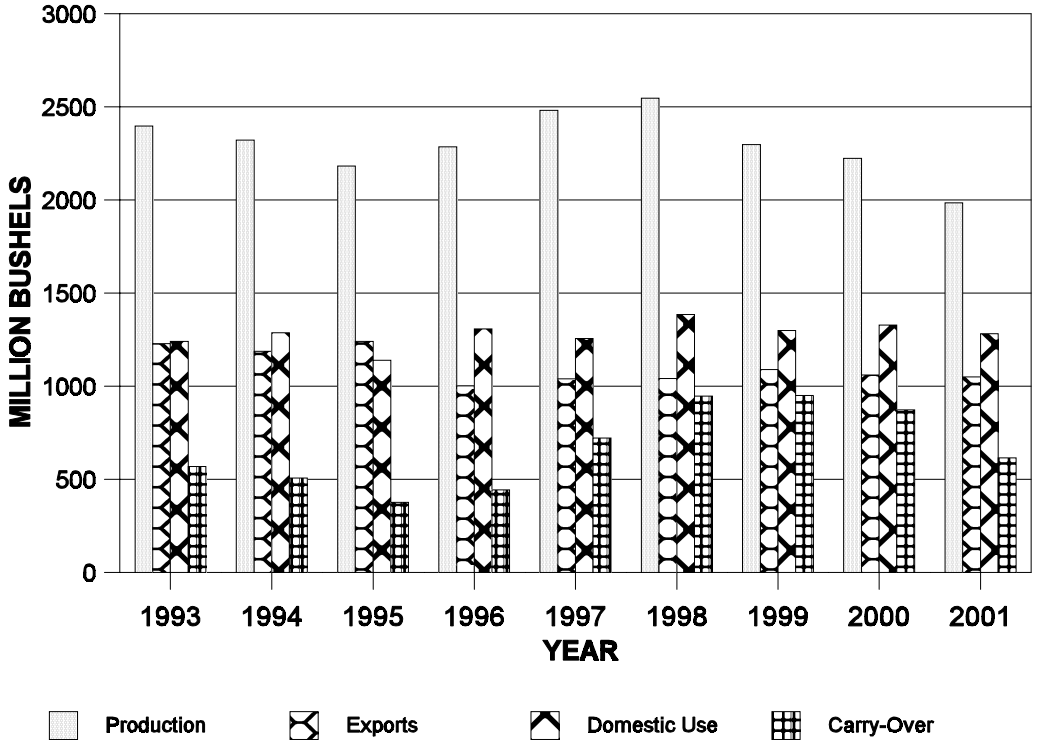
U.S. WHEAT SUPPLY AND DISAPPEARANCE, 1993-2002

Year Beginning June 1	Supply			Disappearance			Ending Stocks May 31
	Beginning Stocks	Production	Total 1/	Domestic Use	Exports	Total 2/	
	- Million Bushels -						
1993/94	529	2,396	3,036	1,240	1,228	2,467	568
1994/95	568	2,321	2,981	1,287	1,188	2,475	507
1995/96	507	2,183	2,757	1,140	1,241	2,381	376
1996/97	376	2,285	2,753	1,308	1,001	2,310	444
1997/98	444	2,481	3,020	1,257	1,040	2,298	722
1998/99	722	2,547	3,373	1,385	1,042	2,427	946
1999/00	946	2,299	3,339	1,300	1,090	2,390	950
2000/01	950	2,223	3,263	1,328	1,061	2,390	873
2001/02 3/	873	1,985	2,948	1,282	1,050	2,332	616

1/ Includes imports. 2/ Totals may not add due to rounding. 3/ Preliminary.

U.S. WHEAT SUPPLY & DISAPPEARANCE

1993-2001



KANSAS WHEAT STOCKS

Marketing Year	September 1	December 1	March 1	June 1
	- - - - - - - - - - - - - - - - - - Thousand Bushels - - - - - - - - - - - - - - - - - -			
1995/96	236,431	167,201	92,753	40,048
1996/97	179,327	109,012	96,564	33,833
1997/98	351,810	244,197	213,301	106,901
1998/99	379,253	271,381	226,800	148,561
1999/00	394,409	282,868	230,645	168,899
2000/01	384,526	274,900	217,771	154,183

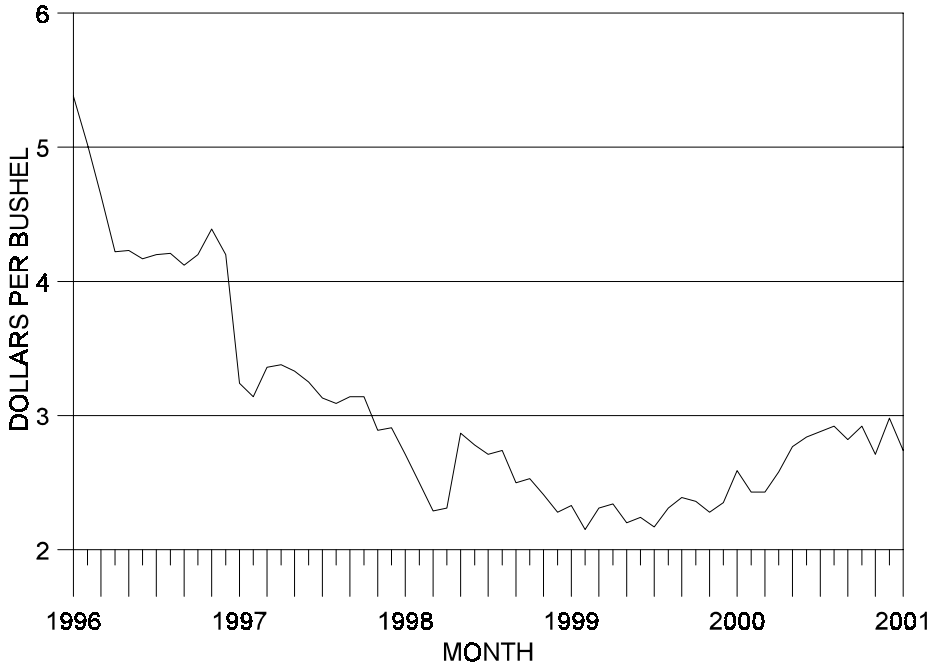
MONTHLY MARKETINGS OF KANSAS WHEAT, 1995-2000

Month	1995-96	1996-97	1997-98	1998-99	1999-00	5-Year Average 1/
	- Percent -					
June	5	10	7	13	6	8
July	33	33	34	23	37	32
August	15	7	10	10	11	11
September	13	6	4	9	7	8
October	8	4	4	8	2	5
November	3	5	4	4	3	4
December	9	8	7	7	6	7
January	6	8	8	6	10	8
February	3	6	5	3	7	5
March	3	7	6	8	4	6
April	1	4	6	4	3	4
May	1	2	5	5	4	3

1/ May not add due to rounding.

KANSAS WHEAT PRICES

JUNE 1996-JUNE 2001



HIGHLIGHTS OF THE 2001 CROP

The 2001 Kansas wheat crop, as of August 1, 2001 was estimated at 344.4 million bushels, down 1 percent from last year. Wheat was planted on 9.9 million acres for the 2001 crop, up 1 percent from 2000. The acres harvested for grain totaled 8.4 million acres, down1 million acres from last year.

Seeding of the 2001 wheat crop started in early September. However, progress was slow as some producers were waiting for rain before planting. By the middle of September only 4 percent of the crop was seeded and topsoil moisture supplies for nearly three-quarters of the State were rated very short. Scattered rains were received the last half of September through early October. Dry weather returned by mid-October and seeding had progressed to 69 percent complete with 24 percent of the crop emerged. In late October, rain fell across the State with some areas reporting heavy rains. On November 5, 92 percent of the acreage was seeded and 81 percent of the crop had emerged. Seeding continued during November and by the 26th, 98 percent of the acreage was seeded, 92 percent of the crop had emerged, and 55 percent of the crop was rated in good to excellent conditions.

December started out mild but turned very cold by the end of the month. High winds were a concern in the west while most of the eastern half of the State had adequate snow cover during the month. Stands in some areas were thin. During January and February the western half of the State received much needed snow cover.

The winter wheat crop started to break dormancy by the end of February. The condition of the crop decreased from 47 percent good to excellent in December to 30 percent by the first week of March. Freeze damage was reported as 1 percent severe, 11 percent moderate, 19 percent light and 69 percent with no damage.

During March, most of the State received precipitation in the form of rain or snow but by the first of April only 2 percent of the crop was jointing compared to 23 percent for the five-year average. The State received much needed scattered showers throughout April and May. Wheat crop conditions continued to decline during April and May despite the precipitation. By mid-April, some acres were being plowed under due to freeze damage, thin stands, and tillering problems. The wheat crop started to head the last week of April and progressed ahead of normal throughout May. Stripe rust was reported in the southwest, south central, and central districts the last half of May.

Harvest of the 2001 crop began in the south-central part of the State during the second week of June. Harvest was slowed by scattered showers but by the last week of June harvest was ahead of average. Hot, dry weather enabled harvest to progress rapidly and was 99 percent complete on July 8.

DOMESTIC UNITS

Year	Planted Acres	Harvested Acres	Yield per Acre	Production	Test Weight	Protein 1/	Moisture
	- - - - 1,000 - - - -		Bushels	1,000 Bu.	Lb./Bu.	- - - Percent - - -	
1992	12,000	10,700	34.0	363,800	59.4	12.4	12.6
1993	12,100	11,100	35.0	388,500	59.8	11.4	12.4
1994	11,900	11,400	38.0	433,200	60.3	12.1	11.4
1995	11,700	11,000	26.0	286,000	58.4	12.3	11.1
1996	11,800	8,800	29.0	255,200	60.2	13.3	12.3
1997	11,400	10,900	46.0	501,400	60.6	11.8	11.9
1998	10,700	10,100	49.0	494,900	61.5	11.5	11.2
1999	10,000	9,200	47.0	432,400	60.2	11.5	12.2
2000	9,800	9,400	37.0	347,800	59.9	11.9	11.8
2001	9,900	8,400	41.0	344,400	60.9	12.1	11.8

1/ All protein data shown have been converted to a 12% moisture basis.

METRIC UNITS

Year	Planted Hectares	Harvested Hectares	Yield per Hectare	Production	Test Weight 1/
	- - - - - 1,000 - - - - -		Metric Tons	1,000 MT	Kg/Hl
1992	4,856	4,330	2.3	9,901	76.5
1993	4,897	4,492	2.4	10,573	77.0
1994	4,816	4,614	2.6	11,790	77.7
1995	4,735	4,452	1.7	7,784	75.2
1996	4,775	3,561	2.0	6,945	77.6
1997	4,614	4,411	3.1	13,646	78.1
1998	4,330	4,087	3.3	13,469	79.2
1999	4,047	3,723	3.2	11,768	77.6
2000	3,966	3,804	2.5	9,466	77.2
2001	4,006	3,399	2.8	9,373	78.5

1/ Kilograms/Hectoliter = 1.28841 X (lbs./bu.).

WHEAT QUALITY DATA - KANSAS GRAIN INSPECTION CERTIFICATES

IMPORTANCE OF WHEAT QUALITY

The quality of wheat as characterized by protein content, strength of gluten, weight per bushel, amount of dockage, grades and grade defects, milling data, and physical dough analysis has an important impact on the use of wheat for flour and, hence, its price in the market place.

This report on wheat quality, issued by Kansas Agricultural Statistics Service, helps farmers appraise the quality of the wheat crop being marketed and aids buyers in locating wheat with the desired characteristics.

Information on wheat protein content, weight per bushel, varieties, and grade defects helps producers of high quality grain obtain better prices. The grain trade, in turn, is in a better position to know the areas in which the quality and gluten strength of wheat meet their requirements and direct their purchases accordingly. Thus, the reports facilitate pricing and marketing of the crop. Publication of wheat quality data by counties and agricultural statistics districts as soon as the new crop comes on the market provides everyone with current information coinciding with the harvest period, thus maximizing benefits to producers, grain buyers, and the wheat industry in general.

The following table shows the grading standards used by the Kansas Grain Inspection Service, Inc. in grading samples of hard red winter wheat. This bulletin is based on a summary of samples graded by the Kansas Grain Inspection Service, Inc.

GRADES AND GRADE REQUIREMENTS FOR HARD RED WINTER WHEAT

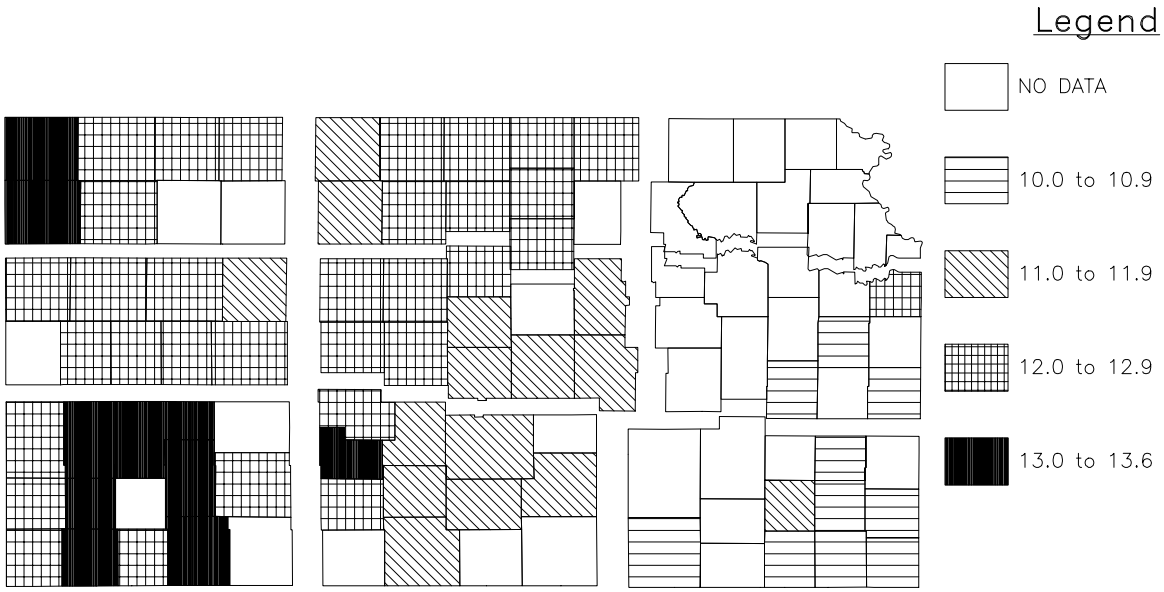
Grade	Minimum Weight per Bushel	Maximum Limits:						
		Defects					Wheat of Other Classes	
		Heat Damaged Kernels	Damaged Kernels (Total)	Foreign Material	Shrunken and Broken Kernels	Total Defects	Con-trasting Classes	Wheat of Other Classes (Total)
	Pounds	- - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - -						
1	60.0	0.2	2.0	0.4	3.0	3.0	1.0	3.0
2	58.0	0.2	4.0	0.7	5.0	5.0	2.0	5.0
3	56.0	0.5	7.0	1.3	8.0	8.0	3.0	10.0
4	54.0	1.0	10.0	3.0	12.0	12.0	10.0	10.0
5	51.0	3.0	15.0	5.0	20.0	20.0	10.0	10.0

SAMPLE GRADE: Sample grade is wheat that does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4, or 5; or contains 31 or more insect-damaged kernels per 100 grams of wheat; or contains 4 or more stones or any number of stones which have an aggregate weight in excess of 0.1 percent of the sample weight, 1 or more pieces of glass, 2 or more crotalaria seeds, 1 or more castor beans, 3 or more particles of an unknown foreign substance or a commonly recognized harmful toxic substance, 1 or more rodent pellets, bird droppings, or equivalent quantity of other animal filth per 1,000 grams of wheat; or has a musty, sour, or commercially objectionable foreign odor except smut or garlic odor; or is heating or otherwise of distinctly low quality.

PROTEIN CONTENT

The average protein content of the 2001 Kansas wheat crop was 12.1 percent, up from last year's 11.9. This year's protein is the same as the 10-year average of 12.1 percent. By district, protein content ranged from 10.6 percent in the east central district to 12.9 percent in the southwest district. Gray led all counties, averaging 13.6 percent protein. Second highest was Finney County, averaging 13.5 percent protein. Protein content by variety from Wheat Objective Yield samples is shown beginning on page 28. See the map below for average protein content by county.

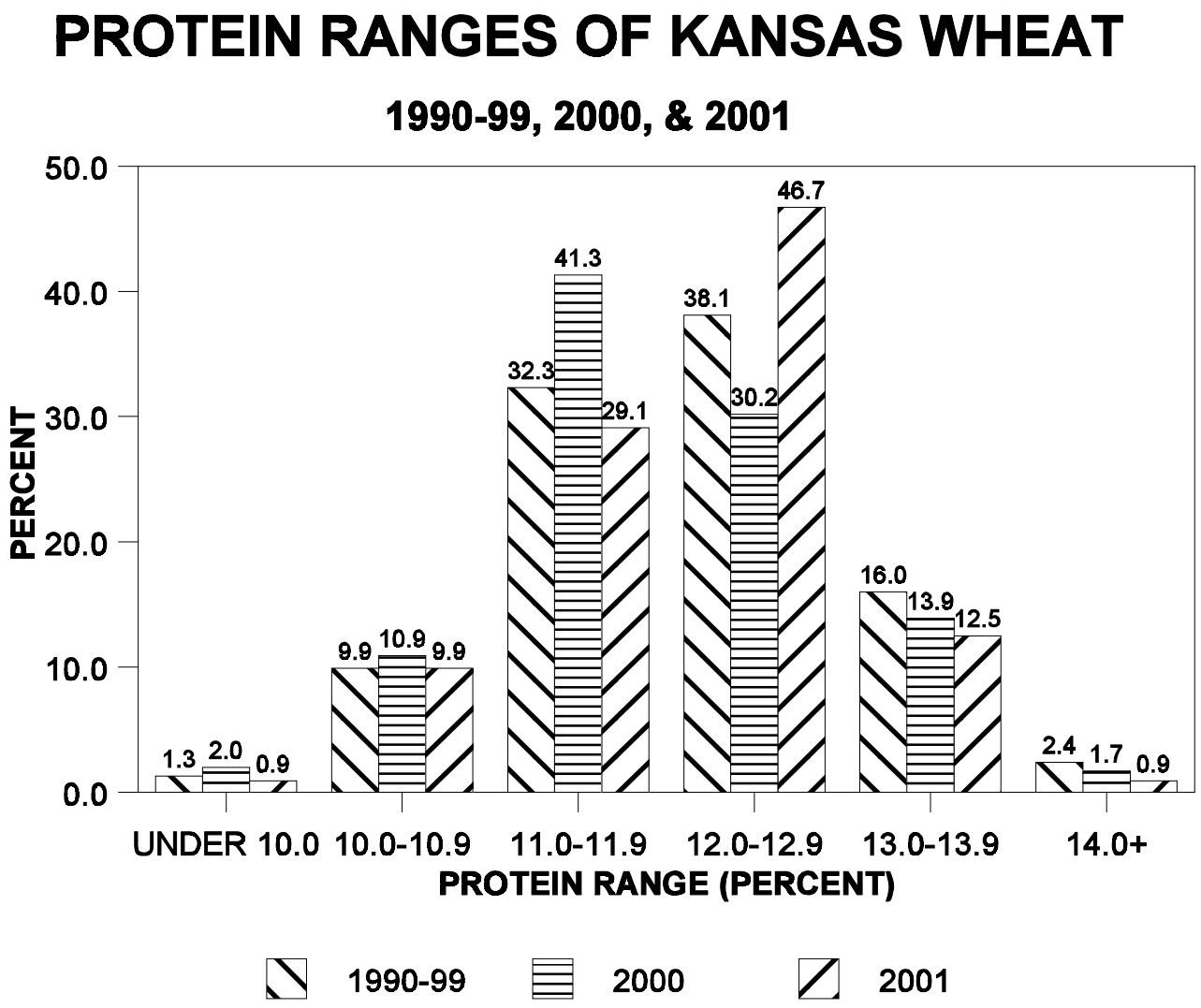
KANSAS WHEAT PROTEIN CONTENT – 2001
(PERCENT)



PROTEIN RANGES OF 2001 KANSAS WHEAT 1/

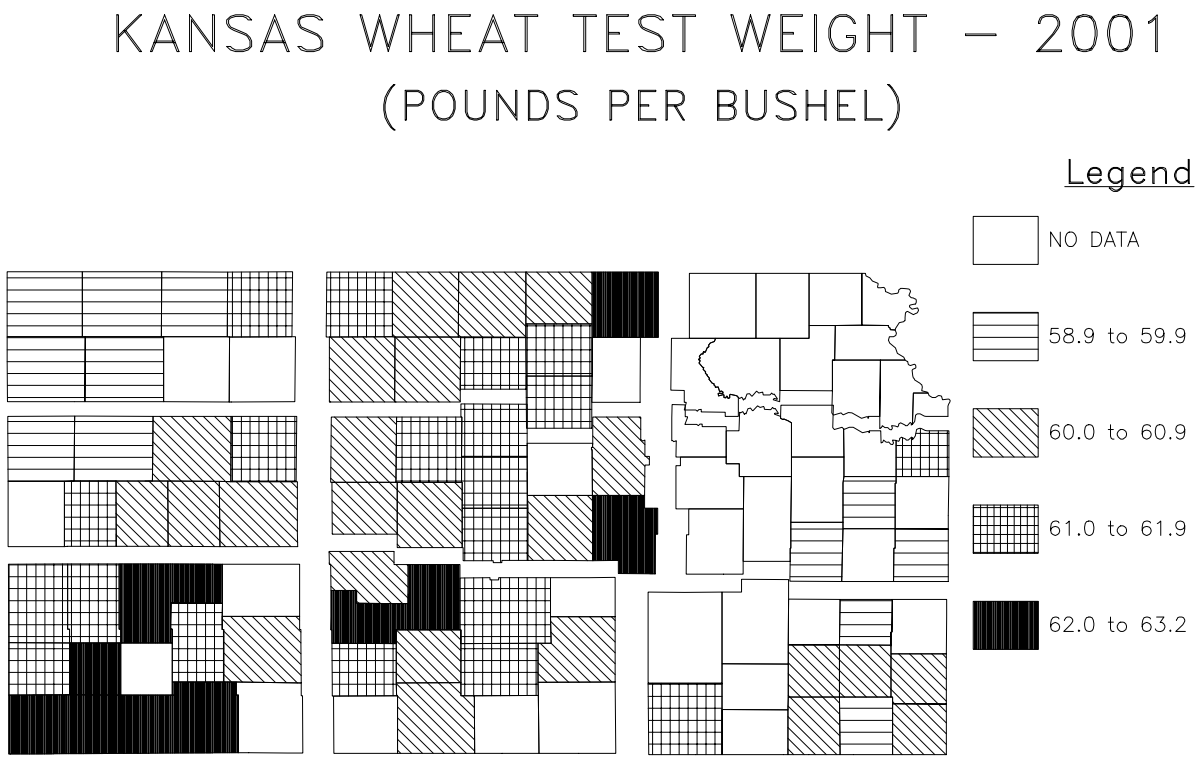
Districts	NW	WC	SW	NC	C	SC	NE	EC	SE	State
Production (000 bu.)	35,000	26,300	49,500	49,100	62,900	79,200	9,100	11,600	21,700	344,400
% Protein	- Percent -									
Under 10.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	5.1	10.4	0.9
10.0-10.9	0.6	0.3	0.1	0.0	2.0	12.3	0.0	83.5	59.8	9.9
11.0-11.9	15.8	13.7	6.8	17.9	53.3	38.3	89.7	6.3	29.1	29.1
12.0-12.9	37.6	67.1	54.8	75.9	44.6	45.5	10.3	5.1	0.3	46.7
13.0-13.9	39.2	18.9	36.6	6.2	0.1	3.7	0.0	0.0	0.4	12.5
14.0-Over	6.8	0.0	1.7	0.0	0.0	0.1	0.0	0.0	0.0	0.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Protein content adjusted to 12 percent moisture basis.



TEST WEIGHT

The 2001 Kansas wheat crop averaged 60.9 pounds per bushel, compared with 59.9 pounds for the 2000 crop. The 10-year average for Kansas is 60.1 pounds per bushel. Harvest of the 2001 crop began in the south-central part of the State during the second week of June. Harvest was slowed by scattered showers but by the last week of June harvest was ahead of average. Hot, dry weather enabled harvest to progress rapidly and was 99 percent complete on July 8. By district, test weights fell in a range from 59.5 pounds in the northwest to 62.2 pounds in the northeast district. The southwest district was second highest in test weight at 61.8 pounds. Seward County, with a test weight of 63.2 pounds, was the highest in the State. Stevens County followed at 62.7 pounds. See the map below for average weight per bushel by county.

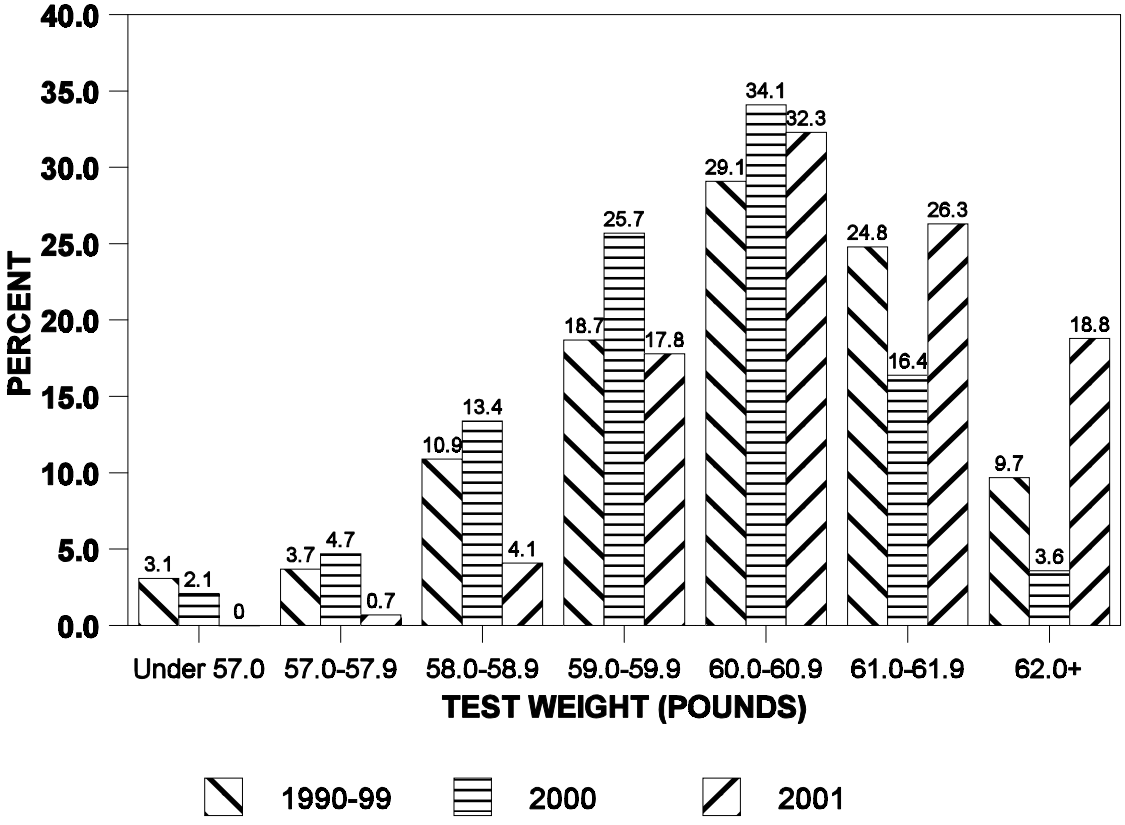


RANGES OF 2001 TEST WEIGHTS

Districts	NW	WC	SW	NC	C	SC	NE	EC	SE	State
Production (000 bu.)	35,000	26,300	49,500	49,100	62,900	79,200	9,100	11,600	21,700	344,400
lb/bushel	- Percent -									
Under 55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.0-55.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56.0-56.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.0-57.9	5.7	0.4	0.0	0.1	0.0	0.2	0.0	0.0	0.4	0.7
58.0-58.9	22.9	1.3	0.2	1.5	1.6	2.2	0.0	2.5	7.8	4.1
59.0-59.9	42.5	18.4	4.1	8.5	14.1	13.5	0.0	81.0	30.2	17.8
60.0-60.9	23.3	50.9	22.6	32.8	37.9	37.4	0.0	11.4	35.1	32.3
61.0-61.9	4.7	26.8	22.0	43.3	34.4	27.1	17.2	5.1	20.6	26.3
62.0-Over	0.7	2.2	51.1	13.8	12.0	19.6	82.8	0.0	5.9	18.8
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TEST WEIGHT RANGES OF KANSAS WHEAT

1990-99, 2000, & 2001



WEIGHT, PROTEIN, AND MOISTURE

County and District	Samples Tested 2001 1/	Test Weight			Protein Content 2/			Moisture		
		Average 1990-99	2000	2001	Average 1990-99	2000	2001	Average 1990-99	2000	2001
CHEYENNE	132	60.3	57.6	59.4	12.4	13.7	13.4	11.1	11.2	10.8
DECATUR	141	60.0	57.3	59.8	12.3	12.8	12.0	11.3	11.4	11.7
GRAHAM	*	59.9	*	*	11.9	*	*	11.4	*	*
NORTON	58	60.1	58.2	61.1	12.1	12.1	12.0	11.4	12.0	11.6
RAWLINS	81	60.1	57.6	59.0	12.2	12.7	12.4	11.0	10.9	11.3
SHERIDAN	*	61.1	57.3	*	12.7	11.8	*	10.5	11.4	*
SHERMAN	378	60.2	58.2	58.9	12.2	13.3	13.3	11.5	11.2	11.0
THOMAS	625	60.1	58.2	59.6	12.4	13.3	12.6	11.3	11.0	11.4
NORTHWEST	**1,415**	**60.2**	**57.8**	**59.5**	**12.3**	**12.9**	**12.7**	**11.3**	**11.2**	**11.3**
GOVE	164	60.0	59.6	60.6	12.2	12.3	12.5	11.4	11.3	11.8
GREELEY	*	60.7	61.3	*	11.5	11.6	*	11.2	10.3	*
LANE	20	60.2	59.3	60.7	11.8	12.0	12.0	11.5	11.4	11.2
LOGAN	5	60.6	61.1	59.2	12.0	11.7	12.7	11.1	11.2	11.6
NESS	41	60.2	59.9	60.4	11.8	12.1	12.2	12.0	11.2	11.9
SCOTT	382	60.4	59.4	60.7	12.0	12.7	12.3	11.5	11.3	11.4
TREGO	13	60.4	60.2	61.3	12.1	12.0	11.4	11.6	11.3	12.0
WALLACE	290	60.7	59.7	59.9	12.2	12.1	12.9	11.5	11.3	11.3
WICHITA	135	60.9	58.9	61.1	11.7	13.0	12.1	11.5	11.0	11.1
WEST CENTRAL	**1,050**	**60.5**	**60.0**	**60.5**	**11.9**	**12.2**	**12.3**	**11.5**	**11.1**	**11.5**
CLARK	*	60.1	*	*	12.4	*	*	11.7	*	*
FINNEY	5	60.3	59.4	62.0	12.1	12.8	13.5	11.3	11.2	10.9
FORD	271	60.5	59.7	60.4	12.4	12.3	12.7	11.7	11.9	12.1
GRANT	89	60.8	59.8	62.3	12.2	13.4	13.3	10.9	10.9	10.9
GRAY	9	60.5	59.1	61.6	12.5	12.8	13.6	11.3	11.7	11.0
HAMILTON	49	60.4	59.7	61.5	12.0	12.8	12.0	11.0	10.6	10.8
HASKELL	*	60.4	59.3	*	12.2	12.7	*	11.3	11.5	*
HODGEMAN	*	60.0	59.0	*	12.0	12.9	*	11.8	12.0	*
KEARNY	10	61.1	60.1	61.8	11.3	12.8	13.2	10.8	10.9	10.6
MEADE	192	60.6	59.6	62.3	12.6	12.4	13.0	11.8	12.0	11.4
MORTON	173	60.6	59.8	62.0	12.3	13.0	12.7	10.5	10.9	10.1
SEWARD	100	60.7	60.1	63.2	12.6	12.6	12.4	11.2	11.5	10.8
STANTON	292	60.4	59.9	61.9	12.2	12.9	12.7	10.6	10.3	10.6
STEVENS	60	60.6	60.0	62.7	12.5	12.9	13.0	10.9	11.0	10.5
SOUTHWEST	**1,250**	**60.5**	**59.6**	**61.8**	**12.3**	**12.8**	**12.9**	**11.2**	**11.3**	**11.0**
CLAY	*	60.1	59.7	*	11.9	11.9	*	11.8	11.9	*
CLOUD	1,148	59.3	60.4	61.2	11.9	11.6	12.1	11.8	12.7	12.3
JEWELL	11	59.9	59.5	60.7	12.1	12.6	12.3	11.7	12.5	12.7
MITCHELL	355	60.1	60.0	61.2	12.1	12.1	12.7	11.7	12.5	12.6
OSBORNE	282	59.8	59.1	60.9	12.3	12.6	12.6	11.7	11.9	12.1
OTTAWA	10	60.0	*	61.0	12.2	*	12.2	11.6	*	12.1
PHILLIPS	79	60.0	58.5	61.0	12.3	12.2	11.9	11.3	11.9	11.5
REPUBLIC	351	59.6	59.5	60.6	12.2	12.6	12.4	11.7	12.2	11.9
ROOKS	57	59.8	57.9	60.5	12.1	12.0	11.8	11.6	12.4	11.9
SMITH	245	60.1	59.1	60.6	12.3	12.2	12.2	11.6	12.2	12.0
WASHINGTON	25	59.4	59.4	62.4	12.0	12.1	12.2	11.9	12.6	12.6
NORTH CENTRAL	**2,563**	**59.8**	**59.3**	**61.0**	**12.2**	**12.2**	**12.3**	**11.7**	**12.3**	**12.2**
BARTON	181	60.1	61.2	60.9	12.7	11.5	12.1	11.9	11.6	12.2
DICKINSON	37	59.9	60.1	60.3	11.7	11.2	11.3	12.2	13.0	12.7
ELLIS	89	60.4	60.3	60.9	11.9	11.8	12.1	11.9	11.3	11.9
ELLSWORTH	67	59.8	61.7	61.3	12.3	10.8	11.9	11.8	12.4	12.5
LINCOLN	122	59.4	61.1	61.4	12.3	11.2	12.0	11.6	11.8	11.9
MCPHERSON	*	59.9	*	*	12.3	*	*	12.0	*	*
MARION	138	59.8	60.7	60.2	11.7	11.0	11.3	12.1	13.3	12.1
RICE	341	60.2	61.3	61.1	12.7	11.4	11.8	11.9	12.4	12.3
RUSH	372	60.3	60.5	60.6	12.0	11.7	12.0	11.8	10.9	11.9
RUSSELL	89	59.9	61.1	61.1	12.4	11.5	12.1	11.9	11.4	12.4
SALINE	*	60.3	*	*	12.2	*	*	11.6	*	*
CENTRAL	**1,436**	**60.1**	**60.9**	**60.8**	**12.2**	**11.4**	**11.8**	**11.9**	**12.1**	**12.2**

WEIGHT, PROTEIN, AND MOISTURE

County and District	Samples Tested 2001 1/	Test Weight			Protein Content 2/			Moisture		
		Average 1990-99	2000	2001	Average 1990-99	2000	2001	Average 1990-99	2000	2001
BARBER	99	59.8	61.0	60.7	12.1	10.4	11.4	11.7	12.6	11.2
COMANCHE	*	60.1	*	*	12.4	*	*	12.0	*	*
EDWARDS	15	60.4	61.2	62.5	12.4	12.2	13.1	12.0	11.7	12.2
HARPER	*	59.1	61.1	*	12.1	10.9	*	11.8	12.4	*
HARVEY	*	60.0	*	*	11.9	*	*	12.2	*	*
KINGMAN	215	60.5	60.9	61.8	11.9	10.6	11.0	11.8	12.8	11.6
KIOWA	117	60.3	60.0	61.2	12.6	11.5	12.1	12.0	12.7	12.4
PAWNEE	608	59.9	60.5	60.8	12.7	12.0	12.4	11.7	11.7	12.1
PRATT	181	60.0	59.9	60.2	12.7	11.4	11.8	11.7	12.6	12.2
RENO	17	60.4	*	61.4	12.3	*	11.3	11.8	*	12.0
SEDGWICK	116	60.3	60.2	60.5	12.1	11.0	11.0	11.7	12.4	12.4
STAFFORD	51	60.3	*	62.6	12.9	*	11.9	11.6	*	12.3
SUMNER	*	59.5	*	*	12.0	*	*	11.9	*	*
SOUTH CENTRAL	**1,419**	**60.0**	**60.9**	**61.3**	**12.2**	**10.8**	**11.6**	**11.8**	**12.3**	**12.0**
ATCHISON	*	59.6	*	*	11.8	*	*	12.4	*	*
BROWN	*	59.3	*	*	11.6	*	*	12.6	*	*
DONIPHAN	*	*	*	*	*	*	*	*	*	*
JACKSON	*	*	*	*	*	*	*	*	*	*
JEFFERSON	*	*	*	*	*	*	*	*	*	*
LEAVENWORTH	*	*	*	*	*	*	*	*	*	*
MARSHALL	29	59.4	60.6	62.2	11.8	11.2	11.8	12.3	12.4	12.8
NEMAHA	*	59.5	*	*	11.9	*	*	12.7	*	*
POTTAWATOMIE	*	60.8	*	*	11.5	*	*	12.0	*	*
RILEY	*	60.4	*	*	12.8	*	*	8.6	*	*
WYANDOTTE	*	59.5	61.0	*	11.3	11.1	*	12.4	12.0	*
NORTHEAST	**29**	**59.4**	**60.6**	**62.2**	**11.8**	**11.2**	**11.8**	**12.4**	**12.4**	**12.8**
ANDERSON	*	*	*	*	*	*	*	*	*	*
CHASE	*	60.4	*	*	12.1	*	*	11.2	*	*
COFFEY	10	59.8	*	59.3	11.1	*	10.0	12.6	*	12.5
DOUGLAS	*	58.7	*	*	11.7	*	*	13.8	*	*
FRANKLIN	60	60.6	*	59.7	11.4	*	10.7	12.3	*	12.1
GEARY	*	*	*	*	*	*	*	*	*	*
JOHNSON	4	60.2	*	61.2	12.2	*	12.2	11.7	*	11.3
LINN	5	*	*	59.3	*	*	10.4	*	*	12.5
LYON	*	*	*	*	*	*	*	*	*	*
MIAMI	*	*	*	*	*	*	*	*	*	*
MORRIS	*	59.6	*	*	12.1	*	*	12.1	*	*
OSAGE	*	59.7	61.5	*	11.6	11.2	*	13.1	13.2	*
SHAWNEE	*	60.1	*	*	11.8	*	*	12.2	*	*
WABAUNSEE	*	59.6	*	*	12.2	*	*	11.0	*	*
EAST CENTRAL	**79**	**59.8**	**61.1**	**59.7**	**11.7**	**11.4**	**10.6**	**12.3**	**12.7**	**12.2**
ALLEN	77	*	59.4	59.8	*	10.1	10.2	*	13.1	12.5
BOURBON	*	*	*	*	*	*	*	*	*	*
BUTLER	*	58.9	*	*	11.7	*	*	12.3	*	*
CHAUTAUQUA	*	*	*	*	*	*	*	*	*	*
CHEROKEE	168	58.8	58.6	60.3	10.6	10.0	10.6	13.4	13.4	12.6
COWLEY	177	59.2	60.5	61.2	11.7	10.2	10.9	12.1	12.9	11.9
CRAWFORD	124	58.9	59.3	60.6	11.0	10.2	10.6	13.0	13.1	12.6
ELK	*	*	*	*	*	*	*	*	*	*
GREENWOOD	*	*	*	*	*	*	*	*	*	*
LABETTE	53	57.8	59.8	59.2	10.4	9.9	10.1	13.1	13.3	12.5
MONTGOMERY	158	58.5	59.3	60.0	11.3	10.0	10.4	13.3	13.1	12.4
NEOSHO	269	58.8	59.9	60.3	11.3	10.2	10.6	13.2	12.9	12.5
WILSON	203	58.9	60.1	60.0	11.5	10.4	11.0	12.9	13.0	12.4
WOODSON	*	58.1	*	*	11.7	*	*	13.2	*	*
SOUTHEAST	**1,229**	**58.8**	**59.8**	**60.4**	**11.4**	**10.1**	**10.7**	**12.7**	**13.1**	**12.3**
STATE	10,470	60.1	59.9	60.9	12.1	11.9	12.1	11.7	11.8	11.8

1/Samples tested represent data from inspection certificates of railroad cars (truckloads are converted to carlot equivalents). Su m m a rized data include old crop and new crop wheat moving from first point of sale and inspected by the Kansas Grain Inspection Service, Inc. 2/ Adjusted to 12 percent moisture.* Not published due to insufficient data or no sample taken, but included in district and State totals.

GRADES, DOCKAGE AND GRADE DEFECTS

Ninety-eight percent of the 2001 wheat carlots sampled averaged number 2 or better, compared with 91 percent for 2000. Wheat grading number 1, at 67 percent, was up 28 points from the 39 percent for 2000. Samples grading number 2, at 31 percent, were down 21 points from 52 percent for 2000. The northeast district of the State had the highest average, with 100 percent of the samples grading number 1. The southwest district was second with 87 percent of the samples grading number 1. The east central had the lowest average grading number 1, with 10 percent. Seventy percent of all samples had less than 0.9 percent dockage, compared with 89 percent in 2000. Total defects, at 1.9, were down from the 2.1 percent in 2000.

PERCENTAGE OF KANSAS WHEAT IN EACH GRADE

Year	District									State
	NW	WC	SW	NC	C	SC	NE	EC	SE	
					Grade No. 1					
1994	27	56	74	28	79	60	75	70	83	57
1995	64	28	2	23	3	5	1	48	1	16
1996	48	73	64	63	60	49	19	40	36	55
1997	71	80	46	90	90	63	92	77	63	72
1998	90	92	90	81	91	88	73	80	42	88
1999	58	73	74	51	63	46	17	39	1	61
2000	5	34	25	42	88	57	88	99	41	39
2001	26	80	87	71	78	70	100	10	68	67
					Grade No. 2					
1994	67	42	25	53	18	31	23	28	14	36
1995	33	61	37	55	50	34	43	34	23	43
1996	38	20	32	30	38	46	45	60	51	38
1997	20	15	47	7	8	29	8	13	29	23
1998	9	7	9	18	8	9	27	20	52	11
1999	35	26	25	38	34	47	78	60	54	34
2000	49	63	71	51	12	39	12	1	50	52
2001	68	19	12	26	21	26	0	89	31	31
					All Other Grades					
1994	6	2	1	19	3	9	2	2	2	7
1995	3	11	61	22	47	61	56	18	76	41
1996	14	7	4	7	2	5	36	0	13	7
1997	9	5	7	3	2	8	0	10	8	5
1998	1	1	1	1	1	3	0	0	6	1
1999	7	1	1	11	3	7	5	1	47	5
2000	46	3	4	7	0	4	0	0	9	9
2001	6	1	1	3	1	4	0	1	1	2

KANSAS WHEAT DOCKAGE PERCENTAGES

Year	Number of Cars Sampled 1/	Percent of Samples with Dockage				Average Dockage of Samples	
		Zero Percent	0.1-0.4 Percent	0.5-0.9 Percent	Over 0.9 Percent	Over 0.9%	All
1994	17,467	0	31	58	11	1.5	0.6
1995	9,879	0	14	59	27	1.7	0.9
1996	14,735	0	20	47	33	2.0	1.1
1997	19,601	0	51	39	10	4.1	0.8
1998	18,190	1	36	56	7	1.3	0.6
1999	12,735	0	47	43	10	1.4	0.6
2000	16,302	0	28	61	11	1.3	0.6
2001	10,470	0	19	51	30	1.4	0.8

1/ Includes truckloads converted to carlot equivalents.

GRADE DEFECT PERCENTAGES OF KANSAS WHEAT

Year	District									State
	NW	WC	SW	NC	C	SC	NE	EC	SE	
Damaged Kernels										
1994	0.1	0.1	0.1	0.3	0.2	0.2	0.5	0.5	0.4	0.2
1995	0.1	0.2	0.3	0.7	0.4	0.3	2.6	0.5	0.8	0.4
1996	0.2	0.2	0.5	0.3	0.3	0.2	1.8	0.5	0.3	0.3
1997	0.1	0.2	0.2	0.0	0.1	0.2	0.2	0.3	0.1	0.1
1998	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.7	0.9	0.2
1999	0.1	0.1	0.3	0.3	0.7	0.6	0.8	0.9	1.8	0.4
2000	0.1	0.1	0.2	0.2	0.2	0.3	0.1	1.3	0.9	0.2
2001	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.4	0.1	0.1
Foreign Material										
1994	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.1	0.1
1995	0.0	0.0	0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.2
1996	0.0	0.0	0.1	0.3	0.2	0.2	0.1	0.1	0.2	0.2
1997	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
1998	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
1999	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1
2000	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.2	0.1	0.1
2001	0.0	0.1	0.0	0.3	0.2	0.2	0.0	0.1	0.1	0.1
Shrunken and Broken Kernels										
1994	2.3	2.3	2.3	2.1	2.0	2.0	1.3	1.5	1.3	2.1
1995	2.4	2.9	2.8	2.4	2.6	2.9	2.0	2.3	2.9	2.7
1996	1.7	1.7	1.4	1.5	1.4	1.9	1.2	1.4	1.2	1.6
1997	1.3	1.5	1.5	0.9	1.0	1.3	0.9	0.9	1.1	1.2
1998	1.4	1.7	1.9	1.3	1.4	1.6	0.8	1.0	1.2	1.5
1999	1.6	1.2	1.2	0.9	0.8	1.1	0.9	1.1	1.1	1.1
2000	2.0	2.1	2.2	1.5	1.5	1.5	1.0	1.1	0.8	1.8
2001	2.0	2.1	1.5	1.3	1.6	1.7	1.0	1.0	1.0	1.6
Total Defects 1/										
1994	2.4	2.4	2.5	2.5	2.4	2.5	1.9	2.1	1.8	2.4
1995	2.5	3.1	3.2	3.3	3.2	3.5	4.7	2.9	3.9	3.3
1996	1.9	1.9	2.0	2.1	1.9	2.3	3.1	2.0	1.7	2.1
1997	1.4	1.8	1.8	1.0	1.2	1.6	1.1	1.3	1.3	1.4
1998	1.6	2.0	2.1	1.6	1.6	1.8	1.1	1.8	2.2	1.8
1999	1.7	1.3	1.5	1.3	1.7	1.8	1.8	2.1	3.0	1.6
2000	2.2	2.3	2.5	1.8	1.8	1.9	1.1	2.5	1.8	2.1
2001	2.1	2.2	1.7	1.8	1.9	2.2	1.2	1.5	1.2	1.9

1/ Percentages by defect type may not add to total defects due to rounding.

WHEAT GRADES AND DOCKAGE - 2001

County and District	Grade						Dockage				Average Dockage of Samples	
	1	2	3	4	5	Sample	Zero %	0.1-0.4%	0.5-0.9%	Over 0.9%	Over 0.9%	All
	- - - - - - - Percent of Total 1/ - - - - - - -						- - - - - Percent of Total 1/ - - - - -				- - - Percent - - -	
CHEYENNE	28	61	11	0	0	0	0	19	64	17	1.5	0.8
DECATUR	53	33	13	0	1	0	0	9	68	23	1.2	0.8
GRAHAM	*	*	*	*	*	*	*	*	*	*	*	*
NORTON	95	5	0	0	0	0	0	3	73	24	1.2	0.8
RAWLINS	7	88	5	0	0	0	0	1	82	17	1.3	0.8
SHERIDAN	*	*	*	*	*	*	*	*	*	*	*	*
SHERMAN	9	81	10	0	0	0	0	0	20	80	1.3	1.2
THOMAS	30	68	2	0	0	0	0	2	57	41	1.2	0.9
NORTHWEST	**26**	**68**	**6**	**0**	**0**	**0**	**0**	**3**	**50**	**47**	**1.3**	**0.9**
GOVE	85	15	0	0	0	0	0	5	38	57	1.4	1.1
GREELEY	*	*	*	*	*	*	*	*	*	*	*	*
LANE	90	10	0	0	0	0	0	10	25	65	1.6	1.3
LOGAN	0	100	0	0	0	0	0	0	80	20	1.3	0.8
NESS	76	24	0	0	0	0	0	0	27	73	1.2	1.1
SCOTT	86	13	1	0	0	0	0	10	56	34	1.4	0.9
TREGO	77	23	0	0	0	0	0	15	77	8	1.3	0.7
WALLACE	54	45	1	0	0	0	0	0	61	39	1.2	0.9
WICHITA	95	5	0	0	0	0	1	39	55	5	1.2	0.5
WEST CENTRAL	**80**	**19**	**1**	**0**	**0**	**0**	**0**	**11**	**52**	**37**	**1.3**	**0.9**
CLARK	*	*	*	*	*	*	*	*	*	*	*	*
FINNEY	100	0	0	0	0	0	0	40	60	0	0.0	0.5
FORD	80	20	0	0	0	0	0	4	64	32	1.2	0.9
GRANT	98	2	0	0	0	0	0	19	66	15	1.2	0.7
GRAY	78	22	0	0	0	0	0	78	22	0	0.0	0.4
HAMILTON	92	8	0	0	0	0	0	8	61	31	1.2	0.8
HASKELL	*	*	*	*	*	*	*	*	*	*	*	*
HODGEMAN	*	*	*	*	*	*	*	*	*	*	*	*
KEARNY	100	0	0	0	0	0	0	80	0	20	1.3	0.5
MEADE	85	11	1	3	0	0	0	24	66	10	1.1	0.6
MORTON	92	8	0	0	0	0	1	18	67	14	1.3	0.7
SEWARD	91	7	1	1	0	0	0	36	64	0	0.0	0.5
STANTON	90	10	0	0	0	0	0	23	55	22	1.2	0.7
STEVENS	100	0	0	0	0	0	0	17	81	2	1.0	0.6
SOUTHWEST	**87**	**12**	**0**	**1**	**0**	**0**	**0**	**17**	**62**	**21**	**1.2**	**0.6**
CLAY	*	*	*	*	*	*	*	*	*	*	*	*
CLOUD	68	32	0	0	0	0	0	47	51	2	1.7	0.5
JEWELL	91	9	0	0	0	0	0	0	64	36	1.8	1.0
MITCHELL	77	18	3	2	0	0	0	6	74	20	1.7	0.9
OSBORNE	69	28	2	1	0	0	0	9	51	40	1.6	1.0
OTTAWA	0	50	50	0	0	0	0	10	90	0	0.0	0.6
PHILLIPS	75	22	3	0	0	0	0	19	49	32	1.3	0.8
REPUBLIC	79	20	1	0	0	0	1	16	67	16	1.2	0.7
ROOKS	56	23	21	0	0	0	0	4	21	75	2.0	1.7
SMITH	74	24	1	1	0	0	0	11	60	29	1.2	0.8
WASHINGTON	100	0	0	0	0	0	0	60	40	0	0.0	0.4
NORTH CENTRAL	**71**	**26**	**2**	**1**	**0**	**0**	**0**	**26**	**57**	**17**	**1.6**	**0.9**
BARTON	82	17	1	0	0	0	0	9	45	46	1.5	1.0
DICKINSON	73	27	0	0	0	0	0	5	79	16	1.1	0.7
ELLIS	88	11	1	0	0	0	0	2	47	51	1.8	1.2
ELLSWORTH	91	9	0	0	0	0	0	22	68	10	1.1	0.6
LINCOLN	89	11	0	0	0	0	0	20	56	24	1.6	0.8
MCPHERSON	*	*	*	*	*	*	*	*	*	*	*	*
MARION	63	36	1	0	0	0	0	44	54	2	2.2	0.5
RICE	79	20	1	0	0	0	0	40	54	6	1.2	0.6
RUSH	72	27	0	1	0	0	0	4	38	58	1.4	1.1
RUSSELL	75	16	6	3	0	0	0	7	48	45	1.5	1.0
SALINE	*	*	*	*	*	*	*	*	*	*	*	*
CENTRAL	**78**	**21**	**1**	**0**	**0**	**0**	**0**	**20**	**49**	**31**	**1.5**	**0.8**

WHEAT GRADES AND DOCKAGE - 2001

County and District	Grade						Dockage				Average Dockage of Samples	
	1	2	3	4	5	Sample	Zero %	0.1-0.4%	0.5-0.9%	Over 0.9%	Over 0.9%	All
	- - - - - - - Percent of Total 1/- - - - - - -						- - - - - Percent of Total 1/- - - - -				- - -Percent- - -	
BARBER	70	24	5	1	0	0	0	26	49	25	2.6	1.1
COMANCHE	*	*	*	*	*	*	*	*	*	*	*	*
EDWARDS	100	0	0	0	0	0	0	93	7	0	0.0	0.3
HARPER	*	*	*	*	*	*	*	*	*	*	*	*
HARVEY	*	*	*	*	*	*	*	*	*	*	*	*
KINGMAN	93	4	1	2	0	0	0	49	44	7	1.3	0.5
KIOWA	97	3	0	0	0	0	0	0	85	15	1.2	0.8
PAWNEE	77	21	1	1	0	0	0	3	41	56	1.6	1.2
PRATT	49	49	2	0	0	0	0	8	62	30	1.4	0.9
RENO	76	24	0	0	0	0	0	71	17	12	1.1	0.5
SEDGWICK	10	78	12	0	0	0	0	49	51	0	0.0	0.5
STAFFORD	86	10	2	2	0	0	0	53	43	4	1.1	0.5
SUMNER	*	*	*	*	*	*	*	*	*	*	*	*
SOUTH CENTRAL	**70**	**26**	**3**	**1**	**0**	**0**	**0**	**25**	**47**	**28**	**1.4**	**0.6**
ATCHISON	*	*	*	*	*	*	*	*	*	*	*	*
BROWN	*	*	*	*	*	*	*	*	*	*	*	*
DONIPHAN	*	*	*	*	*	*	*	*	*	*	*	*
JACKSON	*	*	*	*	*	*	*	*	*	*	*	*
JEFFERSON	*	*	*	*	*	*	*	*	*	*	*	*
LEAVENWORTH	*	*	*	*	*	*	*	*	*	*	*	*
MARSHALL	100	0	0	0	0	0	0	83	17	0	0.0	0.4
NEMAHA	*	*	*	*	*	*	*	*	*	*	*	*
POTTAWATOMIE	*	*	*	*	*	*	*	*	*	*	*	*
RILEY	*	*	*	*	*	*	*	*	*	*	*	*
WYANDOTTE	*	*	*	*	*	*	*	*	*	*	*	*
NORTHEAST	**100**	**0**	**0**	**0**	**0**	**0**	**0**	**83**	**17**	**0**	*****	**0.4**
ANDERSON	*	*	*	*	*	*	*	*	*	*	*	*
CHASE	*	*	*	*	*	*	*	*	*	*	*	*
COFFEY	0	100	0	0	0	0	0	90	10	0	0.0	0.3
DOUGLAS	*	*	*	*	*	*	*	*	*	*	*	*
FRANKLIN	15	85	0	0	0	0	0	98	2	0	0.0	0.3
GEARY	*	*	*	*	*	*	*	*	*	*	*	*
JOHNSON	0	75	25	0	0	0	0	0	50	50	1.4	1.0
LINN	0	100	0	0	0	0	0	80	20	0	0.0	0.3
LYON	*	*	*	*	*	*	*	*	*	*	*	*
MIAMI	*	*	*	*	*	*	*	*	*	*	*	*
MORRIS	*	*	*	*	*	*	*	*	*	*	*	*
OSAGE	*	*	*	*	*	*	*	*	*	*	*	*
SHAWNEE	*	*	*	*	*	*	*	*	*	*	*	*
WABAUNSEE	*	*	*	*	*	*	*	*	*	*	*	*
EAST CENTRAL	**10**	**89**	**1**	**0**	**0**	**0**	**0**	**92**	**6**	**2**	**1.4**	**0.4**
ALLEN	43	57	0	0	0	0	0	62	37	1	1.6	0.4
BOURBON	*	*	*	*	*	*	*	*	*	*	*	*
BUTLER	*	*	*	*	*	*	*	*	*	*	*	*
CHAUTAUQUA	*	*	*	*	*	*	*	*	*	*	*	*
CHEROKEE	53	42	4	0	1	0	0	61	34	5	1.6	0.5
COWLEY	88	11	0	1	0	0	0	18	2	80	2.2	1.8
CRAWFORD	85	15	0	0	0	0	0	89	11	0	0.0	0.3
ELK	*	*	*	*	*	*	*	*	*	*	*	*
GREENWOOD	*	*	*	*	*	*	*	*	*	*	*	*
LABETTE	17	83	0	0	0	0	0	58	38	4	1.6	0.5
MONTGOMERY	47	52	1	0	0	0	0	32	25	43	2.0	1.1
NEOSHO	64	36	0	0	0	0	0	65	26	9	1.7	0.5
WILSON	52	47	1	0	0	0	0	75	19	6	2.0	0.5
WOODSON	*	*	*	*	*	*	*	*	*	*	*	*
SOUTHEAST	**68**	**31**	**1**	**0**	**0**	**0**	**0**	**46**	**17**	**37**	**1.9**	**1.0**
STATE	67	31	2	0	0	0	0	19	51	30	1.4	0.8

1/ May not add due to rounding.*Not published due to insufficient data or no sample taken, but included in district and State totals.

GRADE DEFECT PERCENTAGES

County and District	Samples Tested 2001 1/	Total Damaged Kernels			Foreign Material			Shrunken and Broken Kernels			Total Defects 2/		
		Average 1990-99	2000	2001	Average 1990-99	2000	2001	Average 1990-99	2000	2001	Average 1990-99	2000	2001
CHEYENNE	132	0.1	0.1	0.1	0.0	0.0	0.0	2.0	2.7	2.4	2.1	2.9	2.4
DECATUR	141	0.1	0.1	0.1	0.0	0.0	0.1	1.7	1.7	1.6	1.9	1.8	1.8
GRAHAM	*	0.1	*	*	0.1	*	*	2.1	*	*	2.3	*	*
NORTON	58	0.1	0.6	0.0	0.1	0.1	0.0	1.7	1.5	1.4	1.8	2.1	1.5
RAWLINS	81	0.1	0.1	0.0	0.0	0.0	0.0	1.9	2.3	2.3	2.0	2.4	2.3
SHERIDAN	*	0.0	0.0	*	0.0	0.0	*	2.1	1.6	*	2.1	1.6	*
SHERMAN	378	0.1	0.0	0.0	0.0	0.0	0.0	1.8	2.2	2.1	1.9	2.3	2.1
THOMAS	625	0.1	0.0	0.2	0.0	0.0	0.0	1.8	2.1	2.1	2.0	2.2	2.3
NORTHWEST	**1,415**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**1.8**	**2.0**	**2.0**	**2.0**	**2.2**	**2.1**
GOVE	164	0.1	0.1	0.0	0.0	0.0	0.0	1.8	2.1	1.8	1.9	2.2	1.8
GREELEY	*	0.2	0.2	*	0.0	0.0	*	1.8	2.0	*	2.1	2.2	*
LANE	20	0.2	0.2	0.1	0.0	0.1	0.1	2.1	2.2	1.8	2.3	2.5	1.9
LOGAN	5	0.0	0.1	0.0	0.0	0.0	0.1	1.7	1.7	3.4	1.8	1.9	3.5
NESS	41	0.2	0.1	0.0	0.0	0.0	0.1	2.0	2.2	2.1	2.2	2.4	2.2
SCOTT	382	0.2	0.1	0.1	0.0	0.0	0.0	1.8	2.4	1.9	2.0	2.5	2.0
TREGO	13	0.2	0.1	0.3	0.1	0.1	0.1	2.1	2.1	1.8	2.4	2.2	2.2
WALLACE	290	0.1	0.2	0.3	0.0	0.0	0.0	1.8	2.1	2.1	1.9	2.3	2.4
WICHITA	135	0.2	0.1	0.0	0.0	0.0	0.0	2.0	2.6	1.7	2.2	2.8	1.7
WEST CENTRAL	**1,050**	**0.2**	**0.0**	**0.1**	**0.0**	**0.0**	**0.1**	**1.9**	**2.1**	**2.1**	**2.1**	**2.3**	**2.2**
CLARK	*	0.3	*	*	0.0	*	*	2.0	*	*	2.4	*	*
FINNEY	5	0.2	0.2	0.0	0.1	0.2	0.0	1.8	2.7	1.8	2.1	3.0	1.8
FORD	271	0.2	0.5	0.2	0.1	0.1	0.2	2.0	2.0	2.0	2.3	2.6	2.3
GRANT	89	0.2	0.2	0.1	0.0	0.0	0.1	2.0	3.0	1.7	2.2	3.2	1.9
GRAY	9	0.2	0.1	0.1	0.0	0.0	0.0	1.8	2.2	0.9	2.0	2.3	1.0
HAMILTON	49	0.3	0.1	0.0	0.0	0.0	0.0	2.0	2.8	2.1	2.4	2.9	2.2
HASKELL	*	0.3	0.1	*	0.0	0.0	*	1.7	2.2	*	2.0	2.3	*
HODGEMAN	*	1.3	0.0	*	0.0	0.1	*	2.1	1.8	*	3.4	1.9	*
KEARNY	10	0.1	0.1	0.0	0.0	0.0	0.0	1.7	1.8	0.7	1.9	2.0	0.7
MEADE	192	0.3	0.2	0.0	0.1	0.3	0.2	1.8	1.5	1.4	2.1	2.0	1.7
MORTON	173	0.3	0.3	0.1	0.0	0.1	0.0	2.1	2.2	1.8	2.4	2.5	1.9
SEWARD	100	0.2	0.3	0.0	0.1	0.4	0.1	1.9	2.0	1.3	2.1	2.6	1.4
STANTON	292	0.1	0.1	0.1	0.0	0.0	0.0	2.2	2.5	1.7	2.4	2.7	1.7
STEVENS	60	0.2	0.1	0.1	0.0	0.0	0.0	2.0	2.0	1.2	2.2	2.1	1.3
SOUTHWEST	**1,250**	**0.3**	**0.0**	**0.1**	**0.0**	**0.1**	**0.0**	**1.9**	**2.2**	**1.5**	**2.2**	**2.5**	**1.7**
CLAY	*	0.1	0.0	*	0.2	0.1	*	1.7	1.6	*	2.0	1.7	*
CLOUD	1,148	0.2	0.0	0.5	0.2	0.2	0.4	2.0	1.5	1.6	2.5	2.0	2.4
JEWELL	11	0.2	0.0	0.0	0.1	0.1	0.2	1.7	1.5	1.2	2.1	1.6	1.4
MITCHELL	355	0.2	0.1	0.2	0.2	0.1	0.3	1.7	1.5	1.2	2.0	1.7	1.8
OSBORNE	282	0.2	0.1	0.1	0.1	0.1	0.3	1.7	1.7	1.4	2.1	1.9	1.8
OTTAWA	10	0.1	*	0.0	0.3	*	0.9	1.7	*	1.4	2.0	*	2.3
PHILLIPS	79	0.2	0.1	0.0	0.1	0.0	0.2	1.7	1.5	1.4	1.9	1.7	1.7
REPUBLIC	351	0.6	0.1	0.3	0.1	0.1	0.2	1.7	1.4	1.4	2.4	1.6	1.9
ROOKS	57	0.1	0.0	0.0	0.1	0.1	0.3	1.6	1.5	1.7	1.8	1.5	2.0
SMITH	245	0.2	0.0	0.1	0.1	0.1	0.1	1.5	1.3	1.5	1.7	1.4	1.7
WASHINGTON	25	0.6	1.2	0.3	0.1	0.1	0.1	1.7	1.3	0.6	2.4	2.6	1.0
NORTH CENTRAL	**2,563**	**0.3**	**0.0**	**0.1**	**0.2**	**0.1**	**0.3**	**1.7**	**1.5**	**1.3**	**2.1**	**1.8**	**1.8**
BARTON	181	0.3	0.1	0.1	0.2	0.0	0.2	1.7	1.7	1.6	2.2	1.9	1.9
DICKINSON	37	0.2	0.3	0.2	0.1	0.1	0.2	1.6	1.0	1.3	1.9	1.4	1.8
ELLIS	89	0.2	0.1	0.2	0.1	0.1	0.2	1.9	1.8	1.3	2.2	2.0	1.7
ELLSWORTH	67	0.2	0.2	0.1	0.1	0.1	0.3	1.6	1.2	1.4	2.0	1.5	1.7
LINCOLN	122	0.2	0.1	0.2	0.1	0.1	0.2	1.8	1.5	1.5	2.2	1.6	1.9
MCPHERSON	*	0.3	*	*	0.2	*	*	1.5	*	*	2.0	*	*
MARION	138	0.3	0.3	0.2	0.2	0.1	0.2	1.6	1.2	1.7	2.1	1.6	2.1
RICE	341	0.2	0.1	0.1	0.1	0.1	0.2	1.4	1.6	1.8	1.8	1.8	2.1
RUSH	372	0.3	0.2	0.1	0.1	0.1	0.2	1.8	1.9	1.8	2.2	2.2	2.1
RUSSELL	89	0.2	0.2	0.2	0.1	0.1	0.4	1.8	1.5	1.4	2.2	1.8	2.0
SALINE	*	0.4	*	*	0.2	*	*	1.9	*	*	2.6	*	*
CENTRAL	**1,436**	**0.3**	**0.0**	**0.2**	**0.2**	**0.1**	**0.2**	**1.7**	**1.5**	**1.6**	**2.1**	**1.8**	**1.9**

GRADE DEFECT PERCENTAGES

County and District	Samples Tested 2001 1/	Total Damaged Kernels			Foreign Material			Shrunken and Broken Kernels			Total Defects 2/		
		Average 1990-99	2000	2001	Average 1990-99	2000	2001	Average 1990-99	2000	2001	Average 1990-99	2000	2001
BARBER	99	0.2	0.1	0.1	0.2	0.1	0.2	1.9	1.3	1.7	2.2	1.4	2.0
COMANCHE	*	0.2	*	*	0.2	*	*	1.9	*	*	2.3	*	*
EDWARDS	15	0.3	0.1	0.0	0.0	0.0	0.0	1.7	1.3	1.0	2.1	1.5	1.0
HARPER	*	0.2	0.0	*	0.4	0.2	*	2.0	1.8	*	2.6	2.0	*
HARVEY	*	0.2	*	*	0.2	*	*	1.4	*	*	1.8	*	*
KINGMAN	215	0.2	0.1	0.0	0.3	0.2	0.2	1.5	1.3	1.6	2.0	1.6	1.8
KIOWA	117	0.4	0.6	0.0	0.1	0.1	0.2	1.7	1.3	1.5	2.1	2.0	1.6
PAWNEE	608	0.2	0.2	0.1	0.1	0.1	0.2	1.9	1.9	1.7	2.2	2.1	2.0
PRATT	181	0.3	0.1	0.1	0.2	0.1	0.2	1.7	1.5	1.9	2.2	1.6	2.2
RENO	17	0.5	*	0.2	0.3	*	0.3	1.8	*	1.9	2.5	*	2.3
SEDGWICK	116	0.4	1.7	1.6	0.2	0.2	0.2	1.8	1.6	2.1	2.4	3.5	4.0
STAFFORD	51	0.2	*	0.1	0.2	*	0.2	1.7	*	1.3	2.1	*	1.6
SUMNER	*	0.2	*	*	0.2	*	*	1.8	*	*	2.3	*	*
SOUTH CENTRAL	**1,419**	**0.3**	**0.0**	**0.3**	**0.2**	**0.2**	**0.2**	**1.8**	**1.5**	**1.7**	**2.3**	**1.9**	**2.2**
ATCHISON	*	1.0	*	*	0.1	*	*	1.3	*	*	2.3	*	*
BROWN	*	1.0	*	*	0.0	*	*	1.1	*	*	2.2	*	*
DONIPHAN	*	*	*	*	*	*	*	*	*	*	*	*	*
JACKSON	*	*	*	*	*	*	*	*	*	*	*	*	*
JEFFERSON	*	*	*	*	*	*	*	*	*	*	*	*	*
LEAVENWORTH	*	*	*	*	*	*	*	*	*	*	*	*	*
MARSHALL	29	0.7	0.1	0.2	0.1	0.0	0.0	1.4	1.0	1.0	2.2	1.1	1.2
NEMAHA	*	1.0	*	*	0.1	*	*	1.6	*	*	2.7	*	*
POTTAWATOMIE	*	0.4	*	*	0.0	*	*	1.4	*	*	1.8	*	*
RILEY	*	0.2	*	*	0.1	*	*	2.3	*	*	2.6	*	*
WYANDOTTE	*	1.2	1.2	*	0.1	0.1	*	1.4	1.4	*	2.7	2.7	*
NORTHEAST	**29**	**1.0**	**0.1**	**0.2**	**0.1**	**0.0**	**0.0**	**1.4**	**1.0**	**1.0**	**2.4**	**1.1**	**1.2**
ANDERSON	*	*	*	*	*	*	*	*	*	*	*	*	*
CHASE	*	0.1	*	*	0.0	*	*	2.0	*	*	2.2	*	*
COFFEY	10	0.6	*	0.2	0.1	*	0.1	1.2	*	0.5	1.8	*	0.8
DOUGLAS	*	1.9	*	*	0.1	*	*	1.3	*	*	3.3	*	*
FRANKLIN	60	0.5	*	0.2	0.0	*	0.1	1.1	*	0.6	1.6	*	0.9
GEARY	*	*	*	*	*	*	*	*	*	*	*	*	*
JOHNSON	4	0.7	*	0.8	0.1	*	0.2	1.9	*	3.1	2.8	*	4.1
LINN	5	*	*	0.7	*	*	0.1	*	*	0.7	*	*	1.4
LYON	*	*	*	*	*	*	*	*	*	*	*	*	*
MIAMI	*	*	*	*	*	*	*	*	*	*	*	*	*
MORRIS	*	0.2	*	*	0.3	*	*	1.9	*	*	2.4	*	*
OSAGE	*	0.8	0.3	*	0.2	0.1	*	1.3	0.8	*	2.3	1.1	*
SHAWNEE	*	0.6	*	*	0.1	*	*	1.7	*	*	2.5	*	*
WABAUNSEE	*	0.7	*	*	0.1	*	*	1.7	*	*	2.5	*	*
EAST CENTRAL	**79**	**0.6**	**1.3**	**0.4**	**0.1**	**0.2**	**0.1**	**1.6**	**1.1**	**1.0**	**2.3**	**2.5**	**1.5**
ALLEN	77	*	0.4	0.1	*	0.0	0.0	*	0.7	0.8	*	1.1	0.9
BOURBON	*	*	*	*	*	*	*	*	*	*	*	*	*
BUTLER	*	0.3	*	*	0.2	*	*	1.5	*	*	1.9	*	*
CHAUTAUQUA	*	*	*	*	*	*	*	*	*	*	*	*	*
CHEROKEE	168	1.3	2.6	0.4	0.1	0.1	0.1	1.0	0.9	1.2	2.4	3.6	1.6
COWLEY	177	0.4	0.2	0.1	0.2	0.1	0.1	1.6	0.9	1.0	2.2	1.2	1.2
CRAWFORD	124	1.5	2.6	0.4	0.1	0.1	0.1	1.2	0.7	0.7	2.7	3.3	1.2
ELK	*	*	*	*	*	*	*	*	*	*	*	*	*
GREENWOOD	*	*	*	*	*	*	*	*	*	*	*	*	*
LABETTE	53	0.6	1.1	*	0.1	0.0	*	1.4	0.9	*	2.1	2.0	*
MONTGOMERY	158	1.0	0.9	0.1	0.1	0.1	0.1	1.5	0.9	1.0	2.6	1.8	1.1
NEOSHO	269	0.8	0.7	0.0	0.1	0.0	0.0	1.3	0.7	0.9	2.2	1.5	1.0
WILSON	203	0.8	0.7	0.2	0.1	0.1	0.1	1.3	0.9	1.2	2.3	1.7	1.5
WOODSON	*	0.7	*	*	0.1	*	*	1.3	*	*	2.1	*	*
SOUTHEAST	**1,229**	**0.8**	**1.0**	**0.1**	**0.1**	**0.1**	**0.1**	**1.4**	**0.8**	**1.0**	**2.3**	**1.8**	**1.2**
STATE	10,470	0.3	0.0	0.1	0.1	0.1	0.1	1.8	1.8	1.6	2.2	2.1	1.9

1/ Samples tested represent data from inspection certificates of railroad cars (truckloads are converted to carlot equivalents). Summarized data include old crop and new crop wheat moving from first point of sale and inspected by the Kansas Grain Inspection Service, Inc. 2/ Percentages by defect may not add to total due to rounding. * Not published due to insufficient data or no sample taken, but included in district and State totals.

KANSAS WHEAT VARIETIES - 2001 CROP

Jagger was the leading variety of wheat seeded in Kansas for the 2001 crop. Accounting for 35.8 percent of the State's wheat, Jagger increased slightly from a year ago and was by far the most popular variety seeded in the southern third of the State. Jagger made the biggest gain in the southeast district.

The KSU maintained variety 2137 ranked second overall, with 22.3 percent of the acreage. It ranked first in five districts and second in the other four. TAM 107 remained in third position, but dropped to 5.3 percent of the acreage State-wide. Ike remained in fourth place with 3.6 percent of the acreage, but dropped 0.5 percent from last year. The fifth most popular variety was Karl and improved Karl with 3.3 percent of the State's acreage. New to the top ten is OSU maintained variety 2174, ranking sixth with 3.0 percent. TAM 110 moved up to seventh place, with 2.8 percent. The KSU maintained variety 2163 moved down to eighth place, with 2.0 percent. Dominator remained in the top ten, with 1.5 percent. Back in the top ten is AgriPro Coronado, with 1.1 percent. Acres planted with blended varieties were not included in the rankings by variety.

Blends were used more extensively in the north central and central parts of the State, accounting for 7.0 percent of the acres planted State-wide. Out of the total State acres planted with blends, 93 percent had Jagger in the blend and 82 percent had 2137 in the blend. All Hard White varieties accounted for 0.8 percent of the State's acreage, with Trego accounting for almost half the Hard White seeded acreage.

DISTRIBUTION OF KANSAS WINTER WHEAT VARIETIES, 1992-2001

VARIETY	BY SPECIFIED YEARS									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	PERCENT OF SEEDED ACREAGE									
Jagger	--	--	--	--	1.0	6.4	20.2	29.2	34.0	35.8
2137	--	--	--	--	--	1.0	13.5	22.0	23.1	22.3
TAM 107	18.3	19.8	19.0	20.6	17.1	17.0	12.6	8.3	6.3	5.3
Ike	--	--	--	0.9	7.2	10.5	7.0	5.5	4.1	3.6
Karl/Karl 92	11.5	23	23.6	22.4	20.9	22.1	10.8	5.9	3.5	3.3
2174	--	--	--	--	--	--	--	--	1.1	3.0
TAM 110	--	--	--	--	--	--	--	0.5	1.3	2.8
2163	4.6	9	13.8	17.1	19.8	15.4	10.4	3.4	2.3	2.0
Dominator	--	--	--	--	--	--	0.2	0.8	1.4	1.5
AgriPro Coronado	--	--	--	--	--	--	0.8	1.3	1.0	1.1
Larned	8.9	8.3	8.3	7.6	4.8	3.6	2.4	1.9	1.2	1.0
Vista	--	--	--	0.3	0.8	1.2	1.1	0.9	0.9	1.0
AGSECO 7853	0.2	1.4	2.1	3.7	4.6	4.0	3.4	1.9	1.5	0.9
AgriPro Hondo	--	--	--	--	--	--	--	--	0.2	0.5
Alliance	--	--	--	--	--	--	--	0.1	0.3	0.5
AgriPro Tomahawk	--	1.5	6.2	7.0	4.7	3.1	1.8	1.2	0.8	0.4
Akron	--	--	--	--	--	--	0.4	0.8	1.0	0.4
AgriPro Ogallala	--	--	--	0.2	1.5	1.3	0.8	0.7	0.8	0.4
AgriPro Pecos	--	--	0.2	1.1	1.8	1.6	1.6	0.9	0.7	0.4
Niobrara	--	--	--	--	--	--	--	--	0.5	0.3
AgriPro Big Dawg	--	--	--	--	--	--	0.2	0.4	0.5	0.3
AGSECO Onaga	--	--	--	--	--	--	--	0.1	0.1	0.2
T83	--	--	--	--	--	--	--	--	0.1	0.2
T81	--	--	--	--	--	--	--	--	0.2	0.2
AgriPro Thunderbolt	--	--	--	--	--	--	--	--	--	0.2
Goretzen1878	--	--	--	--	--	--	--	--	--	0.2
Arapahoe	0.3	0.2	0.8	0.8	1.0	1.1	0.5	0.4	0.4	0.2
Newton	5.8	3.1	2.5	1.6	1.3	0.6	0.3	0.4	0.1	0.2
Eagle	1.6	1	1.1	1.1	0.6	0.5	0.4	0.3	0.2	0.2
Blends	--	--	--	--	--	--	2.6	6.1	7.5	7.0
Hard White Varieties	--	--	--	--	--	--	--	--	0.2	0.8
Other Hard Varieties	48.6	32.4	22.0	15.5	12.7	10.3	9.0	7.0	4.7	3.8
Other Soft Varieties	0.2	0.3	0.4	0.1	0.2	0.3	--	--	--	--
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WHEAT QUALITY PROFILE - MILLING RESULTS

SURVEY AND PROJECT PROCEDURES

The wheat quality profile is a joint project of the Kansas State University Department of Grain Science and Industry and Kansas Agricultural Statistics Service. This report provides additional information for the evaluation of the milling and baking characteristics of Kansas wheat and makes available some meaningful comparisons with previous years. Historic data are shown at the end of this bulletin for selected characteristics for the period 1992-2001.

Users of these data should recognize there are some limitations in making inferences from the results. Sample size is a limiting factor for some varieties and quality characteristics. However, one of the major indications the survey provides is quality factors by variety. This information should be useful in evaluating the milling and flour qualities of the different varieties as produced in farm fields as well as comparing variety data with that summarized in previous Wheat Quality publications.

SAMPLE COLLECTION

Wheat from which the quality profile data were developed was collected as a part of the regular Wheat Objective Yield Survey program of Kansas Agricultural Statistics Service. Survey samples were distributed proportionally to the acreage grown in each area of the State with a total of 310 sample units selected. Two small plots were laid out in each field for observation during the growing season. Plant and head counts were made within the plots about May 1, June 1, and July 1. Enumerators were instructed to return to each sample field immediately prior to harvest (normally within seven days) to clip the wheat heads within the sample plots. These heads were sent to the Kansas Agricultural Statistics Service lab in Topeka for threshing and the yield per acre was computed. Wheat for the quality profile testing was also collected from these sample fields. If a sample was abandoned or lost, an alternate sample was collected from the immediate area. Based on average head weight and quantities needed for laboratory analysis, about 1,000 grams of grain were collected from each sample field.

QUALITY TESTS

The threshed grain was sent to the Department of Grain Science and Industry at Kansas State University for quality analysis.

Moisture and protein contents, test weight, 1,000 kernel weight, kernel size distribution, degree of softening, and falling number were determined on the individual samples.

The individual samples were then composited by districts in order to provide sufficient grain and flour for reliable milling and dough testing. When there were several samples of the same variety from a district, equal weights of that variety were composited. A mixed variety composite was made for each district using equal weights of any remaining varieties. The resulting flours were used for chemical and rheological tests.

DESCRIPTION OF TESTING PROCEDURES

MARKETING TESTS

Wheat grades are based on tests conducted by inspectors who are licensed and supervised by the Federal Grain Inspection Service (FGIS). These tests determine the physical and biological condition of the grain. They include test weight, moisture and protein contents, presence of diseased and damaged kernels, unmillable material, and sanitary condition.

Flour millers perform additional tests to determine specific qualities desired for milling and baking. A major portion of Kansas hard red winter wheat is milled into flour for large wholesale bread bakeries.

The following test descriptions are intended as an aid in interpreting the tables on the following pages. For additional information on hard red winter wheat quality analysis see "Evaluating Bread Wheat" published by the Wheat Quality Council, P.O. Box 966, Pierre, SD 57501-0966.

PROTEIN

The protein test is used to predict the quantity of gluten and not the quality. The protein content of wheat or flour is predicted by determining the percent of nitrogen using the combustion nitrogen analysis (CNA) method, then multiplying by an appropriate conversion factor. Combustion nitrogen analysis involves combusting a sample in pure oxygen, collecting the combustion gases, then analyzing the gases for nitrogen content by measuring the thermal conductivity of the gases.

Wheat protein content is reported on a 12% moisture basis while flour protein content is reported on a 14% moisture basis.

Protein content of commercially milled flour averages about 1% less than the wheat from which it was milled. Flour for pan bread is usually milled from wheats having at least 12% to 13% protein. Hearth breads and hard rolls usually require higher protein content flour.

SINGLE KERNEL CHARACTERIZATION SYSTEM (SKCS)

The SKCS unit directly measures physical characteristics of wheat such as kernel hardness, kernel diameter, and kernel weight. Measurements are made on 300 individual kernels of wheat, and the single kernel average and standard deviation (uniformity) are calculated. Additionally, a classification such as "Hard", "Mixed", or "Soft" is assigned. Single kernel weight value is highly correlated with the One Thousand Kernel Weight value.

TEST WEIGHT PER BUSHEL

This test determines the weight per Winchester bushel of a sample under controlled conditions. Determinations were made using a one quart kettle for 1000 grams, or for small samples, a 1/8 quart kettle and 125 grams of wheat. This method is described in Circular No. 921 issued by the United States Department of Agriculture.

There is a correlation between the test weight and the yield of straight grade flour from a sample. Straight grade flour is a blend of all the flour streams from each grinding operation in the mill. As the test weight increases, the expected yield of flour also increases.

The test weight of wheat decreases as moisture is added. This decrease is the result of:

1) the lower specific gravity of water as compared to wheat
2) the swelling of the kernels as water is absorbed

If the wetted wheat is redried, it doesn't regain the original test weight because the kernel is unable to shrink after swelling and the roughened bran coat prevents close packing of the kernels. Shriveled kernels also show a decreased test weight because of their inability to pack tightly.

A low test weight is a strong indicator of unsound wheat. This test, used along with the 1000 kernel weight and the wheat size tests, provides an estimate of milling extraction (flour yield).

HECTOLITER WEIGHT

To convert test weight in pounds per Winchester bushel (lb/bu) to kilograms per hectoliter (kg/hl), the following formula is used:

$$kg/hl = (1.292 \times lb/bu) + 1.419$$

This is a change for 2001. The formula used in previous years was: kg/hl = lb/bu X 1.287.

1000 KERNEL WEIGHT (TKW)

An electronic seed counter is used to count 40 grams of cleaned whole kernels of wheat. Kernel weight is reported in grams per 1000 kernels on a 12% moisture basis.

The percentage of endosperm in wheat kernels of the same variety is normally greater in larger wheat kernels than in smaller kernels. Plump kernels of wheat weigh more; and therefore, have a higher 1000 kernel weight which suggests good milling extraction. However, this conclusion must be substantiated by the test weight and wheat size tests.

WHEAT KERNEL (SIZE) DISTRIBUTION

Kernel size distribution is determined by sifting 200 grams of wheat over wire mesh screens of two different sizes (7w and 9w) for one minute.

Higher percentages over the 7w represent larger, plumper kernels containing a large percentage of endosperm indicating a higher potential flour yield. Factors such as wetting or scouring will affect the outcome of this test. Wetting will increase the size of the wheat kernels. Although the kernels are larger, the milling extraction will remain the same. On the other hand, scouring will decrease the size of the wheat kernels by removing the dust and smoothing the bran of the kernels. Although the theoretical yield is lower, the milling extraction is unchanged. To eliminate false conclusions, the wheat size test should be used in conjunction with the test weight and 1000 kernel weight tests.

MOISTURE

The measurement of moisture in wheat and flour is important because:

1) wheat cannot be safely stored above 12-13 percent moisture
2) moisture has a bearing on flour yield in milling
3) all analysis must be on a common moisture basis to be compared

Wheat moisture is measured using a Motomco Moisture Meter. The Motomco Moisture Meter works on the principle of capacitance. The capacitance is greater in water than in the rest of the kernel; as a result, the increase in capacitance can be related to the water content. Moisture calibration of the Motomco is checked with the Air Oven Method (AACC Method 44-15A). Moisture content is calculated from the loss in weight which occurs during oven drying at 130° C for one hour.

LABORATORY MILLING

The composited wheat samples were conditioned by adding enough water to bring the moisture content to 15.0% approximately 24 hours prior to milling. Each composited sample was milled on a Brabender Quadrumat Senior laboratory flour mill. Four products were obtained from each milling: bread flour, reduction flour, bran, and shorts. Total flour extraction (yield) was expressed as percentage of the total products recovered from the mill.

The percent of ash, or mineral content (AACC Method 08-01), is given with the flour extraction as an additional measure of milling performance. The bran coat normally contains about ten times the amount of ash as the endosperm. As the level of extraction increases, the ash content typically increases indicating that more bran material was ground into flour. Different wheats also have varying amounts of ash content in the endosperm, depending on the variety and the growing conditions. A wheat with good milling characteristics gives a high yield of low ash flour.

WET GLUTEN

Ten grams of ground wheat meal and 5.2 milliliters of 2 percent salt solution are mixed in the Glutomatic test chamber for 20 seconds. The gluten is then washed for 5 minutes and a separation of gluten and soluble starch is obtained. The gluten ball is then divided and placed in a centrifuge for 1 minute to remove excess water. The weight of the centrifuged gluten x 10 = Percent Wet Gluten.

DRY GLUTEN

The gluten from the wet gluten process above is placed between two heated Teflon-coated plates for approximately 4 minutes. The weight of the dry gluten x 10 = Percent Dry Gluten.

FALLING NUMBER (AACC Method 56-81B)

The falling number test is used to detect sprout damage in wheat. Wet weather during harvest causes sprouting and the release of starch-liquefying enzymes. These enzymes are very active at high temperatures and may cause the baked product to be gummy inside or the flour in gravies and soups to break down.

The falling number test is relatively simple. The falling number value is the number of seconds from the time of immersion of the test tube in boiling water until the stirrer-viscometer has fallen a prescribed distance through a flour paste. As the amount of sprouted wheat increases, the falling number decreases.

There is an optimum falling number value for each flour use.

FARINOGRAPH AND MIXOGRAPH

The mixograph and farinograph measure and record the resistance to mixing of a flour and water dough. The recording, or curve, rises to a "peak" as the flour proteins are developed into a three dimensional structure (gluten) and then falls as the gluten is broken down by continued mixing.

Time required for a mixograph or farinograph curve to reach the "peak" is an estimate of the amount of mixing required to properly develop the dough for bread baking. The rate at which the curve falls and narrows after the peak, and stability of curve height on either side of the peak are indicators of tolerance to over-mixing. Curves made by the two instruments are not directly comparable.

The water absorption values obtained with the farinograph and mixograph provide estimates of water required for baking. Absorption usually increases as protein content increases.

Large mechanized bakeries require flour with high water absorption, medium-long mixing requirement, and adequate mixing tolerance.

Flours with low mixing requirement usually lack mixing tolerance. Flours with excessive mixing requirement have good tolerance but increase bakery energy costs, disrupt production schedules, and may cause machining problems which results in inferior loaves which cannot be sold.

The following information is derived from the mixograph test (AACC Method 54-40A):

Absorption: The percentage of water required to produce an optimum mixogram. Too much water produces a curve that dips during the development stage; too little water causes the curve to be very wide.

Peak (Mixing) Time: The time required for the dough to reach full development. This time can be determined from the intersection of lines drawn through the center of both sides of the curve. The time (minutes) from the start of the curve to the intersection of the two lines is the optimum mixing time.

Mixing Tolerance: There is no standard measure of mixograph mixing tolerance. A dough with poor mixing tolerance will produce a curve with a very sharp peak followed by an immediate decrease in width and height of the curve. A dough with good mixing tolerance will produce a curve with a gradual peak that maintains its width and height after the peak.

Information derived from the farinograph test (AACC Method 54-21,A) include:

Absorption: This is the percentage of water required to center the curve on the 500 Brabender Unit (B.U.) line at the maximum consistency of the dough (Peak). Absorption is reported on a 14% moisture basis.

Peak (Mixing) Time: This is the time required for the curve to reach its full development or maximum consistency. Long peak times are usually associated with strong wheats.

Stability (Tolerance): This is the time that the curve remains above the 500 B.U. line and is measured from the arrival time to the departure time. The longer the stability, the greater the abuse and the longer the fermentation a flour is able to withstand.

Degree of Softening: This is another indicator of mixing tolerance of the dough. Given in Brabender units, it measures the breakdown of the dough 12 minutes after the peak mixing time. Lower values are better as they indicate greater tolerance.

WHEAT QUALITY PROFILE - 2001 CROP

INDIVIDUAL SAMPLES

Area & Variety	No. of Samples	Protein 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			SKCS Hardness	Falling Number 2/
						Over 7W	Over 9W	Thru 9W		
		Pct.	Lb/Bu	Kg/Hl	Grams	- - - Percent - - -				Seconds
NORTHWEST										
2137	4	12.2	59.7	78.6	26.4	26.9	67.4	2.7	77.9	417
ARAPAHOE	3	13.1	58.7	77.3	26.0	18.6	79.2	2.2	78.3	444
JAGGER	6	12.6	60.1	79.1	27.8	35.7	62.1	2.2	76.1	423
OTHER	17	12.5	59.6	78.5	27.6	36.2	60.3	3.5	73.0	429
ALL VARIETIES	30	12.5	59.7	78.5	27.3	33.5	63.5	3.0	74.8	428
MINIMUM	-	8.5	53.1	70.0	20.3	1.5	21.4	0.2	61.4	278
MAXIMUM	-	15.5	63.9	83.9	34.2	78.5	93.7	10.4	84.1	497
WEST CENTRAL										
2137	10	11.6	60.3	79.4	26.5	34.3	64.0	1.7	80.0	454
IKE	7	13.2	60.8	80.0	29.2	47.3	51.2	1.5	73.5	412
JAGGER	7	12.8	60.8	80.0	28.8	45.6	53.0	1.4	77.8	422
TAM 107	5	12.1	60.5	79.6	30.3	52.0	46.2	1.8	71.1	448
OTHER	12	12.9	59.7	78.6	27.4	40.5	56.8	2.6	74.0	422
ALL VARIETIES	41	12.5	60.3	79.4	28.1	42.4	55.7	1.9	75.7	431
MINIMUM	-	10.1	55.9	73.7	22.9	14.5	21.9	0.0	66.7	355
MAXIMUM	-	15.1	64.8	85.1	33.3	77.7	80.8	6.3	87.0	538
SOUTHWEST										
2137	10	12.2	60.7	79.8	29.5	50.5	46.4	3.1	73.7	406
IKE	5	12.2	59.3	78.0	27.3	35.6	61.0	3.4	72.9	358
JAGGER	12	13.3	62.3	81.9	31.1	58.2	40.8	1.0	78.8	399
TAM 107	4	13.2	60.8	79.9	31.1	60.5	38.4	1.1	82.3	438
OTHER	14	12.6	62.0	81.6	29.8	53.8	44.4	1.8	74.5	405
ALL VARIETIES	45	12.7	61.4	80.7	29.9	52.8	45.2	2.0	76.0	401
MINIMUM	-	9.7	54.1	71.3	20.0	13.9	17.0	0.2	48.6	283
MAXIMUM	-	15.6	64.4	84.6	37.6	82.5	82.8	11.3	88.6	481
NORTH CENTRAL										
2137	13	11.8	60.4	79.5	28.3	44.5	53.2	2.2	79.0	406
DOMINATOR	5	11.6	62.3	81.9	28.9	41.7	56.7	1.7	75.6	423
JAGGER	8	13.2	60.7	79.9	28.7	47.4	50.3	2.3	77.2	417
KARL 92	6	11.9	61.1	80.3	29.3	44.3	54.2	1.5	70.0	443
OTHER	9	12.1	60.2	79.1	28.3	52.6	45.4	2.0	73.4	423
ALL VARIETIES	41	12.1	60.7	79.9	28.6	46.5	51.5	2.0	75.7	419
MINIMUM	-	9.8	57.6	75.9	23.7	13.6	3.3	0.2	56.4	379
MAXIMUM	-	15.2	63.3	83.3	33.8	96.5	83.3	7.8	89.1	518
CENTRAL										
2137	15	12.2	60.8	80.0	28.6	43.5	54.8	1.7	77.3	416
2163	3	11.7	61.1	80.4	29.4	53.2	45.7	1.1	72.9	457
DOMINATOR	6	12.2	60.0	78.9	26.4	27.8	70.0	2.2	61.3	429
JAGGER	12	11.6	60.2	79.1	28.6	50.5	47.2	2.3	76.1	433
OTHER	14	11.7	60.6	79.8	28.8	47.4	50.8	1.8	75.2	421
ALL VARIETIES	50	11.9	60.5	79.6	28.4	45.0	53.1	1.9	74.2	426
MINIMUM	-	8.8	54.5	71.8	23.0	12.9	28.0	0.5	51.8	321
MAXIMUM	-	14.1	63.0	82.8	33.5	71.2	85.0	7.1	87.8	547

WHEAT QUALITY PROFILE - 2001 CROP

INDIVIDUAL SAMPLES

Area & Variety	No. of Samples	Protein 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			SKCS Hardness	Falling Number 2/
						Over 7W	Over 9W	Thru 9W		
		Pct.	Lb/Bu	Kg/Hl	Grams	- - - Percent - - -				Seconds
SOUTH CENTRAL										
2137	9	11.0	61.1	80.3	28.7	44.2	54.0	1.8	73.5	432
2174	3	10.9	62.8	82.5	29.4	59.8	39.2	1.0	76.9	386
JAGGER	45	11.9	61.4	80.7	30.3	57.4	41.3	1.2	73.1	418
2137/JAGGER	5	11.7	61.7	81.2	29.0	50.1	49.0	0.9	75.7	440
OTHER	10	11.9	61.9	81.4	30.3	55.3	43.5	1.2	69.3	424
ALL VARIETIES	72	11.7	61.5	80.9	30.0	55.1	43.7	1.2	73.0	421
MINIMUM	-	8.8	56.7	74.6	24.2	15.6	13.5	0.0	48.4	304
MAXIMUM	-	14.8	64.3	84.5	36.7	85.6	82.4	5.2	88.7	546
NORTHEAST										
OTHER	6	12.2	60.7	79.9	31.1	60.8	38.6	0.6	72.5	392
ALL VARIETIES	6	12.2	60.7	79.9	31.1	60.8	38.6	0.6	72.5	392
MINIMUM	-	10.7	58.3	76.7	27.4	35.8	26.5	0.0	62.0	338
MAXIMUM	-	13.6	62.9	82.6	35.2	73.4	63.4	1.3	84.3	423
EAST CENTRAL										
OTHER	5	11.1	60.7	79.9	30.7	58.6	40.3	1.1	67.6	382
ALL VARIETIES	5	11.1	60.7	79.9	30.7	58.6	40.3	1.1	67.6	382
MINIMUM	-	8.8	58.2	76.6	26.8	34.5	9.3	0.3	46.2	333
MAXIMUM	-	13.1	63.7	83.7	35.4	90.4	63.5	2.0	78.2	449
SOUTHEAST										
2137	5	10.2	61.4	80.7	32.2	68.3	30.5	1.2	68.4	408
JAGGER	6	10.1	61.1	80.3	31.3	67.1	32.0	0.9	67.1	390
OTHER	4	10.6	61.5	80.9	31.5	73.6	25.6	0.8	62.8	402
ALL VARIETIES	15	10.2	61.3	80.6	31.7	69.2	29.8	1.0	66.4	399
MINIMUM	-	9.2	58.4	76.9	24.7	29.8	14.2	0.2	49.2	310
MAXIMUM	-	11.9	64.6	84.8	35.9	85.5	67.3	3.0	90.9	470
STATE										
2137	68	11.7	60.7	79.8	28.6	44.9	53.0	2.0	76.4	419
2163	6	11.2	60.8	80.0	30.3	59.1	39.7	1.2	70.1	443
2174	6	10.9	63.0	82.8	30.5	68.7	30.5	0.8	74.8	383
ARAPAHOE	3	13.1	58.7	77.3	26.0	18.6	79.2	2.2	78.3	444
7853	3	12.0	59.9	78.8	27.0	41.4	56.2	2.4	70.9	432
DOMINATOR	13	11.9	61.2	80.5	27.6	34.3	63.8	1.9	67.3	431
HONDO	3	13.6	57.7	76.0	24.1	18.2	77.0	4.8	81.1	382
IKE	16	12.6	60.6	79.7	28.9	44.6	53.3	2.1	72.9	394
JAGGER	98	12.1	61.2	80.4	29.9	54.4	44.1	1.5	74.7	415
KARL	4	11.7	61.6	81.0	32.5	60.7	38.5	0.8	63.6	430
KARL 92	12	12.2	61.0	80.3	30.3	51.4	47.4	1.2	67.8	423
LARNED	4	12.4	59.7	78.6	28.1	39.5	58.7	1.8	68.9	437
OGALLALA	4	12.3	64.0	84.1	29.7	54.3	43.9	1.8	75.8	401
TAM 107	11	12.6	60.3	79.3	30.4	53.6	44.8	1.5	75.7	444
2137/JAGGER	11	12.3	60.5	79.5	28.5	48.5	49.7	1.8	73.8	428
OTHER	43	12.2	60.5	79.6	28.5	47.3	50.4	2.3	74.2	419
ALL VARIETIES	305	12.1	60.8	80.0	29.1	49.0	49.2	1.8	74.1	418
MINIMUM	-	8.5	53.1	70.0	20.0	1.5	3.3	0.0	46.2	278
MAXIMUM	-	15.6	64.8	85.1	37.6	96.5	93.7	11.3	90.9	547

1/ May not add to 100 percent due to rounding. 2/ 14% moisture basis.

WHEAT QUALITY PROFILE - 2001 CROP

COMPOSITED SAMPLES

Area and Variety	Prot. 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			Wheat Data		Milling Data		Flour Data
					Over 7W	Over 9W	Thru 9W	Gluten		Extr-action	Ash 14% M.B.	Flour Protein 2/
								Wet	Dry			
	Pct.	Lb/Bu	Kg/Hl	Grams	- - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - -							
NORTHWEST												
2137	12.0	60.0	78.9	25.2	32.1	65.3	2.7	29.1	10.2	69.6	0.46	11.7
ARAPAHOE	13.8	59.0	77.6	25.2	21.6	76.3	2.1	34.3	8.7	69.2	0.48	9.7
JAGGER	12.9	60.4	79.4	27.4	34.0	64.0	2.0	28.8	8.6	69.0	0.48	9.5
BLEND 3/	12.7	59.5	78.2	26.0	34.8	62.3	2.9	28.6	8.5	70.3	0.44	8.8
ALL VARIETIES	12.8	59.7	78.6	26.0	30.6	67.0	2.4	30.2	9.0	69.5	0.47	9.9
WEST CENTRAL												
2137	11.9	60.4	79.5	26.3	34.8	63.6	1.6	24.8	9.0	68.6	0.52	10.2
IKE	13.3	60.9	80.1	28.9	48.0	50.9	1.2	33.1	8.8	71.0	0.45	9.9
JAGGER	13.3	61.3	80.6	28.2	49.3	49.7	1.1	29.5	9.5	70.4	0.42	10.4
TAM 107	12.2	60.8	80.0	29.9	54.6	43.9	1.5	29.0	10.0	68.0	0.48	11.2
BLEND 3/	13.0	59.9	78.8	27.3	40.6	57.0	2.4	31.1	9.1	69.1	0.45	10.3
ALL VARIETIES	12.7	60.7	79.8	28.1	45.5	53.0	1.6	29.5	9.3	69.4	0.46	10.4
SOUTHWEST												
2137	12.4	61.1	80.3	28.9	54.9	42.8	2.3	29.1	9.9	69.5	0.46	10.8
IKE	12.3	59.5	78.3	26.6	39.4	57.8	2.9	26.2	9.9	70.3	0.43	10.0
JAGGER	13.5	62.7	82.4	31.2	60.5	38.8	0.8	32.5	9.3	68.6	0.45	10.0
TAM 107	13.2	60.9	80.1	29.6	60.6	38.3	1.2	29.2	12.7	67.4	0.48	12.1
BLEND 3/	12.7	61.8	81.2	29.3	52.6	45.9	1.5	31.3	12.3	69.4	0.48	10.9
ALL VARIETIES	12.8	61.2	80.5	29.1	53.6	44.7	1.7	29.6	10.8	69.0	0.46	10.8
NORTH CENTRAL												
2137	11.2	61.1	80.3	27.5	46.8	51.4	1.8	23.9	12.1	71.1	0.48	11.7
DOMINATOR	12.0	62.8	82.6	29.3	47.8	51.0	1.3	26.1	10.1	69.2	0.46	10.2
JAGGER	12.6	61.2	80.5	28.6	48.7	49.5	1.9	33.2	9.0	68.4	0.50	10.4
KARL 92	13.0	61.5	80.9	28.8	44.4	54.4	1.2	29.6	10.3	68.1	0.51	10.7
2137/Jagger	12.1	59.6	78.5	28.1	48.3	50.0	1.8	25.9	11.5	69.0	0.47	11.4
BLEND 3/	12.1	60.7	79.8	28.3	49.1	49.3	1.7	26.5	8.5	70.0	0.45	9.1
ALL VARIETIES	12.1	61.1	80.4	28.4	47.5	50.9	1.6	27.5	10.3	69.3	0.48	10.6
CENTRAL												
2137	11.4	60.8	80.0	27.5	42.1	56.8	1.2	25.6	9.9	67.7	0.46	10.7
2163	11.4	61.3	80.6	29.0	54.4	44.5	1.2	25.0	11.0	70.1	0.45	10.6
DOMINATOR	12.2	59.9	78.9	25.8	26.7	71.7	1.6	27.9	8.8	69.0	0.44	9.6
JAGGER	11.9	60.4	79.4	27.7	49.9	48.5	1.7	24.9	10.4	69.1	0.40	10.8
BLEND 3/	12.0	60.7	79.9	28.2	50.6	48.0	1.4	28.9	10.0	69.1	0.51	10.6
ALL VARIETIES	11.8	60.6	79.8	27.6	44.7	53.9	1.4	26.5	10.0	69.0	0.45	10.5

WHEAT QUALITY PROFILE - 2001 CROP

COMPOSITED SAMPLES

Area and Variety	Prot. 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			Wheat Data		Milling Data		Flour Data
					Over 7W	Over 9W	Thru 9W	Gluten		Extr-action	Ash 14% M.B.	Flour Protein 2/
								Wet	Dry			
	Pct.	Lb/Bu	Kg/Hl	Grams	- - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - -							
SOUTH CENTRAL												
2137	11.6	61.3	80.6	28.3	46.1	52.8	1.2	26.6	12.0	70.2	0.46	11.3
2174	11.7	63.0	82.8	29.1	63.1	36.3	0.7	23.5	12.8	69.2	0.44	11.6
JAGGER	11.5	61.8	81.3	29.9	59.3	39.9	0.8	26.2	11.3	68.2	0.48	10.6
2137/JAGGER	11.2	62.3	81.9	29.9	55.6	43.8	0.7	23.1	9.8	69.6	0.47	11.2
BLEND 3/	12.0	61.7	81.2	28.9	55.2	44.0	0.8	27.0	10.3	69.5	0.55	10.5
ALL VARIETIES	11.6	62.0	81.6	29.2	55.8	43.3	0.8	25.3	11.2	69.3	0.48	11.0
NORTHEAST												
BLEND 3/	12.2	61.1	80.3	31.5	63.3	36.0	0.8	28.2	8.2	70.1	0.49	8.8
ALL VARIETIES	12.2	61.1	80.3	31.5	63.3	36.0	0.8	28.2	8.2	70.1	0.49	8.8
EAST CENTRAL												
BLEND 3/	11.2	61.2	80.5	30.7	60.9	38.3	0.9	23.7	11.2	70.2	0.44	11.3
ALL VARIETIES	11.2	61.2	80.5	30.7	60.9	38.3	0.9	23.7	11.2	70.2	0.44	11.3
SOUTHEAST												
2137	10.3	61.8	81.3	32.5	67.4	31.5	1.2	23.0	10.7	70.8	0.48	11.7
JAGGER	10.4	61.5	80.9	32.1	68.4	31.0	0.7	23.2	8.8	70.4	0.43	10.1
BLEND 3/	10.7	62.1	81.6	32.6	74.6	24.4	1.1	24.5	10.2	70.8	0.42	10.7
ALL VARIETIES	10.5	61.8	81.3	32.4	70.1	28.9	1.0	23.6	9.9	70.7	0.44	10.8
STATE												
2137	11.5	60.9	80.2	28.0	46.3	52.0	1.7	26.0	10.6	69.6	0.48	11.2
2163	11.4	61.3	80.6	29.0	54.4	44.5	1.2	25.0	11.0	70.1	0.45	10.6
2174	11.7	63.0	82.8	29.1	63.1	36.3	0.7	23.5	12.8	69.2	0.44	11.6
ARAPAHOE	13.8	59.0	77.6	25.2	21.6	76.3	2.1	34.3	8.7	69.2	0.48	9.7
DOMINATOR	12.1	61.4	80.7	27.6	37.2	61.4	1.4	27.0	9.5	69.1	0.45	9.9
IKE	12.8	60.2	79.2	27.8	43.7	54.3	2.1	29.6	9.4	70.7	0.44	9.9
JAGGER	12.3	61.3	80.6	29.3	52.8	45.9	1.3	28.3	9.6	69.2	0.45	10.3
KARL 92	13.0	61.5	80.9	28.8	44.4	54.4	1.2	29.6	10.3	68.1	0.51	10.7
TAM 107	12.7	60.9	80.0	29.7	57.6	41.1	1.3	29.1	11.4	67.7	0.48	11.7
2137/JAGGER	11.7	61.0	80.2	29.0	51.9	46.9	1.2	24.5	10.7	69.3	0.47	11.3
BLEND 3/	12.1	61.0	80.2	29.2	53.5	45.0	1.5	27.8	9.8	69.8	0.47	10.1
ALL VARIETIES	12.1	61.0	80.3	28.7	49.7	48.8	1.5	27.5	10.1	69.4	0.47	10.6

1/ May not add to 100 percent due to rounding. 2/ 14% moisture basis. 3/ All other varieties with insufficient grain available for separate tests.

WHEAT QUALITY PROFILE - 2001 CROP
PHYSICAL DOUGH TEST BY COMPOSITED SAMPLES

Area and Variety	Physical Dough Test					
	Mixograph		Farinograph			
	Absorption	Peak Time	Absorption	Peak Time	Stability	Softening
	Percent	Minutes	Percent	- - - - - - - - Minutes - - - - - - - -		Degree
NORTHWEST						
2137	61.5	2.8	61.7	4.0	9	50
ARAPAHOE	58.5	2.5	55.6	5.0	7	90
JAGGER	58.5	2.8	56.1	2.0	9	60
BLEND 1/	58.5	3.4	54.9	1.5	2	100
ALL VARIETIES	59.3	2.9	57.1	3.1	7	75
WEST CENTRAL						
2137	58.5	3.0	55.5	5.5	8	85
IKE	59.5	3.6	56.7	2.5	13	40
JAGGER	58.5	3.2	57.4	7.5	12	70
TAM 107	59.5	3.2	57.5	7.0	14	60
BLEND 1/	59.5	3.0	57.4	2.5	11	50
ALL VARIETIES	59.1	3.2	56.9	5.0	11	61
SOUTHWEST						
2137	59.5	2.2	57.4	3.5	5	80
IKE	59.5	3.0	57.3	5.8	9	85
JAGGER	59.5	3.1	57.4	6.0	9	85
TAM 107	61.5	3.6	57.4	6.5	14	70
BLEND 1/	61.5	3.0	57.8	6.0	10	70
ALL VARIETIES	60.3	3.0	57.5	5.6	9	78
NORTH CENTRAL						
2137	61.5	2.6	59.8	6.0	9	70
DOMINATOR	59.5	3.8	57.7	8.0	14	65
JAGGER	59.5	3.2	58.9	7.0	11	80
KARL 92	59.5	3.0	55.0	6.0	10	60
2137/JAGGER	60.5	2.4	58.0	5.5	9	70
BLEND 1/	58.5	3.7	55.2	1.5	9	60
ALL VARIETIES	59.8	3.1	57.4	5.7	10	68
CENTRAL						
2137	61.5	3.0	58.4	6.0	8	80
2163	59.5	2.5	59.8	5.0	6	60
DOMINATOR	59.5	3.6	56.4	2.0	12	50
JAGGER	59.5	3.5	57.4	7.5	18	40
BLEND 1/	58.5	3.0	56.7	5.5	9	90
ALL VARIETIES	59.7	3.1	57.7	5.2	11	64
SOUTH CENTRAL						
2137	61.5	3.0	58.4	6.0	12	50
2174	61.5	2.7	58.6	6.0	15	50
JAGGER	59.5	3.6	57.5	7.0	13	65
2137/JAGGER	59.5	3.2	58.0	8.0	15	60
BLEND 1/	61.5	3.6	55.5	6.0	12	60
ALL VARIETIES	60.7	3.2	57.6	6.6	13	57
NORTHEAST						
BLEND 1/	56.5	4.0	54.9	1.5	2	80
ALL VARIETIES	56.5	4.0	54.9	1.5	2	80
EAST CENTRAL						
BLEND 1/	62.5	3.8	56.7	7.0	15	50
ALL VARIETIES	62.5	3.8	56.7	7.0	15	50
SOUTHEAST						
2137	62.5	2.6	59.2	5.5	6	80
JAGGER	59.5	3.5	56.4	8.0	17	50
BLEND 1/	61.5	3.6	56.7	6.0	15	50
ALL VARIETIES	61.2	3.2	57.4	6.5	13	60
STATE						
2137	60.9	2.7	58.6	5.2	8	71
2163	59.5	2.5	59.8	5.0	6	60
2174	61.5	2.7	58.6	6.0	15	50
ARAPAHOE	58.5	2.5	55.6	5.0	7	90
DOMINATOR	59.5	3.7	57.1	5.0	13	58
IKE	59.5	3.3	57.0	4.1	11	63
JAGGER	59.2	3.3	57.3	6.4	13	64
KARL 92	59.5	3.0	55.0	6.0	10	60
TAM 107	60.5	3.4	57.5	6.8	14	65
2137/JAGGER	60.0	2.8	58.0	6.8	12	65
BLEND 1/	59.8	3.5	56.2	4.2	9	68
ALL VARIETIES	59.9	3.2	57.3	5.3	10	66

1/ All other varieties with insufficient grain available for separate tests.

WHEAT QUALITY PROFILE, 2000-2001

RANGES FOR PROTEIN CONTENT - 12% M.B. (MOISTURE BASIS) 1/

Year	Less than 9.0	9.0-9.9	10.0-10.9	11.0-11.9	12.0-12.9	13.0 and Over	State Avg.
	- Percent of Samples -						
2000	0.6	9.6	24.0	21.8	18.3	25.6	12.0
2001	1.3	7.5	14.9	26.3	23.1	26.9	12.1

1/ May not add to 100 percent due to rounding.

RANGES FOR TEST WEIGHT - KILOGRAMS/HECTOLITER 1/

Year	Less than 70.0	70.0-71.9	72.0-73.9	74.0-75.9	76.0-77.9	78.0-79.9	80.0-81.9	82.0 & Over	State Avg.
	- Percent of Samples -								
2000	0.6	1.6	3.5	11.9	19.4	33.5	19.7	9.7	78.6
2001	0.0	1.3	1.0	4.5	13.6	23.1	33.8	22.7	80.0

1/ May not add to 100 percent due to rounding.

RANGES FOR FALLING NUMBER - SECONDS 1/

Year	Less than 180	180-299	300-399	400-419	420 and Over	State Avg.
	- Percent of Samples -					
2000	0.3	1.0	58.0	21.5	19.2	397
2001	0.0	0.6	26.9	23.7	48.7	418

1/ May not add to 100 percent due to rounding.

WHEAT QUALITY PROFILE, 1992-2001

INDIVIDUAL SAMPLES

Year	Number of Samples	Wheat Analysis							SKCS Hardness 2/
		Protein % 12% M.B.	Test Weight		1,000 Kernels	Wheat Size 1/			
					12% M.B.	Over 7W	Over 9W	Thru 9W	
			Lb./Bu.	Kg./Hl.	Grams	- - - - - Percent - - - - -			
1992	275	12.0	60.4	77.7	29.2	55.2	43.3	1.6	65.7
1993	273	11.3	60.6	78.0	29.0	50.3	48.3	1.5	68.6
1994	274	12.3	61.3	78.9	27.4	45.1	53.0	1.9	69.3
1995	271	12.4	58.7	75.6	25.3	38.0	58.7	3.3	57.0
1996	274	13.8	60.2	77.5	28.3	50.4	48.2	1.5	62.9
1997	301	11.9	60.4	79.5 3/	30.3	60.2	38.8	1.0	44.5
1998	307	11.4	61.1	80.4	29.1	54.9	43.7	1.4	67.8
1999	307	11.4	59.5	78.3	29.9	63.1	36.2	0.9	62.2
2000	312	12.0	59.7	78.6	28.0	46.1	51.3	2.6	72.8
2001	305	12.1	60.8	80.0	29.1	49.0	49.2	1.8	74.1

1/ May not add to 100 percent due to rounding. 2/ NIR hardness started in 1991. It changed to SKCS hardness in 1998. 3/ New conversion procedures for 1997 as noted on page 23.

WHEAT QUALITY PROFILE, 1992-2001

COMPOSITED SAMPLES

Year	Wet Gluten 14% M.B. 1/	Dry Gluten 14% M.B. 1/	Falling Number 2/	Physical Dough Test				
				Farinograph				
				Absorption	Peak Time	Stability	Valorimeter	Softening
	- - - - - Percent - - - - -		Seconds	Percent	- - - - - - - - - Minutes - - - - - - - - -			Degree
1992	29.1	10.8	NA	58.8	5.8	13	66	NA
1993	25.1	9.8	NA	54.9	5.6	16	63	NA
1994	28.7	10.8	NA	56.1	6.3	17	68	NA
1995	30.4	11.1	NA	56.6	5.7	13	64	NA
1996	32.4	12.6	NA	57.8	6.1	11	67	NA
1997	24.5	9.5	NA	55.2	4.2	13	62	NA
1998	25.3	10.6	NA	57.7	4.0	12	59	NA
1999	28.5	10.3	363	54.9	3.4	16	NA	45
2000	27.2	11.1	412	57.7	4.9	12	NA	30
2001	27.5	10.1	NA	57.3	5.3	10	NA	66

1/. Gluten is for flour in 1988-1996. Beginning in 1997, Gluten is for wheat. 2/ 14% moisture basis.

PUBLICATION REQUEST **WQ**

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1. Do you operate a farm, ranch, or feedlot in Kansas? . . . . . ☐ Yes ☐ No
   Major county of operation _____ Total acres in operation _____

2. Do you buy farm products directly from Kansas farmers or sell farm equipment or supplies at the retail level including custom farm work? . . . . . ☐ Yes ☐ No

3. Do you represent a USDA or Kansas State agency? . . . . . ☐ Yes ☐ No

If you checked no to all of the questions, you must pay an annual fee for certain reports. The annual subscription fees are listed with a description of each release below.

I WOULD LIKE TO RECEIVE KANSAS AGRICULTURAL STATISTICS SERVICE REPORTS CHECKED ( ) BELOW:

USDA/KASS REPORTS

$12.00 ( ) 901 WEEKLY CROP-WEATHER -- Issued each Monday, March through November. Provides crop and weather information for previous week.
$10.00 ( ) 910 CROPS -- Issued monthly the day of the National Crop Report. Provides a summary of released reports including Acreage, Crop Production, Grain Stocks, Farm Income, Land Values, Wheat Quality.
$10.00 ( ) 911 PRICES -- Issued first of each month. Provides selected State and U.S. mid-month average prices received and paid by farmers along with price indices. Average prices received by farmers for wheat and sorghum grain are shown by agricultural statistics district.
$10.00 ( ) 942 LIVESTOCK -- Issued monthly on the day of Cattle on Feed Report. Provides summary of released reports including Cattle Inventory, Calf Crop, Cattle on Feed, Slaughter, Eggs, Chickens, Turkeys, Milk and Dairy Products, and Sheep and Wool.
$ 5.00 ( ) 943 HOGS AND PIGS -- Issued March, June, September, and December. Includes inventory numbers, pig crops, and sows to farrow.

KANSAS DEPARTMENT OF AGRICULTURE/KASS REPORTS

FREE ( ) 941 BLUESTEM PASTURE -- Includes a summary of Pasture Rental Rates; April.
FREE ( ) 990 CUSTOM RATES--Includes information about rates paid by Kansas farmers for custom work; Jan.
FREE ( ) 991 KANSAS FARM FACTS--Includes State and county data for Kansas agriculture; August.
FREE ( ) 992 WHEAT QUALITY--Includes county data on protein, test weight and grades; September.
FREE ( ) 993 WHEAT VARIETIES--Includes information on varieties of wheat seeded in the State; February
FREE ( ) 995 AGRICULTURAL LAND VALUES--Includes information on land values in the State; July.
FREE ( ) 996 HAY DIRECTORY--Includes information for hay users and growers; August.

Check the reports you would like to receive and enter total amount due. $ _____ Total Amount.

If you checked yes to any of the questions, you qualify for free reports. Check the reports you would like to receive and send a copy of this order form to:

AGRICULTURAL STATISTICIAN
PO BOX 3534
TOPEKA, KS 66601-3534

IF YOU CHECKED NO TO THE ABOVE THREE QUESTIONS, YOU MUST PAY FOR USDA/KASS REPORTS. SEND CHECK OR MONEY ORDER PAYABLE TO USDA/NASS AND THIS FORM TO:

AGRICULTURAL STATISTICIAN
PO BOX 3534
TOPEKA, KANSAS 66601-3534

Firm or Farm Name:_____

Your Name:_____

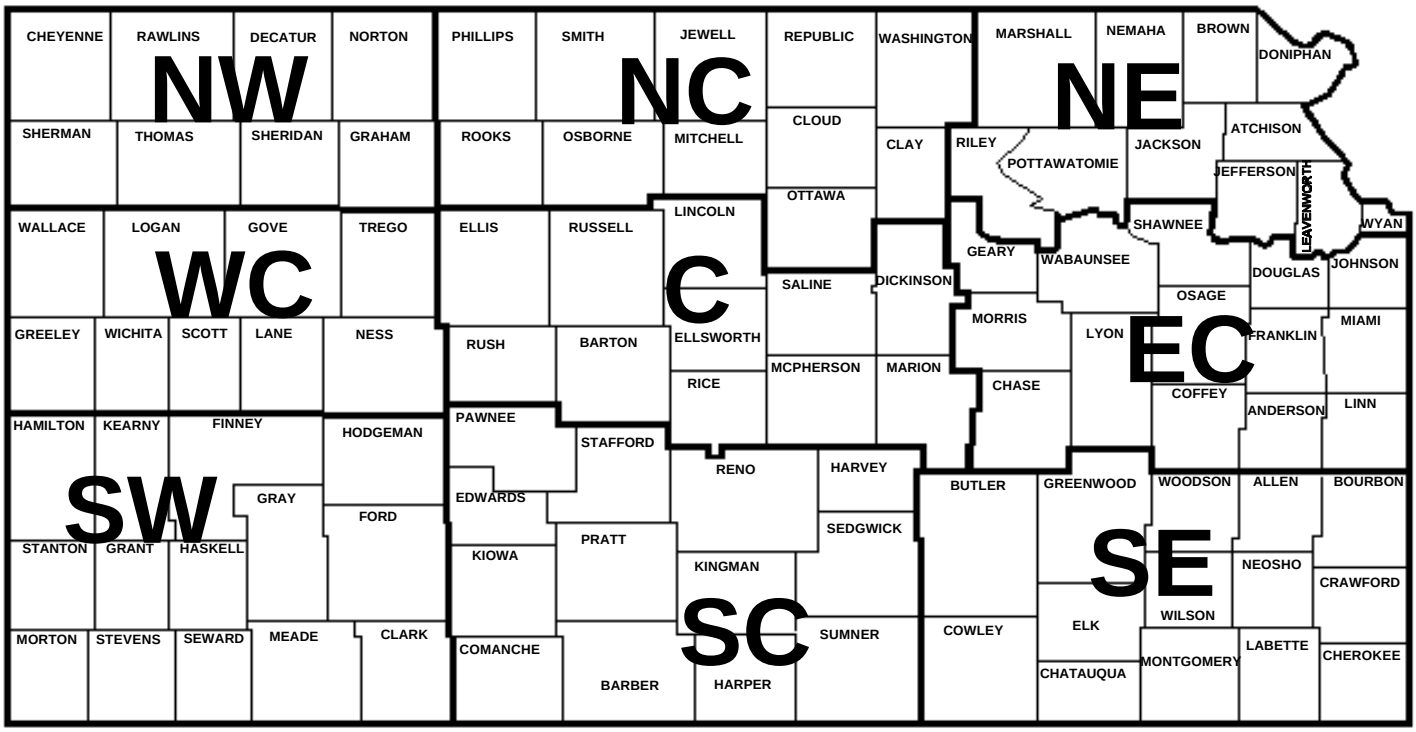
Address:_____

City:_____ State:_____

Telephone:_____ Zip:_____

Virtually all reports released by Kansas Agricultural Statistics Service are now also available on the Internet. The home page address for Kansas Agricultural Statistics Service on the Internet is:

http://www.nass.usda.gov/ks/



Kansas is divided into nine agricultural statistics districts for convenience in compiling and presenting statistical information on crops and livestock. These nine districts are outlined on the above map. The districts are designated as follows: Northwest (NW), West Central (WC), Southwest (SW), North Central (NC), Central (C), South Central (SC), Northeast (NE), East Central (EC), and Southeast (SE).