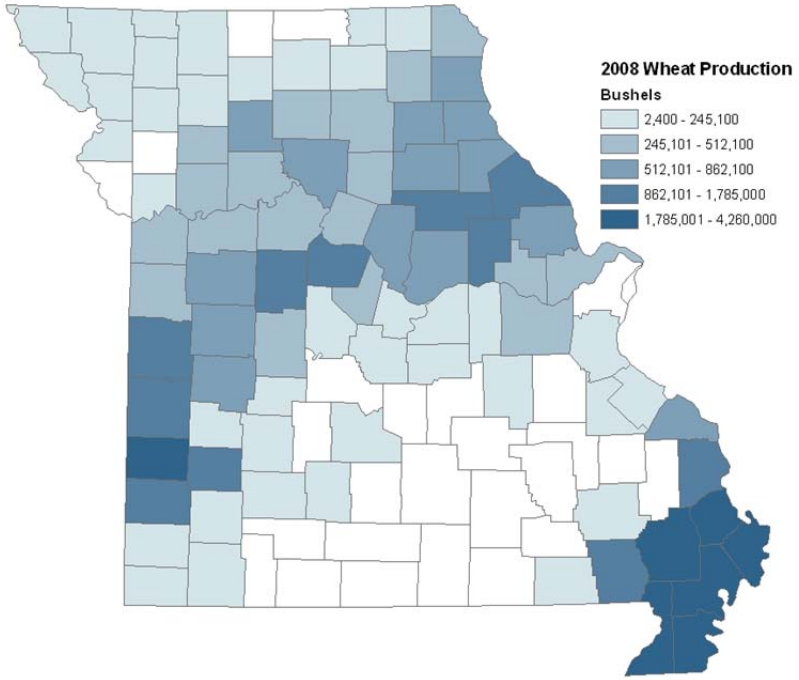
Missouri Wheat Facts

$175,714,800: Average value of Missouri wheat production between 2006 and 2010[a]

Top Wheat Production Regions, 2010[a] 2008[a]

Rank	United States	Rank	Missouri Counties
1	North Dakota	1	Mississippi
2	Kansas	2	Stoddard
3	Montana	3	New Madrid
4	Washington	4	Scott
5	Texas	5	Pemiscot
6	South Dakota	6	Barton
7	Oklahoma	7	Dunklin
8	Colorado	8	Audrain
9	Idaho	9	Butler
10	Minnesota	10	Bates



1 bushel of wheat produces

- 42 Pounds of flour
- 73 Loaves of bread

Missouri	Harvested Acres[a]	Yield[a]	Average Annual Price[a]
Record High	4,577,000 acres in 1919	61 bushels per acre in 2003	$5.35/bushel in 2008
Record Low	280,000 acres in 2010	8 bushels per acre in 1885	$1.18/bushel in 1969
5-Year Average	792,000 acres	47.4 bushels per acre	$4.70/bushel

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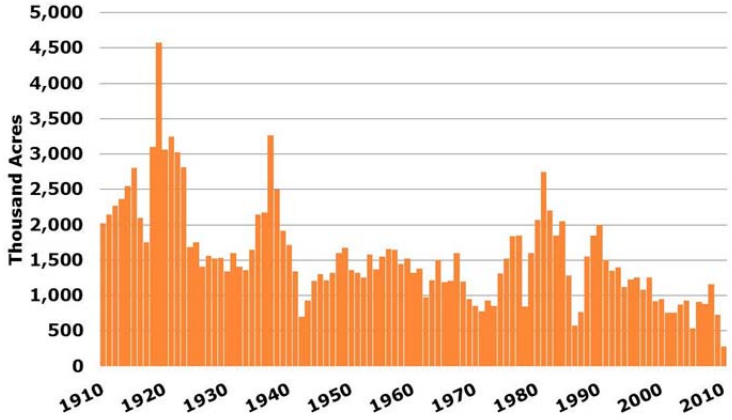
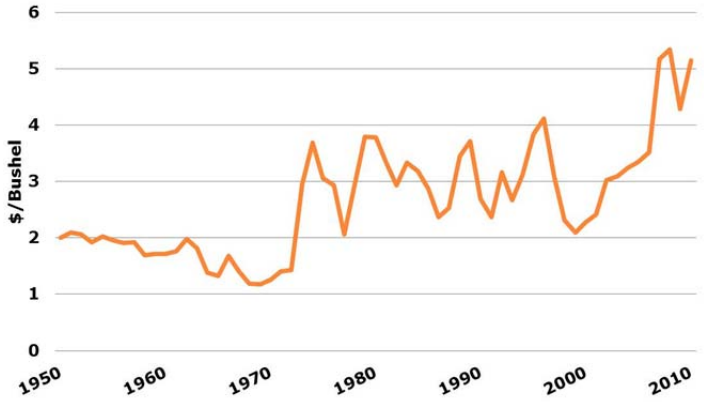
Wheat Production in Missouri

Wheat acreage is sporadic. During the last 20 years, acreage has been decreasing. Yields per acre, on the other hand, have been steadily increasing about 0.4 bushels per year. Wheat sales are nearly a billion dollars a year.

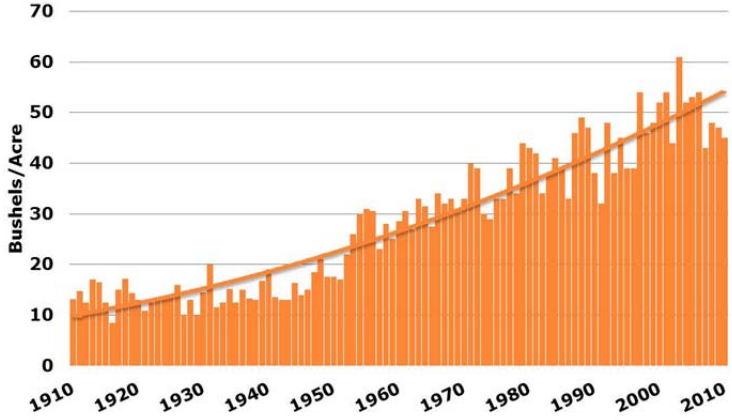
Wheat Acres Harvested[a]



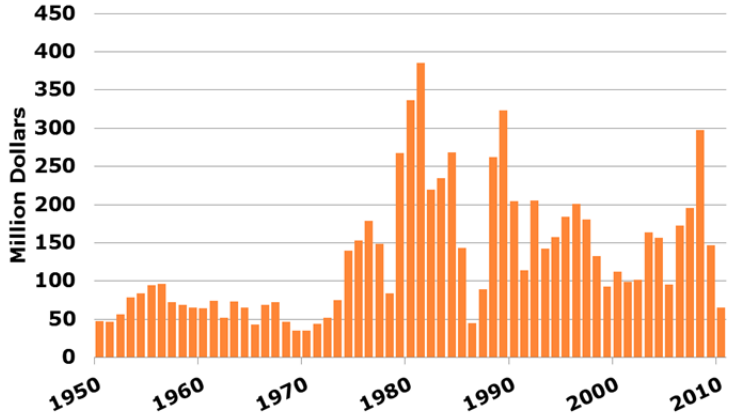
Wheat Prices ($/bushel)[a]



Wheat Yields (bushels/acre)[a]



Value of Production[a]



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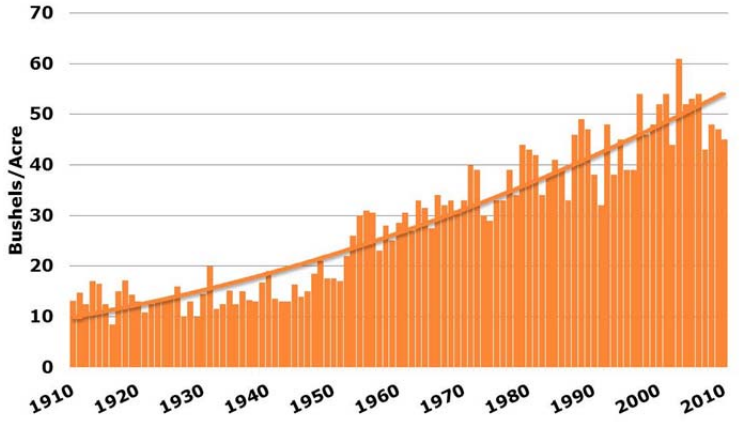
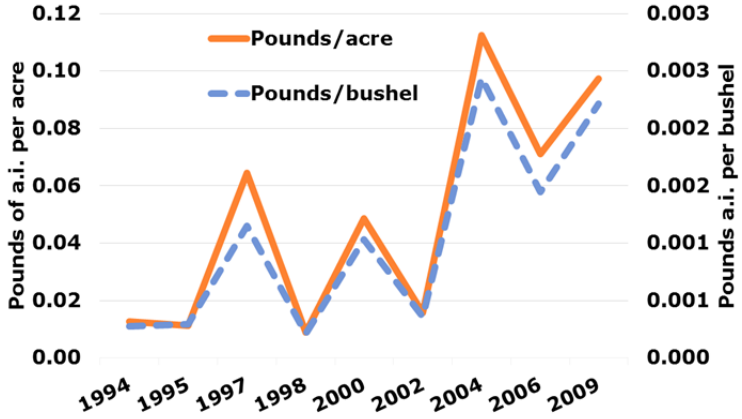
Wheat Production Efficiency

Missouri wheat yields have increased over 0.4 bushels per year. This production efficiency has not resulted in fertilizer and pesticide efficiency. Fertilizer use on a per acre and per bushel basis has remained constant; pesticide use has increased.

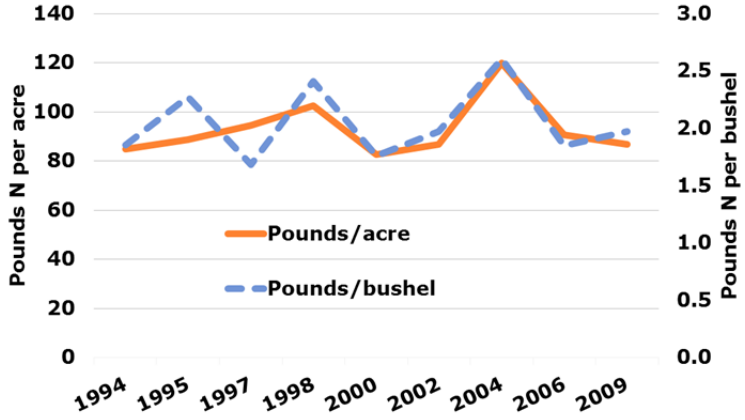
Wheat Yields (bushels/acre)[a]



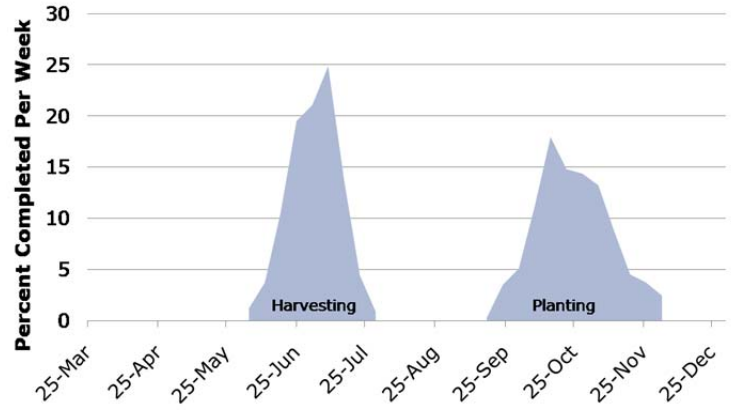
Pesticide Usage[c]



Fertilizer Usage[c]



Fieldwork[d]



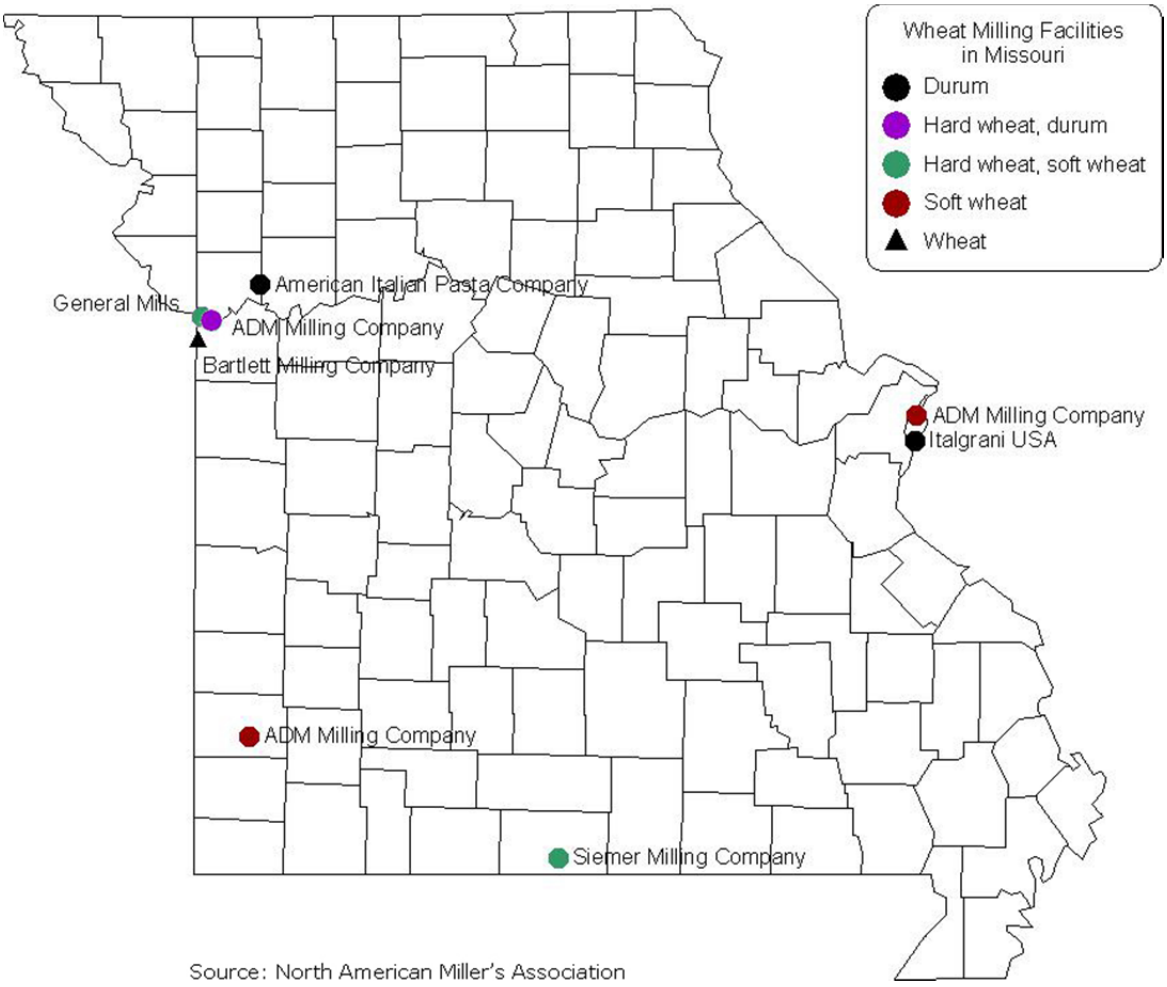
2011 Wheat Crop Budget[e]

	Wheat
Yield/ ac.	60 bu.
Market Price/Bu.	$5.50
Estimated Income/ Acre	
Crop Income (yield x price/bushel)	$330.00
Net Payments (fixed)	14.15
Estimated Total Income / Acre	**$344.15**
Estimated Operating Costs/ Acre	
Seed	$36.00
Fertilizer and soil amendments	77.90
Crop protection chemicals	8.20
Crop supplies, storage, marketing	1.00
Crop insurance and consulting	12.00
Custom hire and rental	9.50
Machinery fuel, drying, and irrigation energy	9.57
Machinery and repairs and maintenance	10.88
Operator and hired labor	10.47
Operating interest @ 8.50% x ½ year	5.27
Total Operating Costs/ Acre	**$180.79**
Estimated Ownership Costs/ Acre	
Farm business overhead	$3.75
Machinery overhead	13.40
Machinery depreciation	16.37
Real estate charge	133.50
Total Ownership Costs/ Acre	**$167.02**
Estimated Total Costs / Acre	**$347.81**
Income over Operating Cost/ Acre	**$163.36**
Income over Total Costs/ Acre	**-$3.66**
Operating costs/ bushel	$3.01
Ownership costs/bushel	$2.79
Total costs/bushel	$5.80

U.S. Grades and Grade Requirements for Wheat[f]

Grade	Minimum test weight	Maximum limits of:		
		Damaged kernels		Broken kernels and foreign material
		Heat damaged kernels	Total	
U.S. No. 1	60.0	0.2%	2.0%	3.4%
U.S. No. 2	58.0	0.2%	4.0%	5.7%
U.S. No. 3	56.0	0.5%	7.0%	9.3%

Map of Wheat Mills in Missouri



Wheat Milling in Missouri[g]

Company	Location	Wheat milled
ADM Milling Company	**St. Louis**	**Soft wheat**
ADM Milling Company	**Carthage**	**Soft wheat**
ADM Milling Company	**Kansas City**	**Hard wheat, durum**
American Italian Pasta Company	**Excelsior Springs**	**Durum**
Bartlett Milling Company	**Kansas City**	**Wheat**
General Mills	**Kansas City**	**Hard wheat, soft wheat**
Italgrani USA	**St. Louis**	**Durum**
Siemer Milling Company	**Gainesville**	**Hard wheat, soft wheat**

Missouri County Yields (2000-2008)[a]

County	Average Yield (bu/ac)	Maximum Yield (bu/ac)	Maximum Year	Minimum Yield (bu/ac)	Minimum Year
Adair	53	64	2006	40	2007
Andrew	51	64	2003	37	2008
Atchison	49	54	2005	44	2008
Audrain	57	67	2003	49	2008
Barry	42	57	2003	27	2007
Barton	44	65	2003	28	2007
Bates	49	65	2003	38	2007
Benton	49	63	2003	41	2005
Bollinger	45	62	2005	28	2007
Boone	52	65	2003	47	2008
Buchanan	46	57	2006	26	2008
Butler	48	54	2005	41	2002
Caldwell	48	61	2006	39	2008
Callaway	50	63	2003	43	2008
Cape Girardeau	48	62	2001	34	2007
Carroll	49	65	2003	41	2008
Cass	49	66	2003	38	2008
Cedar	43	56	2001	30	2006
Chariton	54	65	2003	46	2008
Christian	55	60	2003	50	2005
Clark	58	70	2003	49	2008
Clay	48	60	2003	27	2007
Clinton	49	68	2006	37	2007
Cole	46	50	2006	38	2002

County	Average Yield (bu/ac)	Maximum Yield (bu/ac)	Maximum Year	Minimum Yield (bu/ac)	Minimum Year
Cooper	53	68	2003	45	2002
Crawford	28	28	2008	28	2008
Dade	45	63	2003	31	2007
Dallas	43	43	2003	43	2003
Daviess	49	66	2006	30	2008
De Kalb	50	69	2003	32	2008
Dunklin	53	62	2003	41	2007
Franklin	43	51	2003	38	2007
Gasconade	41	46	2004	35	2007
Gentry	51	67	2006	37	2008
Greene	43	55	2003	30	2002
Grundy	51	68	2003	35	2008
Harrison	45	58	2003	29	2008
Henry	45	58	2003	38	2002
Hickory	34	45	2003	19	2006
Holt	50	59	2003	37	2000
Howard	48	64	2003	44	2008
Howell	46	46	2004	46	2004
Jackson	53	68	2003	42	2002
Jasper	41	56	2003	26	2007
Jefferson	43	49	2003	38	2007
Johnson	51	65	2003	43	2008
Knox	58	65	2003	49	2002
Laclede	42	46	2005	39	2008
Lafayette	53	64	2003	45	2002

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County	Average Yield (bu/ac)	Maximum Yield (bu/ac)	Maximum Year	Minimum Yield (bu/ac)	Minimum Year
Lawrence	43	57	2003	34	2007
Lewis	61	73	2003	52	2001
Lincoln	51	62	2003	44	2005
Linn	50	64	2006	39	2001
Livingston	52	65	2003	43	2008
Macon	55	68	2006	45	2008
Maries	42	57	2008	28	2007
Marion	60	71	2003	52	2008
McDonald	24	24	2008	24	2008
Mercer	53	62	2003	46	2004
Miller	39	50	2004	26	2008
Mississippi	60	73	2006	46	2007
Moniteau	49	58	2003	37	2002
Monroe	57	71	2003	43	2008
Montgomery	51	57	2006	47	2002
Morgan	48	57	2003	41	2000
New Madrid	56	66	2006	47	2007
Newton	43	56	2003	28	2007
Nodaway	47	58	2003	34	2008
Osage	41	50	2001	37	2002
Pemiscot	52	61	2006	43	2002
Perry	47	55	2005	39	2002
Pettis	49	66	2003	42	2002
Phelps	40	40	2003	40	2003
Pike	55	65	2003	48	2002
Platte	47	62	2003	27	2007

County	Average Yield (bu/ac)	Maximum Yield (bu/ac)	Maximum Year	Minimum Yield (bu/ac)	Minimum Year
Polk	42	51	2003	35	2006
Putnam	54	65	2006	44	2004
Ralls	56	70	2003	50	2002
Randolph	52	68	2003	45	2002
Ray	49	65	2003	42	2007
Ripley	44	50	2000	37	2008
Saline	50	60	2003	45	2002
Schuyler	50	66	2003	33	2002
Scotland	58	74	2006	50	2008
Scott	52	60	2001	35	2007
Shelby	58	66	2006	51	2008
St. Charles	49	60	2003	40	2002
St. Clair	44	56	2001	36	2007
St. Francois	45	50	2003	37	2002
St. Louis	47	55	2003	43	2004
Ste. Genevieve	46	54	2001	35	2002
Stoddard	56	65	2006	43	2007
Sullivan	52	66	2003	41	2008
Taney	50	50	2005	50	2005
Vernon	46	63	2003	28	2007
Warren	48	58	2003	40	2002
Wayne	40	48	2003	29	2008
Webster	42	60	2006	19	2007
Worth	40	50	2005	26	2008

Missouri Wheat Types

Missouri grows two types of wheat. The Western 1/3 of the state of Missouri is known for growing Hard Red Winter Wheat. The Eastern 2/3 of the state of Missouri is known for growing Soft Red Winter Wheat.

Hard Red Winter

Hard, brownish, mellow high protein wheat used for bread, hard baked goods and as an adjunct in other flours to increase protein in pastry flour for pie crusts. Some brands of unbleached all-purpose flours are commonly made from hard red winter wheat alone. Other states that grow hard red winter wheat are Arizona, Washington, California, Montana, Wyoming, Idaho, Utah, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

It is primarily traded by the Kansas City Board of Trade. Contract months include July, September, December, March, and May and contract size is 5,000 bushels. Prices are in dollars, cents, and ¼ cents per bushel with daily maximum price fluctuation of 30 cents above or below the previous day's closing settlements.

Soft Red Winter

Soft, low protein wheat used for cakes, pie crusts, biscuits, and muffins. Cake flour, pastry flour, and some self-rising flours with baking powder and salt added for example, are made from soft red winter wheat. Soft Red Winter Wheat states include Texas, Arkansas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Tennessee, Kentucky, Illinois, Indiana, Ohio, Michigan, Pennsylvania, Virginia, New Jersey, and Wisconsin.

It is primarily traded by the Chicago Board of Trade. Contract months include July, September, December, March, and May and contract size is 5,000 bushels. Prices are in dollars, cents, and ¼ cents per bushel with daily maximum price fluctuation of 30 cents above or below the previous day's closing settlements.

Other types of wheat not commonly grown in Missouri include

Durum — Very hard, translucent, light colored grain used to make semolina flour for pasta. Durum wheat is primarily grown in North Dakota, Minnesota, Montana, and South Dakota, as well as Arizona and California. While not commonly grown in Missouri, it is milled in Missouri.

Hard Red Spring — Hard, brownish, high protein wheat used for bread and hard baked goods. Bread Flour and high gluten flours are commonly made from hard red spring wheat. It is primarily traded at the Minneapolis Grain Exchange. It is grown in areas where the growing season is shorter, such as Minnesota, North Dakota, South Dakota, Montana, and Idaho.

Hard White — Hard, light colored, opaque, chalky, medium protein wheat planted in dry, temperate areas. Used for bread and brewing. Hard White Wheat has been grown in Kansas, California, and Montana. In recent years, much more research has been invested in hard white wheat so look for an increase in the production of this class of wheat.

Soft White — Soft, light colored, very low protein wheat grown in temperate moist areas. Used for pie crusts and pastry. Pastry flour, for example, is sometimes made from soft white winter wheat. Soft White Wheat is mainly grown in the Pacific Northwest, in states like Washington, Oregon, Idaho, and Utah, although soft white wheat has also been grown in New York and Michigan.

Information Sources:

[a]USDA NASS http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats_1.0/index.asp (used total production in bushels to determine rank)

[b]USDA ERS http://www.ers.usda.gov/Data/BiotechCrops/

[c]USDA Economics, Statistics, and Market Information System
http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1560

[d]USDA NASS
www.nass.usda.gov/Statistics_by_State/Missouri/Publications/Crop_Progress_and_Condition/index.asp

[e]University of Missouri Food and Agricultural Policy Institute Source
http://agebb.missouri.edu/mgt/budget/index.htm

[f]USDA GIPSA http://archive.gipsa.usda.gov/reference-library/standards/810wheat.pdf

[g]North American Millers' Association http://www.namamillers.org