



Crop Production

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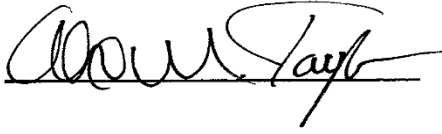
Winter Wheat Production Up 2 Percent from 2023 Orange Production Down 2 Percent from April Forecast

Winter wheat production is forecast at 1.28 billion bushels, up 2 percent from 2023. As of May 1, the United States yield is forecast at 50.7 bushels per acre, up 0.1 bushel from last year's average yield of 50.6 bushels per acre. Area expected to be harvested for grain or seed totals 25.2 million acres, up 2 percent from last year.

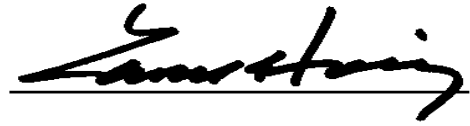
Hard Red Winter production, at 705 million bushels, is up 17 percent from a year ago. Soft Red Winter, at 344 million bushels, is down 23 percent from 2023. White Winter, at 229 million bushels, is up 16 percent from last year. Of the White Winter production, 17.3 million bushels are Hard White and 211 million bushels are Soft White.

The United States all orange forecast for the 2023-2024 season is 2.69 million tons, down 2 percent from the previous forecast but up 5 percent from the 2022-2023 final utilization. The Florida all orange forecast, at 17.8 million boxes (801,000 tons), is down 5 percent from the previous forecast but up 13 percent from last season's final utilization. In Florida, early, midseason, and Navel varieties are forecast at 6.80 million boxes (306,000 tons), unchanged from the previous forecast but up 11 percent from last season's final utilization. The Florida Valencia orange forecast, at 11.0 million boxes (495,000 tons), is down 8 percent from the previous forecast but up 14 percent from last season's final utilization.

This report was approved on May 10, 2024.



Secretary of Agriculture
Designate
Alexis M. Taylor



Agricultural Statistics Board
Chairperson
Lance Honig

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Winter Wheat Area Harvested, Yield, and Production – States and United States: 2023 and Forecasted May 1, 2024

State	Area harvested		Yield per acre		Production	
	2023	2024	2023	2024	2023	2024
	(1,000 acres)	(1,000 acres)	(bushels)	(bushels)	(1,000 bushels)	(1,000 bushels)
Arkansas	165	75	57.0	50.0	9,405	3,750
California	80	80	80.0	80.0	6,400	6,400
Colorado	1,820	1,850	41.0	44.0	74,620	81,400
Idaho	630	690	89.0	90.0	56,070	62,100
Illinois	780	680	87.0	83.0	67,860	56,440
Indiana	335	240	92.0	84.0	30,820	20,160
Kansas	5,750	7,050	35.0	38.0	201,250	267,900
Kentucky	460	370	88.0	83.0	40,480	30,710
Maryland	195	175	85.0	82.0	16,575	14,350
Michigan	560	380	83.0	85.0	46,480	32,300
Missouri	600	500	70.0	67.0	42,000	33,500
Montana	1,680	1,850	51.0	47.0	85,680	86,950
Nebraska	880	850	42.0	47.0	36,960	39,950
North Carolina	400	320	70.0	64.0	28,000	20,480
Ohio	590	450	90.0	84.0	53,100	37,800
Oklahoma	2,450	2,600	28.0	37.0	68,600	96,200
Oregon	725	715	56.0	68.0	40,600	48,620
Pennsylvania	230	200	76.0	77.0	17,480	15,400
South Dakota	700	780	47.0	52.0	32,900	40,560
Tennessee	390	310	80.0	80.0	31,200	24,800
Texas	2,100	2,100	37.0	34.0	77,700	71,400
Virginia	135	100	78.0	71.0	10,530	7,100
Washington	1,750	1,800	54.0	65.0	94,500	117,000
Wisconsin	230	200	76.0	78.0	17,480	15,600
Other States ¹	1,048	833	58.3	56.2	61,058	46,825
United States	24,683	25,198	50.6	50.7	1,247,748	1,277,695

¹ For 2023, other States include Alabama, Delaware, Georgia, Mississippi, New Jersey, New Mexico, New York, North Dakota, South Carolina, Utah, and Wyoming. For 2024, other States include Alabama, Delaware, Georgia, Mississippi, New Mexico, New York, North Dakota, South Carolina, Utah, and Wyoming. Individual State level estimates will be published in the *Small Grains 2024 Summary* report.

Durum Wheat Area Harvested, Yield, and Production – States and United States: 2023 and Forecasted May 1, 2024

[Area harvested for the United States and remaining States will be published in the *Acreage* report released June 2024. Yield and production will be published in the *Crop Production* report released July 2024. Blank data cells indicate estimation period has not yet begun]

State	Area harvested		Yield per acre		Production	
	2023	2024	2023	2024	2023	2024
	(1,000 acres)	(1,000 acres)	(bushels)	(bushels)	(1,000 bushels)	(1,000 bushels)
Arizona	37	59	103.0	103.0	3,811	6,077
California	17	16	114.0	103.0	1,938	1,648
Idaho ¹	10	(NA)	65.0	(NA)	650	(NA)
Montana	675		31.0		20,925	
North Dakota	865		37.0		32,005	
United States	1,604		37.0		59,329	

(NA) Not available.

¹ Estimates discontinued in 2024.

Wheat Production by Class – United States: 2023 and Forecasted May 1, 2024

[Wheat class estimates are based on the latest available data including both surveys and administrative data. The previous end-of-year season class percentages are used throughout the forecast season for States that do not have survey or administrative data available. Blank data cells indicate estimation period has not yet begun]

Crop	2023	2024
	(1,000 bushels)	(1,000 bushels)
Winter		
Hard red	601,017	705,371
Soft red	449,017	343,640
Hard white	14,142	17,311
Soft white	183,572	211,373
Spring		
Hard red	468,068	
Hard white	8,745	
Soft white	28,087	
Durum	59,329	
Total	1,811,977	

Hay Stocks on Farms – States and United States: December 1 and May 1, 2022-2024

State	December 1		May 1	
	2022 (1,000 tons)	2023 (1,000 tons)	2023 (1,000 tons)	2024 (1,000 tons)
Alabama	1,300	1,100	160	135
Arizona	260	460	20	50
Arkansas	1,440	1,550	200	260
California	1,155	1,550	325	225
Colorado	1,350	1,650	170	800
Connecticut	41	42	7	7
Delaware	11	13	2	2
Florida	450	470	30	80
Georgia	950	930	120	230
Idaho	2,500	2,550	460	740
Illinois	980	860	240	225
Indiana	770	850	220	190
Iowa	2,480	2,140	380	455
Kansas	4,100	3,600	720	1,250
Kentucky	3,100	3,000	630	610
Louisiana	610	560	90	85
Maine	142	157	29	28
Maryland	300	295	49	67
Massachusetts	39	40	11	9
Michigan	980	870	230	290
Minnesota	2,190	1,330	560	390
Mississippi	800	710	110	110
Missouri	4,650	4,700	820	810
Montana	3,250	3,850	450	1,590
Nebraska	3,000	3,850	530	950
Nevada	560	770	105	160
New Hampshire	41	40	6	7
New Jersey	77	84	15	12
New Mexico	200	250	30	110
New York	1,400	845	490	320
North Carolina	990	930	125	180
North Dakota	3,300	4,250	860	1,400
Ohio	1,350	1,120	350	300
Oklahoma	3,000	5,900	400	1,800
Oregon	1,410	1,200	230	400
Pennsylvania	1,630	1,540	380	305
Rhode Island	5	5	1	1
South Carolina	380	460	70	100
South Dakota	4,350	5,400	1,250	1,900
Tennessee	2,650	2,750	400	410
Texas	5,000	5,500	940	1,500
Utah	1,250	1,360	480	620
Vermont	175	150	33	37
Virginia	1,700	1,750	320	410
Washington	1,200	1,500	360	360
West Virginia	780	780	175	185
Wisconsin	2,165	1,520	560	390
Wyoming	1,300	1,490	190	515
United States	71,761	76,721	14,333	21,010

Utilized Production of Citrus Fruits by Crop – States and United States: 2022-2023 and Forecasted May 1, 2024

[The crop year begins with the bloom of the first year shown and ends with the completion of harvest the following year]

Crop and State	Utilized production boxes ¹		Utilized production ton equivalent	
	2022-2023	2023-2024	2022-2023	2023-2024
	(1,000 boxes)	(1,000 boxes)	(1,000 tons)	(1,000 tons)
Oranges				
California, all ²	44,700	46,000	1,788	1,840
Early, mid, and Navel ³	36,100	38,000	1,444	1,520
Valencia	8,600	8,000	344	320
Florida, all	15,820	17,800	712	801
Early, mid, and Navel ³	6,150	6,800	277	306
Valencia	9,670	11,000	435	495
Texas, all ²	1,130	1,100	48	47
Early, mid, and Navel ³	570	700	24	30
Valencia	560	400	24	17
United States, all	61,650	64,900	2,548	2,688
Early, mid, and Navel ³	42,820	45,500	1,745	1,856
Valencia	18,830	19,400	803	832
Grapefruit				
California ²	4,300	4,100	172	164
Florida, all	1,810	1,800	77	77
Texas ²	2,250	2,600	90	104
United States	8,360	8,500	339	345
Tangerines and mandarins ⁴				
California ²	23,550	22,000	942	880
Florida	480	500	23	24
United States	24,030	22,500	965	904
Lemons ²				
Arizona	1,400	1,050	56	42
California	26,000	22,000	1,040	880
United States	27,400	23,050	1,096	922

¹ Net pounds per box: oranges in California-80, Florida-90, Texas-85; grapefruit in California-80, Florida-85, Texas-80; tangerines and mandarins in California-80, Florida-95; lemons-80.

² Estimates for current year carried forward from an earlier forecast.

³ Navel and miscellaneous varieties in California. Early (including Navel) and midseason varieties in Florida and Texas.

⁴ Includes tangelos and tangors.

Peach Production by Type – California: 2023 and Forecasted May 1, 2024

Type	Total production	
	2023	2024
	(tons)	(tons)
Freestone	259,000	280,000
Clingstone	221,000	230,000
Total	480,000	510,000

Almonds Production – State and United States: 2023 and Forecasted May 1, 2024

State	Total production (shelled basis)	
	2023	2024
	(1,000 pounds)	(1,000 pounds)
California	2,470,000	3,000,000
United States	2,470,000	3,000,000

Cotton Area Planted, Harvested, and Yield by Type – States and United States: 2022 and 2023

Type and State	Area planted		Area harvested		Yield per acre	
	2022 (1,000 acres)	2023 (1,000 acres)	2022 (1,000 acres)	2023 (1,000 acres)	2022 (pounds)	2023 (pounds)
Upland						
Alabama	435.0	380.0	430.0	374.0	930	937
Arizona	87.0	76.0	86.0	75.0	1,563	1,331
Arkansas	640.0	510.0	625.0	505.0	1,189	1,295
California	19.0	13.0	18.5	12.8	1,946	2,025
Florida	106.0	89.0	103.0	87.0	769	612
Georgia	1,290.0	1,110.0	1,270.0	1,100.0	1,002	949
Kansas	163.0	112.0	136.0	94.0	586	761
Louisiana	195.0	120.0	190.0	115.0	904	872
Mississippi	530.0	400.0	525.0	395.0	1,084	1,083
Missouri	360.0	335.0	340.0	330.0	1,240	1,361
New Mexico	66.0	32.0	29.0	17.0	993	649
North Carolina	470.0	380.0	460.0	370.0	1,049	933
Oklahoma	660.0	420.0	220.0	180.0	663	560
South Carolina	270.0	210.0	266.0	207.0	911	937
Tennessee	335.0	265.0	325.0	260.0	1,053	1,250
Texas	7,850.0	5,550.0	2,000.0	2,100.0	734	618
Virginia	91.0	81.0	90.0	80.0	1,131	1,122
United States	13,567.0	10,083.0	7,113.5	6,301.8	945	895
American Pima						
Arizona	15.0	16.0	14.4	16.0	933	900
California	115.0	85.0	114.0	82.0	1,558	1,346
New Mexico	19.0	17.0	18.7	16.8	719	800
Texas	33.0	29.0	29.0	23.0	728	584
United States	182.0	147.0	176.1	137.8	1,281	1,101
All						
Alabama	435.0	380.0	430.0	374.0	930	937
Arizona	102.0	92.0	100.4	91.0	1,473	1,255
Arkansas	640.0	510.0	625.0	505.0	1,189	1,295
California	134.0	98.0	132.5	94.8	1,612	1,438
Florida	106.0	89.0	103.0	87.0	769	612
Georgia	1,290.0	1,110.0	1,270.0	1,100.0	1,002	949
Kansas	163.0	112.0	136.0	94.0	586	761
Louisiana	195.0	120.0	190.0	115.0	904	872
Mississippi	530.0	400.0	525.0	395.0	1,084	1,083
Missouri	360.0	335.0	340.0	330.0	1,240	1,361
New Mexico	85.0	49.0	47.7	33.8	886	724
North Carolina	470.0	380.0	460.0	370.0	1,049	933
Oklahoma	660.0	420.0	220.0	180.0	663	560
South Carolina	270.0	210.0	266.0	207.0	911	937
Tennessee	335.0	265.0	325.0	260.0	1,053	1,250
Texas	7,883.0	5,579.0	2,029.0	2,123.0	734	618
Virginia	91.0	81.0	90.0	80.0	1,131	1,122
United States	13,749.0	10,230.0	7,289.6	6,439.6	953	899

Cotton Production and Bales Ginned by Type – States and United States: 2022 and 2023

Type and State	Production in 480-pound net weight bales ¹		Lint seed ratio		Bales ginned in 480-pound net weight bales ²	
	2022	2023	2022	2023	2022	2023
	(1,000 bales)	(1,000 bales)	(ratio)	(ratio)	(bales)	(bales)
Upland						
Alabama	833.0	730.0	(NA)	(NA)	808,450	715,400
Arizona	280.0	208.0	(NA)	(NA)	265,800	189,250
Arkansas	1,548.0	1,362.0	(NA)	(NA)	1,678,000	1,529,250
California	75.0	54.0	(NA)	(NA)	93,300	72,200
Florida	165.0	111.0	(NA)	(NA)	134,250	95,350
Georgia	2,650.0	2,175.0	(NA)	(NA)	2,694,150	2,203,850
Kansas	166.0	149.0	(NA)	(NA)	121,850	126,550
Louisiana	358.0	209.0	(NA)	(NA)	365,000	212,250
Mississippi	1,186.0	891.0	(NA)	(NA)	1,160,200	850,150
Missouri	878.0	936.0	(NA)	(NA)	774,850	811,250
New Mexico	60.0	23.0	(NA)	(NA)	28,300	16,450
North Carolina	1,005.0	719.0	(NA)	(NA)	1,065,650	773,650
Oklahoma	304.0	210.0	(NA)	(NA)	171,900	142,950
South Carolina	505.0	404.0	(NA)	(NA)	441,650	339,250
Tennessee	713.0	677.0	(NA)	(NA)	706,500	668,100
Texas	3,060.0	2,705.0	(NA)	(NA)	3,253,850	2,792,650
Virginia	212.0	187.0	(NA)	(NA)	208,700	190,500
United States	13,998.0	11,750.0	(NA)	(NA)	13,972,400	11,729,050
American Pima						
Arizona	28.0	30.0	(NA)	(NA)	27,500	27,050
California	370.0	230.0	(NA)	(NA)	369,800	229,650
New Mexico	28.0	28.0	(NA)	(NA)	31,750	29,150
Texas	44.0	28.0	(NA)	(NA)	39,350	29,100
United States	470.0	316.0	(NA)	(NA)	468,400	314,950
All						
Alabama	833.0	730.0	(NA)	(NA)	808,450	715,400
Arizona	308.0	238.0	(NA)	(NA)	293,300	216,300
Arkansas	1,548.0	1,362.0	0.432	0.443	1,678,000	1,529,250
California	445.0	284.0	(NA)	(NA)	463,100	301,850
Florida	165.0	111.0	(NA)	(NA)	134,250	95,350
Georgia	2,650.0	2,175.0	0.456	0.455	2,694,150	2,203,850
Kansas	166.0	149.0	(NA)	(NA)	121,850	126,550
Louisiana	358.0	209.0	(NA)	(NA)	365,000	212,250
Mississippi	1,186.0	891.0	0.432	0.436	1,160,200	850,150
Missouri	878.0	936.0	(NA)	(NA)	774,850	811,250
New Mexico	88.0	51.0	(NA)	(NA)	60,050	45,600
North Carolina	1,005.0	719.0	(NA)	(NA)	1,065,650	773,650
Oklahoma	304.0	210.0	(NA)	(NA)	171,900	142,950
South Carolina	505.0	404.0	(NA)	(NA)	441,650	339,250
Tennessee	713.0	677.0	(NA)	(NA)	706,500	668,100
Texas	3,104.0	2,733.0	0.442	0.445	3,293,200	2,821,750
Virginia	212.0	187.0	(NA)	(NA)	208,700	190,500
United States	14,468.0	12,066.0	(NA)	(NA)	14,440,800	12,044,000

(NA) Not available.

¹ Production ginned and to be ginned.

² Equivalent 480-pound net weight bales ginned, not adjusted for cross-state movement.

Cottonseed Production and Farm Disposition – States and United States: 2022 and 2023

State	Production		Farm disposition				Seed for planting ²	
			Sales to oil mills		Other ¹		2022	2023
	2022	2023	2022	2023	2022	2023	2022	2023
	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)
Alabama	236.0	206.0	19.0	25.0	217.0	181.0	2.3	2.5
Arizona	121.0	85.0	-	-	121.0	85.0	0.8	0.8
Arkansas	489.0	411.0	356.0	293.0	133.0	118.0	3.0	3.5
California	153.0	100.0	47.0	27.0	106.0	73.0	0.8	1.2
Florida	48.0	32.0	34.0	21.0	14.0	11.0	0.5	0.5
Georgia	757.0	624.0	349.0	243.0	408.0	381.0	5.5	5.1
Kansas	50.0	46.0	-	-	50.0	46.0	0.6	0.6
Louisiana	109.0	67.0	57.0	34.0	52.0	33.0	0.8	0.9
Mississippi	374.0	277.0	215.0	135.0	159.0	142.0	2.3	3.1
Missouri	317.0	322.0	136.0	133.0	181.0	189.0	2.0	2.1
New Mexico	23.0	17.0	-	-	23.0	17.0	0.5	0.3
North Carolina	295.0	206.0	10.0	7.0	285.0	199.0	2.3	2.5
Oklahoma	93.0	61.0	44.0	50.0	49.0	11.0	2.9	2.8
South Carolina	141.0	114.0	38.0	20.0	103.0	94.0	1.3	1.3
Tennessee	208.0	207.0	161.0	160.0	47.0	47.0	2.2	1.9
Texas	940.0	815.0	446.0	462.0	494.0	353.0	39.1	30.7
Virginia	61.0	54.0	11.0	11.0	50.0	43.0	0.5	0.5
United States	4,415.0	3,644.0	1,923.0	1,621.0	2,492.0	2,023.0	67.4	60.3

- Represents zero.

¹ Includes planting seed, feed, exports, inter-farm sales, shrinkage, losses, and other uses.

² Included in "other" farm disposition. Seed for planting is produced in crop year shown, but used in the following year.

Cotton Objective Yield Data

The National Agricultural Statistics Service conducted objective yield surveys in 4 cotton-producing States during 2023. Randomly selected plots in cotton fields are visited monthly from September through harvest to obtain specific counts and measurements. Data in this table are actual field counts from this survey.

Cotton Harvest Loss per Acre – Selected States: 2019-2023

State	2019	2020	2021	2022	2023
	(pounds)	(pounds)	(pounds)	(pounds)	(pounds)
Arkansas	73	53	43	80	45
Georgia	269	236	158	218	143
Mississippi	104	97	85	91	77
Texas	43	58	61	78	54
4-State	90	100	76	120	79

Cotton Cumulative Boll Counts – Selected States: 2019-2023

[Includes small bolls (less than one inch in diameter), large unopened bolls (at least one inch in diameter), open bolls, partially opened bolls, and burrs per 40 feet of row. November, December, and Final exclude small bolls]

State and month	2019 (number)	2020 (number)	2021 (number)	2022 (number)	2023 (number)
Arkansas					
September	900	994	990	811	795
October	896	849	838	799	877
November	925	820	809	799	888
December	900	820	807	799	888
Final	900	820	807	799	888
Georgia					
September	598	606	597	605	581
October	783	747	658	648	660
November	790	761	669	705	706
December	799	784	694	721	721
Final	803	785	694	721	721
Mississippi					
September	944	900	957	804	828
October	895	867	807	814	863
November	904	877	848	830	849
December	901	875	849	828	849
Final	901	875	851	828	849
Texas					
September	458	576	491	583	416
October	438	581	512	615	422
November	456	595	538	629	462
December	459	608	539	640	487
Final	461	608	539	643	488
4-State					
September	551	645	567	641	513
October	562	661	573	668	543
November	579	671	595	692	578
December	580	683	599	701	597
Final	593	693	597	708	635

Crop Area Planted and Harvested, Yield, and Production in Domestic Units – United States: 2023 and 2024

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2024 crop year. Blank data cells indicate estimation period has not yet begun]

Crop	Area planted		Area harvested	
	2023	2024	2023	2024
	(1,000 acres)	(1,000 acres)	(1,000 acres)	(1,000 acres)
Grains and hay				
Barley	3,101	2,566	2,555	
Corn for grain ¹	94,641	90,036	86,513	
Corn for silage	(NA)		6,471	
Hay, all	(NA)	(NA)	52,821	51,562
Alfalfa	(NA)		15,634	
All other	(NA)		37,187	
Oats	2,555	2,318	831	
Proso millet	619		572	
Rice	2,894	2,932	2,854	
Rye	2,293		322	
Sorghum for grain ¹	7,195	6,395	6,115	
Sorghum for silage	(NA)		384	
Wheat, all	49,575	47,498	37,272	
Winter	36,699	34,135	24,683	25,198
Durum	1,676	2,028	1,604	
Other spring	11,200	11,335	10,985	
Oilseeds				
Canola	2,344.5	2,366.5	2,319.2	
Cottonseed	(X)		(X)	
Flaxseed	178	105	160	
Mustard seed	245.0		238.1	
Peanuts	1,645.0	1,651.0	1,574.0	
Rapeseed	13.2		10.1	
Safflower	129.5		126.0	
Soybeans for beans	83,600	86,510	82,356	
Sunflower	1,315.0	957.5	1,267.5	
Cotton, tobacco, and sugar crops				
Cotton, all	10,230.0	10,673.0	6,439.6	
Upland	10,083.0	10,470.0	6,301.8	
American Pima	147.0	203.0	137.8	
Sugarbeets	1,137.4	1,129.0	1,127.3	
Sugarcane	(NA)		929.6	
Tobacco	(NA)	(NA)	187.6	165.3
Dry beans, peas, and lentils				
Chickpeas	372.4	429.0	359.2	
Dry edible beans	1,180.0	1,316.0	1,156.9	
Dry edible peas	966.0	974.0	941.0	
Lentils	546.0	762.0	523.0	
Potatoes and miscellaneous				
Hops	(NA)		54.3	
Maple syrup	(NA)		(NA)	
Mushrooms	(NA)		(NA)	
Peppermint oil	(NA)		31.3	
Potatoes	965.0		960.2	
Spearmint oil	(NA)		12.2	

See footnote(s) at end of table.

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**Crop Area Planted and Harvested, Yield, and Production in Domestic Units – United States:
2023 and 2024 (continued)**

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2024 crop year. Blank data cells indicate estimation period has not yet begun]

Crop	Yield per acre		Production	
	2023	2024	2023 (1,000)	2024 (1,000)
Grains and hay				
Barley bushels	72.4		185,036	
Corn for grain bushels	177.3		15,341,595	
Corn for silage tons	20.1		129,994	
Hay, all tons	2.25		118,769	
Alfalfa tons	3.19		49,916	
All other tons	1.85		68,853	
Oats bushels	68.6		57,045	
Proso millet bushels	34.2		19,572	
Rice ² cwt	7,649		218,291	
Rye bushels	32.2		10,375	
Sorghum for grain bushels	52.0		317,745	
Sorghum for silage tons	13.0		4,981	
Wheat, all bushels	48.6		1,811,977	
Winter bushels	50.6	50.7	1,247,748	1,277,695
Durum bushels	37.0		59,329	
Other spring bushels	46.0		504,900	
Oilseeds				
Canola pounds	1,793		4,157,420	
Cottonseed tons	(X)		3,644.0	
Flaxseed bushels	18.5		2,961	
Mustard seed pounds	627		149,305	
Peanuts pounds	3,742		5,890,020	
Rapeseed pounds	2,003		20,230	
Safflower pounds	1,036		130,570	
Soybeans for beans bushels	50.6		4,164,677	
Sunflower pounds	1,786		2,263,520	
Cotton, tobacco, and sugar crops				
Cotton, all ² bales	899		12,066.0	
Upland ² bales	895		11,750.0	
American Pima ² bales	1,101		316.0	
Sugarbeets tons	31.2		35,226	
Sugarcane tons	36.3		33,766	
Tobacco pounds	2,305		432,452	
Dry beans, peas, and lentils				
Chickpeas ² cwt	1,315		4,722	
Dry edible beans ² cwt	2,067		23,910	
Dry edible peas ² cwt	1,922		18,086	
Lentils ² cwt	1,098		5,742	
Potatoes and miscellaneous				
Hops pounds	1,915		104,042.5	
Maple syrup gallons	(NA)		4,179	
Mushrooms pounds	(NA)		666,647	
Peppermint oil pounds	90		2,811	
Potatoes cwt	459		440,750	
Spearmint oil pounds	126		1,541	

(NA) Not available.

(X) Not applicable.

¹ Area planted for all purposes.

² Yield in pounds.

Crop Area Planted and Harvested, Yield, and Production in Metric Units – United States: 2023 and 2024

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2024 crop year. Blank data cells indicate estimation period has not yet begun]

Crop	Area planted		Area harvested	
	2023	2024	2023	2024
	(hectares)	(hectares)	(hectares)	(hectares)
Grains and hay				
Barley	1,254,940	1,038,430	1,033,980	
Corn for grain ¹	38,300,270	36,436,670	35,010,950	
Corn for silage	(NA)		2,618,750	
Hay, all ²	(NA)	(NA)	21,376,130	20,866,630
Alfalfa	(NA)		6,326,920	
All other	(NA)		15,049,210	
Oats	1,033,980	938,070	336,300	
Proso millet	250,500		231,480	
Rice	1,171,170	1,186,550	1,154,990	
Rye	927,950		130,310	
Sorghum for grain ¹	2,911,740	2,587,990	2,474,680	
Sorghum for silage	(NA)		155,400	
Wheat, all ²	20,062,510	19,221,970	15,083,610	10,197,380
Winter	14,851,720	13,814,090	9,988,960	
Durum	678,260	820,710	649,120	
Other spring	4,532,530	4,587,160	4,445,520	
Oilseeds				
Canola	948,800	957,700	938,560	
Cottonseed	(X)		(X)	
Flaxseed	72,030	42,490	64,750	
Mustard seed	99,150		96,360	
Peanuts	665,720	668,140	636,980	
Rapeseed	5,340		4,090	
Safflower	52,410		50,990	
Soybeans for beans	33,832,080	35,009,730	33,328,650	
Sunflower	532,170	387,490	512,940	
Cotton, tobacco, and sugar crops				
Cotton, all ²	4,139,980	4,319,260	2,606,040	
Upland	4,080,490	4,237,100	2,550,280	
American Pima	59,490	82,150	55,770	
Sugarbeets	460,290	456,900	456,210	
Sugarcane	(NA)		376,200	
Tobacco	(NA)	(NA)	75,930	66,900
Dry beans, peas, and lentils				
Chickpeas	150,710	173,610	145,360	
Dry edible beans	477,530	532,570	468,190	
Dry edible peas	390,930	394,170	380,810	
Lentils	220,960	308,370	211,650	
Potatoes and miscellaneous				
Hops	(NA)		21,980	
Maple syrup	(NA)		(NA)	
Mushrooms	(NA)		(NA)	
Peppermint oil	(NA)		12,670	
Potatoes	390,530		388,580	
Spearmint oil	(NA)		4,940	

See footnote(s) at end of table.

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**Crop Area Planted and Harvested, Yield, and Production in Metric Units – United States:
2023 and 2024 (continued)**

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2024 crop year. Blank data cells indicate estimation period has not yet begun]

Crop	Yield per hectare		Production	
	2023	2024	2023	2024
	(metric tons)	(metric tons)	(metric tons)	(metric tons)
Grains and hay				
Barley	3.90		4,028,680	
Corn for grain	11.13		389,694,460	
Corn for silage	45.03		117,928,570	
Hay, all ²	5.04		107,745,420	
Alfalfa	7.16		45,283,030	
All other	4.15		62,462,390	
Oats	2.46		828,010	
Proso millet	1.92		443,890	
Rice	8.57		9,901,510	
Rye	2.02		263,540	
Sorghum for grain	3.26		8,071,090	
Sorghum for silage	29.08		4,518,690	
Wheat, all ²	3.27		49,313,930	
Winter	3.40	3.41	33,958,140	34,773,160
Durum	2.49		1,614,670	
Other spring	3.09		13,741,130	
Oilseeds				
Canola	2.01		1,885,770	
Cottonseed	(X)		3,305,780	
Flaxseed	1.16		75,210	
Mustard seed	0.70		67,720	
Peanuts	4.19		2,671,670	
Rapeseed	2.25		9,180	
Safflower	1.16		59,230	
Soybeans for beans	3.40		113,343,930	
Sunflower	2.00		1,026,720	
Cotton, tobacco, and sugar crops				
Cotton, all ²	1.01		2,627,060	
Upland	1.00		2,558,260	
American Pima	1.23		68,800	
Sugarbeets	70.05		31,956,490	
Sugarcane	81.42		30,632,000	
Tobacco	2.58		196,160	
Dry beans, peas, and lentils				
Chickpeas	1.47		214,190	
Dry edible beans	2.32		1,084,540	
Dry edible peas	2.15		820,370	
Lentils	1.23		260,450	
Potatoes and miscellaneous				
Hops	2.15		47,190	
Maple syrup	(NA)		20,900	
Mushrooms	(NA)		302,390	
Peppermint oil	0.10		1,280	
Potatoes	51.45		19,992,090	
Spearmint oil	0.14		700	

(NA) Not available.

(X) Not applicable.

¹ Area planted for all purposes.

² Total may not add due to rounding.

Fruits and Nuts Production in Domestic Units – United States: 2023 and 2024

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2024 crop year, except citrus which is for the 2023-2024 season. Blank data cells indicate estimation period has not yet begun]

Crop	Production		
	2023	2024	
Citrus ¹			
Grapefruit	1,000 tons	339	345
Lemons	1,000 tons	1,096	922
Oranges	1,000 tons	2,548	2,688
Tangerines and mandarins	1,000 tons	965	904
Noncitrus			
Apples, commercial	million pounds	11,357.5	
Apricots	tons	35,820	
Avocados	tons	128,850	
Blueberries, Cultivated	1,000 pounds	648,000	
Blueberries, Wild (Maine)	1,000 pounds	87,600	
Cherries, Sweet	tons	354,300	
Cherries, Tart	million pounds	200.2	
Coffee (Hawaii)	1,000 pounds	23,310	
Cranberries	barrel	8,110,000	
Dates	tons	49,050	
Grapes	tons	5,909,500	
Kiwifruit (California)	tons	27,400	
Nectarines (California)	tons	145,500	
Olives (California)	tons	121,500	
Papayas (Hawaii)	1,000 pounds	10,250	
Peaches	tons	588,540	
Pears	tons	665,500	
Plums (California)	tons	89,600	
Prunes (California)	tons	287,400	
Raspberries	1,000 pounds	138,100	
Strawberries	1,000 cwt	27,560.0	
Nuts and miscellaneous			
Almonds, shelled (California)	1,000 pounds	2,470,000	3,000,000
Hazelnuts, in-shell (Oregon)	tons	94,200	
Macadamias (Hawaii)	1,000 pounds	36,800	
Pecans, in-shell	1,000 pounds	306,750	
Pistachios (California)	1,000 pounds	1,490,000	
Walnuts, in-shell (California)	tons	824,000	

¹ Production years are 2022-2023 and 2023-2024.

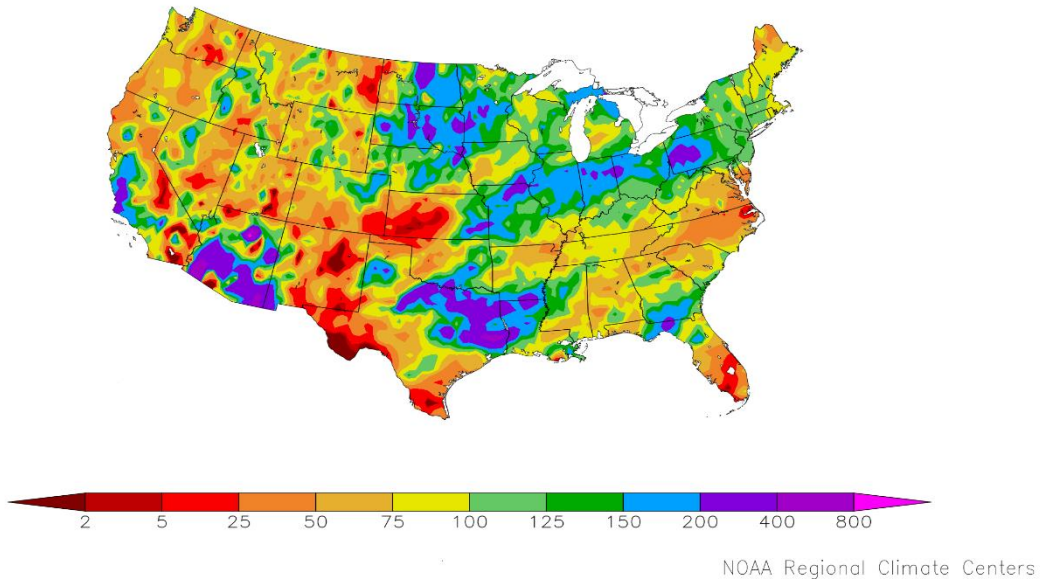
Fruits and Nuts Production in Metric Units – United States: 2023 and 2024

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2024 crop year, except citrus which is for the 2023-2024 season. Blank data cells indicate estimation period has not yet begun]

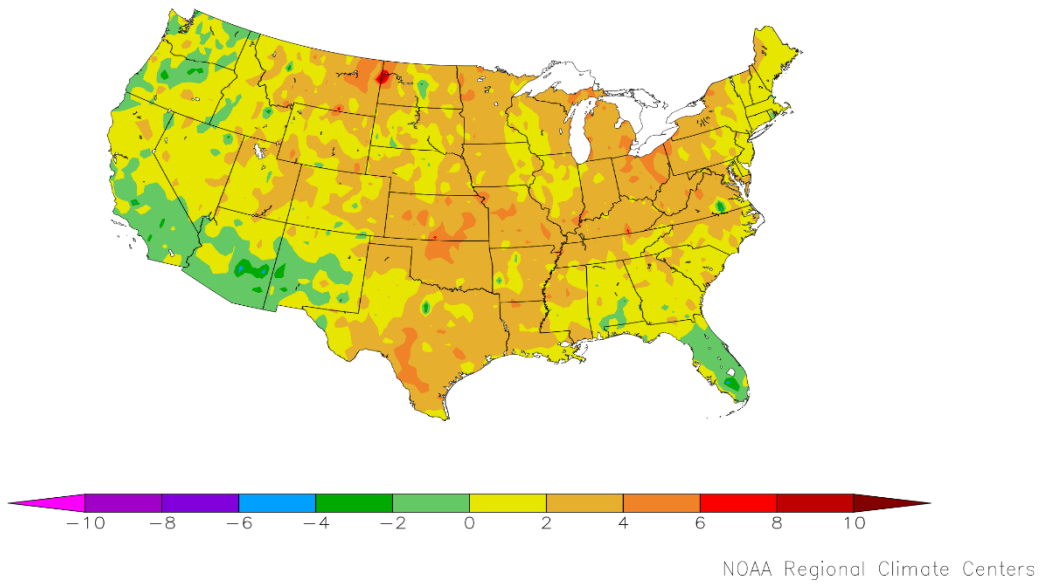
Crop	Production	
	2023	2024
	(metric tons)	(metric tons)
Citrus¹		
Grapefruit	307,540	312,980
Lemons	994,270	836,420
Oranges	2,311,510	2,438,510
Tangerines and mandarins	875,430	820,100
Noncitrus		
Apples, commercial	5,151,680	
Apricots	32,500	
Avocados	116,890	
Blueberries, Cultivated	293,930	
Blueberries, Wild (Maine)	39,730	
Cherries, Sweet	321,420	
Cherries, Tart	90,810	
Coffee (Hawaii)	10,570	
Cranberries	367,860	
Dates	44,500	
Grapes	5,361,010	
Kiwifruit (California)	24,860	
Nectarines (California)	132,000	
Olives (California)	110,220	
Papayas (Hawaii)	4,650	
Peaches	533,910	
Pears	603,730	
Plums (California)	81,280	
Prunes (California)	260,720	
Raspberries	62,640	
Strawberries	1,250,100	
Nuts and miscellaneous		
Almonds, shelled (California)	1,120,370	1,360,780
Hazelnuts, in-shell (Oregon)	85,460	
Macadamias (Hawaii)	16,690	
Pecans, in-shell	139,140	
Pistachios (California)	675,850	
Walnuts, in-shell (California)	747,520	

¹ Production years are 2022-2023 and 2023-2024.

Percent of Normal Precipitation (%)
4/1/2024 – 4/30/2024



Departure from Normal Temperature (F)
4/1/2024 – 4/30/2024



April Weather Summary

National drought coverage remained at a 4-year low during April, amid frequently stormy conditions. According to the *Drought Monitor*, drought coverage in the Lower 48 States dipped to 16.96 percent by April 30, down more than one percentage point from the beginning of the month. Drought last covered a smaller portion of the continental United States on May 5, 2020. However, April drought improvements in several key agricultural regions, including the western Corn Belt, were partially offset by worsening conditions across portions of the central and southern Plains. In Kansas, winter wheat rated good to excellent tumbled from 48 to 31 percent between March 31 and April 28, while wheat rated very poor to poor jumped from 15 to 31 percent. During the same 4-week period, national values for winter wheat rated good to excellent fell from 56 to 49 percent, while wheat rated very poor to poor rose from 11 to 16 percent.

Despite frequent April showers, national planting progress advanced at a faster-than-normal pace, with local exceptions. Some of the most impressive April planting progress occurred in areas such as the South, which experienced long stretches of dry weather, and the western Corn Belt, which has been contending with limited soil moisture amid ongoing recovery from long-term drought. By April 28, nearly three-quarters (72 percent) of the Nation's intended rice acreage had been planted, far ahead of the 5-year average of 46 percent. On the same date, corn and soybeans were 27 and 18 percent planted, respectively, versus 5-year averages of 22 and 10 percent. Across the North, planting progress was significantly ahead of schedule by April 28 for crops such as sugarbeets (66 percent planted, compared to the 5-year average of 32 percent) and spring wheat (34 percent planted, versus the average of 19 percent).

A combination of factors—including spring climatology, an active storm track associated with a fading El Niño, and a favorably positioned jet stream—resulted in several large outbreaks of severe thunderstorms. With outbreaks peaking on April 1-2, 9-11, 15-18, 25-28, and 30, there were 381 tornadoes across the country, according to preliminary reports. This marked the second-highest number of April tornadoes in the United States on record, behind only the historic total of 817 twisters in 2011. Although the tornadoes, along with high winds and large hail, resulted in localized damage in some of the Nation's agricultural regions, there were only six confirmed tornado-related fatalities—all on April 26, 27, and 30—compared with 363 deaths caused by tornadoes in April 2011.

In most areas east of the Rockies, near- or above-normal temperatures promoted pasture growth, winter wheat development, and emergence of spring-sown crops. Monthly temperatures averaged at least 4°F above normal in scattered locations from the Plains into the Great Lakes States and central Appalachians. Nearly one-third (30 percent) of the Nation's winter wheat had headed by April 28, well ahead of the 5-year average of 21 percent—and marking the crop's most rapid pace of spring development since 2017. Similarly, 48 percent of the Nation's rice had emerged on that date—fastest since 2017 and far ahead of the 5-year average of 28 percent. In contrast, near- or slightly below-normal April temperatures slowed crop development in some areas west of the Rockies and near the Canadian border. For example, only 6 percent of the Nation's barley had emerged by April 28 (compared to the 5-year average of 8 percent), despite a faster-than-normal planting pace. Although the central and eastern United States escaped consistently cool weather, there were brief cold snaps. One such spell peaked on April 25-26 with widespread freezes in the Great Lakes and Northeastern States. A few days earlier, scattered frost had been reported as far south as the Tennessee Valley, while widespread freezes struck the northwestern half of the Plains and the upper Midwest.

April Agricultural Summary

April was warmer than normal for most of the Nation. Parts of the Great Lakes, Mid-Atlantic, Mississippi Valley, and Great Plains recorded temperatures 4°F or more above normal. In contrast, much of Florida, the Pacific Northwest, and Southwest were moderately cooler than normal. Locations in Arizona recorded temperatures 4°F or more below normal. During April, large parts of the Great Plains, Midwest, Northeast, South, and Southwest recorded higher than normal amounts of precipitation. Parts of the Delta and East Texas recorded 10 inches of rain or more during the month.

By March 31, producers had planted 2 percent of the Nation's corn crop, equal to last year but 1 percentage point ahead of the 5-year average. By April 14, producers had planted 6 percent of the Nation's corn crop, 1 percentage point behind last year but 1 percentage point ahead of the 5-year average. By April 28, producers had planted 27 percent of the Nation's corn crop, 4 percentage points ahead of last year and 5 percentage points ahead of the 5-year average. At that time, planting progress was furthest advanced in Texas and North Carolina with 71 percent and 70 percent planted, respectively.

Seven percent of the Nation's corn acreage had emerged by April 28, two percentage points ahead of the previous year and 3 percentage points ahead of the 5-year average.

Three percent of the Nation's soybean acreage was planted by April 14, equal to last year but 2 percentage points ahead of the 5-year average. Eighteen percent of the Nation's soybean acreage was planted by April 28, two percentage points ahead of last year and 8 percentage points ahead of the 5-year average. By April 28, planting progress was furthest advanced in Arkansas and Mississippi with 56 percent and 52 percent planted, respectively.

By March 31, four percent of the Nation's winter wheat crop was headed, 1 percentage point behind last year but 2 percentage points ahead of the 5-year average. By April 14, eleven percent of the Nation's winter wheat crop was headed, 2 percentage points ahead of last year and 4 percentage points ahead of the 5-year average. By April 28, thirty percent of the Nation's winter wheat crop was headed, 7 percentage points ahead of last year and 9 percentage points ahead of the 5-year average. On April 28, forty-nine percent of the 2024 winter wheat crop was reported in good to excellent condition, 21 percentage points above the same time last year. In Kansas, the largest winter wheat-producing State, 31 percent of the winter wheat crop was rated in good to excellent condition.

Nationwide, 3 percent of the cotton crop was planted by March 31, equal to the previous year but 1 percentage point behind the 5-year average. Nationwide, 8 percent of the cotton crop was planted by April 14, one percentage point ahead of the previous year but equal to the 5-year average. Nationwide, 15 percent of the cotton crop was planted by April 28, one percentage point ahead of both the previous year and the 5-year average. At that time, planting progress was furthest advanced in Arizona with 64 percent, 21 percentage points ahead of last year and 9 percentage points ahead of the 5-year average.

Eleven percent of the Nation's sorghum acreage was planted by March 31, one percentage point behind last year and 2 percentage points behind the 5-year average. Fourteen percent of the Nation's sorghum acreage was planted by April 14, equal to last year but 2 percentage points behind the 5-year average. Nineteen percent of the Nation's sorghum acreage was planted by April 28, one percentage point behind both last year and the 5-year average. Texas had planted 65 percent of its sorghum acreage by April 28, two percentage points behind last year and 1 percentage point behind the 5-year average.

By March 31, producers had seeded 12 percent of the 2024 rice acreage, 3 percentage points behind the previous year but equal to the 5-year average. By March 31, seven percent of the Nation's rice acreage had emerged, 2 percentage points behind last year but 2 percentage points ahead of the 5-year average. By April 14, producers had seeded 44 percent of the 2024 rice acreage, 11 percentage points ahead of the previous year and 18 percentage points ahead of the 5-year average. By April 14, eighteen percent of the Nation's rice acreage had emerged, 1 percentage point ahead of last year and 4 percentage points ahead of the 5-year average. By April 28, producers had seeded 72 percent of the 2024 rice acreage, 12 percentage points ahead of the previous year and 26 percentage points ahead of the 5-year average. At that time, planting progress was furthest advanced in Louisiana and Texas with 92 percent and 86 percent planted, respectively. By April 28, forty-eight percent of the Nation's rice acreage had emerged, 12 percentage points ahead of last year and 20 percentage points ahead of the 5-year average.

Nationally, oat producers had seeded 30 percent of this year's acreage by March 31, six percentage points ahead of both last year and the 5-year average. Twenty-five percent of the Nation's oat acreage was emerged by March 31, two percentage points ahead of the previous year and 3 percentage points ahead of the 5-year average. Nationally, oat producers had seeded 43 percent of this year's acreage by April 14, nine percentage points ahead of last year and 8 percentage points ahead of the 5-year average. Thirty percent of the Nation's oat acreage was emerged by April 14, four percentage points ahead of the previous year and 5 percentage points ahead of the 5-year average. Nationally, oat producers had seeded 63 percent of this year's acreage by April 28, sixteen percentage points ahead of last year and 12 percentage points ahead of the 5-year average. Forty-two percent of the Nation's oat acreage was emerged by April 28, ten percentage points ahead of the previous year and 8 percentage points ahead of the 5-year average.

Two percent of the Nation's barley crop was planted by March 31, two percentage points ahead of last year but equal to the 5-year average. Eleven percent of the Nation's barley crop was planted by April 14, seven percentage points ahead of last year but 1 percentage point behind the 5-year average. Thirty-five percent of the Nation's barley crop was planted by

April 28, nineteen percentage points ahead of last year and 6 percentage points ahead of the 5-year average. At that time, planting progress was furthest advanced in Washington and Idaho, with 70 percent and 65 percent planted, respectively. Six percent of the Nation's barley crop had emerged by April 28, four percentage points ahead of the previous year but 2 percentage points behind the 5-year average.

By April 14, seven percent of the spring wheat crop was seeded, 5 percentage points ahead of last year and 1 percentage point ahead of the 5-year average. By April 28, thirty-four percent of the spring wheat crop was seeded, 24 percentage points ahead of last year and 15 percentage points ahead of the 5-year average. At that time, planting progress was furthest advanced in Washington and Idaho, with 76 percent and 72 percent planted, respectively. By April 28, five percent of the Nation's spring wheat crop had emerged, 3 percentage points ahead of the previous year but equal to the 5-year average.

Nationally, peanut producers had planted 1 percent of the 2024 peanut acreage by April 14, equal to both the previous year and the 5-year average. Nationally, peanut producers had planted 9 percent of the 2024 peanut acreage by April 28, two percentage points ahead of the previous year and 1 percentage point ahead of the 5-year average. At that time, producers in Florida had planted 23 percent of the 2024 intended acreage by week's end, equal to last year but 1 percentage point ahead of the 5-year average.

By April 14, six percent of the sugarbeet crop was planted, 3 percentage points behind last year and 5 percentage points behind the 5-year average. By April 28, sixty-six percent of the sugarbeet crop was planted, 44 percentage points ahead of last year and 34 percentage points ahead of the 5-year average. At that time, planting progress was furthest advanced in Minnesota and Idaho with 81 percent and 63 percent planted, respectively.

Crop Comments

Winter wheat: Production is forecast at 1.28 billion bushels, up 2 percent from 2023. As of May 1, the United States yield is forecast at 50.7 bushels per acre, up 0.1 bushel from last year's average yield of 50.6 bushels per acre. Pennsylvania and Tennessee are expecting record high yields. Area expected to be harvested for grain is forecast at 25.2 million acres, up 2 percent from last year. Producers expect to harvest 74 percent of the planted acres for grain. If realized, this harvest ratio would be up from last year's ratio of 67 percent, but still the fourth lowest since 1951. Michigan and Virginia are expecting record low harvested acreage.

As of April 28, forty-nine percent of the winter wheat acreage in the 18 major producing States was rated in good to excellent condition, 21 percentage points higher than at the same time last year. Nationally, 30 percent of the winter wheat crop was headed by April 28, nine percentage points ahead of the 5-year average pace.

As of April 28, the winter wheat crop in Kansas, the largest winter wheat producing State, was rated in poor to very poor condition at 31 percent. Despite the current dry conditions in Kansas, the rating was worse on April 30, 2023, at 64 percent poor to very poor.

As of April 28, the winter wheat crop in Indiana, Michigan, and Ohio was rated in good to excellent condition at 78 percent, 67 percent, and 69 percent, respectively.

Durum wheat: Production of Durum wheat in Arizona and California is forecast at a collective 7.73 million bushels, up 34 percent from last year. Acreage intended for harvest in these two States is up 39 percent from 2023.

Hay stocks on farms: All hay stored on United States farms as of May 1, 2024, totaled 21.0 million tons, up 47 percent from May 1, 2023. Disappearance from December 1, 2023 – May 1, 2024, totaled 55.7 million tons, down 3 percent from the same period a year earlier.

Record high May 1 hay stock levels were estimated in Montana, Oklahoma, and Utah. Record low hay stocks were estimated in Rhode Island.

Grapefruit: The United States 2023-2024 grapefruit crop is forecast at 345,000 tons, down 2 percent from the previous forecast but up 2 percent from last season's final utilization. The Florida forecast, at 1.80 million boxes (77,000 tons), is

down 10 percent from previous forecast and down 1 percent from the last season. California and Texas grapefruit production forecasts were carried forward from the previous forecast.

Tangerines and mandarins: The United States tangerine and mandarin crop is forecast at 904,000 tons, unchanged from the previous forecast but down 6 percent from last season's final utilization. The Florida tangerine and mandarin forecast, at 500,000 boxes (24,000 tons), is unchanged from the previous forecast but up 4 percent from last season. The California tangerine and mandarin forecast was carried forward from the previous forecast.

Peaches: The California 2024 peach crop is forecast at 510,000 tons, up 6 percent from 2023. The California Freestone crop is forecast at 280,000 tons, up 8 percent from last season. The California Clingstone crop is forecast at 230,000 tons, up 4 percent from the previous year. Full bloom occurred on March 12, two days earlier than last year. Recorded chilling hours were the second lowest in the last fifty years. Lack of rain during the winter months resulted in below average precipitation totals at the beginning of February 2024. Several storms during February and March have boosted the Sierra Nevada snowpack and significantly added to reservoirs bringing California to normal conditions. While California experienced heavy rain and hail at times during the spring months, there was minimal damage reported to the stone fruit crops. Growing conditions have been generally good which has resulted in healthy trees and an abundant fruit set. Harvest of early variety peaches has begun.

Almonds: The 2024 California almond production (shelled basis) is forecast at 3.00 billion pounds, up 21 percent from the previous year.

The California growers' 2024 almond crop experience varied, with primarily favorable weather during the first half of the growing season. The early varieties began to bloom in the second week of February. In the second half of the month, there were a handful of storms and winds, with no reports of damage to the crop. Overall, the mild temperatures and excellent weather in the latter part of February into early March helped boost pollination during the final stages. The almond bloom finished by mid-March. There was no risk of frost damage, and water allocation has not been an issue for the second straight year in a row. However, pest and disease pressures increased due to the warm and wet weather in April when the nuts were forming.

2023 Cotton Final: All cotton production is estimated at 12.1 million 480-pound bales, 17 percent lower than the 2022 crop. The United States yield for all cotton is estimated at 899 pounds per acre, down 54 pounds from the previous year.

Upland cotton production is estimated at 11.8 million 480-pound bales, down 16 percent from the 2022 crop. The United States yield for upland cotton is estimated at 895 pounds per acre, down 50 pounds from 2022.

American Pima production is estimated at 316,000 480-pounds bales, down 33 percent from 2022. The United States yield is estimated at 1,101 pounds per acre, down 180 pounds from the previous season.

Cottonseed: Cottonseed production in 2023 totaled 3.64 million tons, down 17 percent from the previous year. Sales to oil mills accounted for 44 percent of the disposition. The remaining 56 percent will be used for seed, feed, exports, and various other uses.

Statistical Methodology

Wheat survey procedures: Objective yield and farm operator surveys were conducted between April 24 and May 7 to gather information on expected yield as of May 1. The objective yield survey was conducted in three States (Kansas, Oklahoma, and Texas) where wheat is normally mature enough to make meaningful counts. Farm operators were interviewed to update previously reported acreage data and seek permission to randomly locate two sample plots in selected winter wheat fields. The counts made within each sample plot depended upon the crop's maturity. Counts such as number of stalks, heads in late boot, and number of emerged heads were made to predict the number of heads that would be harvested. The counts are used with similar data from previous years to develop a projected biological yield. The average harvesting loss is subtracted to obtain a net yield. The plots are revisited each month until crop maturity when the heads are clipped, threshed, and weighed. After the farm operator has harvested the sample field, another plot is sampled to obtain current year harvesting loss.

The farm operator survey included a sample of approximately 8,300 producers representing all major production areas. The survey was conducted primarily by telephone with some use of mail, and internet. These producers were selected from an earlier acreage survey and were asked about the probable winter wheat acres for harvest and yield on their operation. These growers will continue to be surveyed throughout the growing season to provide indications of average yields.

Orange survey procedures: The orange objective yield survey for the May 1 forecast was conducted in Florida. In August and September of last year, the number of bearing trees and the number of fruit per tree was determined. In August and subsequent months, fruit size measurement and fruit droppage surveys are conducted, which are combined with the previous components to develop the current forecast of production. California and Texas conduct grower surveys on a quarterly basis in October, January, April, and July. California also conducts objective measurement surveys in September for Navel oranges and in March for Valencia oranges.

Wheat estimating procedures: National and State level objective yield and grower reported data were reviewed for reasonableness and consistency with historical estimates. The survey data were also reviewed considering weather patterns and crop progress compared to previous months and previous years. Each Regional Field Office submits their analysis of the current situation to the Agricultural Statistics Board (ASB). The ASB uses the survey data and the State analyses to prepare the published May 1 forecasts.

Orange estimating procedures: State level objective yield indications for Florida oranges were reviewed for errors, reasonableness, and consistency with historical estimates. The Florida Field Office submits its analysis of the current situation to the Agricultural Statistics Board (ASB). The ASB uses the Florida survey data and their analysis to prepare the published May 1 forecast. The May 1 orange production forecasts for California and Texas are carried forward from April.

Revision Policy: The May 1 production forecast will not be revised; instead, a new forecast will be made each month throughout the growing season. End-of-season wheat estimates are made after harvest. At the end of the wheat marketing season, a balance sheet is calculated using carryover stocks, production, exports, millings, feeding, and ending stocks. Revisions are then made if the balance sheet relationships or other administrative data warrant changes. End-of-season orange estimates will be published in the *Citrus Fruits Summary* released in August. The orange production estimates are based on all data available at the end of the marketing season, including information from marketing orders, shipments, and processor records. Allowances are made for recorded local utilization and home use.

Reliability: To assist users in evaluating the reliability of the May 1 production forecast, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the May 1 production forecast and the final estimate is expressed as a percentage of the final estimate. The average of the squared percentage deviations for the latest 20-year period is computed. The square root of the average becomes statistically the "Root Mean Square Error." Probability statements can be made concerning expected differences in the current forecast relative to the final end-of-season estimate, assuming that factors affecting this year's forecast are not different from those influencing recent years. For example, the "Root Mean Square Error" for the May 1 winter wheat production forecast is 5.8 percent. This means that chances are two out of three that the current production forecast will not be above or below the final estimate

by more than 5.8 percent. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 10.1 percent.

Also, shown in the following table is a 20-year record for selected crops of the differences between the May 1 forecast and the final estimate. Using winter wheat again as an example, changes between the May 1 forecast and final estimate during the last 20 years have averaged 67 million bushels, ranging from 5 million to 245 million bushels. The May 1 forecast has been below the final estimate 8 times and above 12 times. This does not imply that the May 1 winter wheat forecast this year is likely to understate or overstate final production.

Reliability of May 1 Crop Production Forecasts

[Based on data for the past twenty years]

Crop	Root mean square error	90 percent confidence interval	Difference between forecast and final estimate				
			Production			Years	
			Average	Smallest	Largest	Below final	Above final
Oranges ¹ tons	(percent) 3.8	(percent) 6.5	(millions) 145	(millions) 6	(millions) 452	(number) 9	(number) 11
Wheat Winter wheat bushels	5.8	10.1	67	5	245	8	12

¹ Quantity is in thousands of units.

USDA, National Agricultural Statistics Service Information Contacts

Listed below are the commodity statisticians in the Crops Branch of the National Agricultural Statistics Service to contact for additional information. E-mail inquiries may be sent to nass@usda.gov

Nicholas Streff, Acting Chief, Crops Branch.....	(202) 720-2127
Chris Hawthorn, Head, Field Crops Section.....	(202) 720-2127
Irwin Anolik – Crop Progress and Condition	(202) 720-7621
Joshua Bates – Hemp, Oats, Soybeans.....	(202) 690-3234
Natasha Bruton – Barley, Cotton System Consumption and Stocks, Grain Crushings	(202) 690-1042
David Colwell – Fats and Oils, Flour Milling Products.....	(202) 720-8800
Michelle Harder – County Estimates, Hay	(202) 690-8533
James Johanson – Rye, Wheat	(202) 720-8068
Greg Lemmons – Corn, Flaxseed, Proso Millet.....	(202) 720-9526
Becky Sommer – Cotton, Cotton Ginnings, Sorghum	(202) 720-5944
Travis Thorson – Sunflower, Other Oilseeds.....	(202) 720-7369
Travis Thorson – Peanuts, Rice	(202) 720-2127
Fleming Gibson, Head, Fruits, Vegetables and Special Crops Section	(202) 720-2127
Deonne Holiday – Almonds, Carrots, Coffee, Cranberries, Garlic, Onions, Plums, Prunes, Tobacco.....	(202) 720-4288
Bret Holliman – Apricots, Chickpeas, Nectarines, Peaches, Snap Beans, Sweet Corn, Tomatoes.....	(202) 720-7235
Robert Little – Blueberries, Cabbage, Dry Beans, Lettuce, Macadamia, Maple Syrup, Pears, Raspberries, Spinach	(202) 720-3250
Krishna Rizal – Artichokes, Asparagus, Celery, Grapefruit, Kiwifruit, Lemons, Mandarins and tangerines, Mint, Mushrooms, Olives, Oranges, Pistachios	(202) 720-5412
Chris Singh – Apples, Cucumbers, Hazelnuts, Potatoes, Pumpkins, Squash, Strawberries, Sugarbeets, Sugarcane, Sweet Potatoes	(202) 720-4285
Antonio Torres – Cantaloupes, Dry Edible Peas, Grapes, Green Peas, Honeydews, Lentils, Sweet Cherries, Tart Cherries, Walnuts, Watermelons	(202) 720-2157
Chris Wallace – Avocados, Bell Peppers, Broccoli, Cauliflower, Chile Peppers, Dates, Floriculture, Hops, Papayas, Pecans	(202) 720-4215

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