Crop Production

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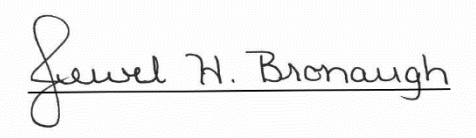
Orange Production Down 5 Percent from December Forecast

The United States all orange forecast for the 2022-2023 season is 2.70 million tons, down 5 percent from the previous forecast and down 22 percent from the 2021- 2022 final utilization. The Florida all orange forecast, at 18.0 million boxes (810,000 tons), is down 10 percent from the previous forecast and down 56 percent from last season's final utilization. In Florida, early, midseason, and Navel varieties are forecast at 7.00 million boxes (315,000 tons), unchanged from the previous forecast but down 62 percent from last season's final utilization. The Florida Valencia orange forecast, at 11.0 million boxes (495,000 tons), is down 15 percent from the previous forecast and down 52 percent from last season's final utilization.

The California all orange forecast is 46.1 million boxes (1.84 million tons), is down 2 percent from previous forecast but up 14 percent from last season's final utilization. The California Navel orange forecast is 38.0 million boxes (1.52 million tons), unchanged from the previous forecast but up 19 percent from last season's final utilization. The California Valencia orange forecast is 8.10 million boxes (324,000 tons), down 11 percent from the previous forecast and down 6 percent from last season's final utilization. The Texas all orange forecast, at 1.15 million boxes (49,000 tons) unchanged from the previous forecast but up significantly from last season's final utilization.

This report was approved on January 12, 2023.



Deputy Secretary of
Agriculture
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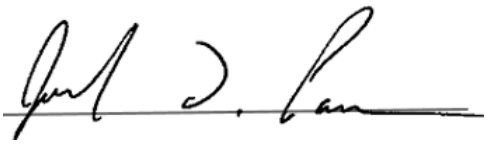

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Utilized Production of Citrus Fruits by Crop – States and United States: 2021-2022 and Forecasted January 1, 2023

[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	
	2021-2022	2022-2023	2021-2022	2022-2023
	(1,000 boxes)	(1,000 boxes)	(1,000 tons)	(1,000 tons)
Oranges				
California, all	40,400	46,100	1,616	1,844
Early, mid, and Navel [2]	31,800	38,000	1,272	1,520
Valencia	8,600	8,100	344	324
Florida, all	41,050	18,000	1,847	810
Early, mid, and Navel [2]	18,250	7,000	821	315
Valencia	22,800	11,000	1,026	495
Texas, all	200	1,150	8	49
Early, mid, and Navel [2]	170	900	7	38
Valencia	30	250	1	11
United States, all	81,650	65,250	3,471	2,703
Early, mid, and Navel [2]	50,220	45,900	2,100	1,873
Valencia	31,430	19,350	1,371	830
Grapefruit				
California	4,100	4,300	164	172
Florida	3,330	1,500	142	64
Texas	1,700	2,200	68	88
United States	9,130	8,000	374	324
Tangerines and mandarins [3]				
California	17,400	22,000	696	880
Florida	750	500	36	24
United States	18,150	22,500	732	904
Lemons				
Arizona	950	1,500	38	60
California	24,900	22,000	996	880
United States	25,850	23,500	1,034	940

[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] Navel and miscellaneous varieties in California. Early (including Navel) and midseason varieties in Florida and Texas.
[3] Includes tangelos and tangors.

Hay Stocks on Farms – States and United States: May 1 and December 1, 2021 and 2022

State	May 1		December 1	
	2021	2022	2021	2022
	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)
Alabama	300	240	1,550	1,300
Arizona	20	10	180	250
Arkansas	240	260	1,700	1,440
California	220	280	1,200	1,125
Colorado	230	580	2,000	1,350
Connecticut	6	5	38	41
Delaware	2	2	10	11
Florida	60	75	460	450
Georgia	290	190	1,260	950
Idaho	410	530	2,350	2,500
Illinois	270	260	950	980
Indiana	150	240	900	770
Iowa	430	720	3,120	2,480
Kansas	910	670	5,000	4,100
Kentucky	950	980	3,750	3,100
Louisiana	160	180	640	620
Maine	21	30	105	142
Maryland	57	66	275	300
Massachusetts	9	8	34	39
Michigan	190	270	1,100	980
Minnesota	400	330	1,460	2,190
Mississippi	170	180	1,000	800
Missouri	1,000	1,100	5,700	4,650
Montana	970	450	2,900	3,250
Nebraska	1,000	1,250	4,650	3,000
Nevada	90	52	490	560
New Hampshire	5	5	42	41
New Jersey	10	14	85	77
New Mexico	40	30	240	190
New York	290	550	1,700	1,400
North Carolina	190	150	950	1,000
North Dakota	950	520	2,100	3,300
Ohio	210	360	1,400	1,350
Oklahoma	1,150	600	4,260	3,000
Oregon	290	220	920	1,410
Pennsylvania	275	340	1,440	1,630
Rhode Island	1	1	5	5
South Carolina	125	80	450	380
South Dakota	2,200	1,090	3,300	4,350
Tennessee	570	530	3,000	2,680
Texas	1,200	1,600	8,200	5,150
Utah	170	290	1,000	1,250
Vermont	35	34	157	175
Virginia	480	280	1,800	1,700
Washington	220	180	1,100	1,200
West Virginia	145	105	790	780
Wisconsin	570	630	2,105	2,165
Wyoming	325	200	1,150	1,300
United States	18,006	16,767	79,016	71,911

Crop Area Planted and Harvested, Yield, and Production in Domestic Units – United States: 2022 and 2023

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

Crop	Area planted		Area harvested	
	2022	2023	2022	2023
	(1,000 acres)	(1,000 acres)	(1,000 acres)	(1,000 acres)
Grains and hay				
Barley	2,945		2,433	
Corn for grain [1]	88,579		79,207	
Corn for silage	(NA)		6,860	
Hay, all	(NA)		49,546	
Alfalfa	(NA)		14,913	
All other	(NA)		34,633	
Oats	2,581		890	
Proso millet	637		507	
Rice	2,222		2,172	
Rye	2,175		341	
Sorghum for grain [1]	6,325		4,570	
Sorghum for silage	(NA)		525	
Wheat, all	45,738		35,480	
Winter	33,271	36,950	23,459	
Durum	1,632		1,581	
Other spring	10,835		10,440	
Oilseeds				
Canola	2,213.0		2,169.0	
Cottonseed	(X)		(X)	
Flaxseed	263		244	
Mustard seed	221.0		182.0	
Peanuts	1,450.3		1,385.4	
Rapeseed	10.9		10.4	
Safflower	150.2		135.3	
Soybeans for beans	87,450		86,336	
Sunflower	1,693.0		1,607.0	
Cotton, tobacco, and sugar crops				
Cotton, all	13,763.0		7,440.7	
Upland	13,580.0		7,262.5	
American Pima	183.0		178.2	
Sugarbeets	1,159.5		1,137.1	
Sugarcane	(NA)		928.6	
Tobacco	(NA)		201.8	
Dry beans, peas, and lentils				
Chickpeas	353.1		341.9	
Dry edible beans	1,250.0		1,223.0	
Dry edible peas	919.0		862.0	
Lentils	660.0		602.0	
Potatoes and miscellaneous				
Hops	(NA)		59.8	
Maple syrup	(NA)		(NA)	
Mushrooms	(NA)		(NA)	
Peppermint oil	(NA)		34.0	
Potatoes	901.0		895.6	
Spearmint oil	(NA)		13.7	

See footnote(s) at end of table.

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Crop Area Planted and Harvested, Yield, and Production in Domestic Units – United States: 2022 and 2023 (continued)

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

Crop	Yield per acre		Production	
	2022	2023	2022	2023
			(1,000)	(1,000)
Grains and hay				
Barley ..... bushels	71.7		174,333	
Corn for grain ..... bushels	173.3		13,729,719	
Corn for silage ..... tons	18.7		128,567	
Hay, all ..... tons	2.28		112,801	
Alfalfa ..... tons	3.22		47,958	
All other ..... tons	1.87		64,843	
Oats ..... bushels	64.8		57,655	
Proso millet ..... bushels	18.5		9,403	
Rice [2] ..... cwt	7,383		160,368	
Rye ..... bushels	36.1		12,301	
Sorghum for grain ..... bushels	41.1		187,785	
Sorghum for silage ..... tons	10.8		5,662	
Wheat, all ..... bushels	46.5		1,649,878	
Winter ..... bushels	47.0		1,103,707	
Durum ..... bushels	40.5		63,981	
Other spring ..... bushels	46.2		482,190	
Oilseeds				
Canola ..... pounds	1,762		3,821,810	
Cottonseed ..... tons	(X)		4,455.0	
Flaxseed ..... bushels	17.6		4,304	
Mustard seed ..... pounds	557		101,290	
Peanuts ..... pounds	4,019		5,568,150	
Rapeseed ..... pounds	1,863		19,380	
Safflower ..... pounds	1,213		164,054	
Soybeans for beans ..... bushels	49.5		4,276,123	
Sunflower ..... pounds	1,750		2,812,540	
Cotton, tobacco, and sugar crops				
Cotton, all [2] ..... bales	947		14,680.0	
Upland [2] ..... bales	939		14,206.0	
American Pima [2] ..... bales	1,277		474.0	
Sugarbeets ..... tons	28.6		32,574	
Sugarcane ..... tons	37.3		34,675	
Tobacco ..... pounds	2,217		447,367	
Dry beans, peas, and lentils				
Chickpeas [2] ..... cwt	1,070		3,658	
Dry edible beans [2] ..... cwt	2,113		25,847	
Dry edible peas [2] ..... cwt	1,751		15,092	
Lentils [2] ..... cwt	912		5,489	
Potatoes and miscellaneous				
Hops ..... pounds	1,694		101,286.3	
Maple syrup ..... gallons	(NA)		5,028	
Mushrooms ..... pounds	(NA)		702,391	
Peppermint oil ..... pounds	99		3,349	
Potatoes ..... cwt	438		392,243	
Spearmint oil ..... pounds	120		1,648	

(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: 2022 and 2023

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

Crop	Area planted		Area harvested	
	2022	2023	2022	2023
	(hectares)	(hectares)	(hectares)	(hectares)
Grains and hay				
Barley	1,191,810		984,610	
Corn for grain [1]	35,847,040		32,054,280	
Corn for silage	(NA)		2,776,170	
Hay, all [2]	(NA)		20,050,770	
Alfalfa	(NA)		6,035,140	
All other	(NA)		14,015,630	
Oats	1,044,500		360,170	
Proso millet	257,790		205,180	
Rice	899,220		878,990	
Rye	880,200		138,000	
Sorghum for grain [1]	2,559,660		1,849,430	
Sorghum for silage	(NA)		212,460	
Wheat, all [2]	18,509,710		14,358,400	
Winter	13,464,440	14,953,300	9,493,620	
Durum	660,450		639,810	
Other spring	4,384,820		4,224,960	
Oilseeds				
Canola	895,580		877,770	
Cottonseed	(X)		(X)	
Flaxseed	106,430		98,740	
Mustard seed	89,440		73,650	
Peanuts	586,920		560,660	
Rapeseed	4,410		4,210	
Safflower	60,780		54,750	
Soybeans for beans	35,390,140		34,939,320	
Sunflower	685,140		650,340	
Cotton, tobacco, and sugar crops				
Cotton, all [2]	5,569,750		3,011,180	
Upland	5,495,690		2,939,060	
American Pima	74,060		72,120	
Sugarbeets	469,240		460,170	
Sugarcane	(NA)		375,800	
Tobacco	(NA)		81,650	
Dry beans, peas, and lentils				
Chickpeas	142,900		138,360	
Dry edible beans	505,860		494,940	
Dry edible peas	371,910		348,840	
Lentils	267,100		243,620	
Potatoes and miscellaneous				
Hops	(NA)		24,190	
Maple syrup	(NA)		(NA)	
Mushrooms	(NA)		(NA)	
Peppermint oil	(NA)		13,760	
Potatoes	364,630		362,440	
Spearmint oil	(NA)		5,540	

See footnote(s) at end of table.

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Crop Area Planted and Harvested, Yield, and Production in Metric Units – United States: 2022 and 2023 (continued)

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

Crop	Yield per hectare		Production	
	2022	2023	2022	2023
	(metric tons)	(metric tons)	(metric tons)	(metric tons)
Grains and hay				
Barley	3.85		3,795,650	
Corn for grain	10.88		348,750,930	
Corn for silage	42.01		116,634,020	
Hay, all [2]	5.10		102,331,350	
Alfalfa	7.21		43,506,770	
All other	4.20		58,824,580	
Oats	2.32		836,860	
Proso millet	1.04		213,260	
Rice	8.28		7,274,170	
Rye	2.26		312,460	
Sorghum for grain	2.58		4,769,960	
Sorghum for silage	24.18		5,136,480	
Wheat, all [2]	3.13		44,902,320	
Winter	3.16		30,037,980	
Durum	2.72		1,741,280	
Other spring	3.11		13,123,060	
Oilseeds				
Canola	1.97		1,733,540	
Cottonseed	(X)		4,041,510	
Flaxseed	1.11		109,330	
Mustard seed	0.62		45,940	
Peanuts	4.50		2,525,670	
Rapeseed	2.09		8,790	
Safflower	1.36		74,410	
Soybeans for beans	3.33		116,377,000	
Sunflower	1.96		1,275,750	
Cotton, tobacco, and sugar crops				
Cotton, all [2]	1.06		3,196,190	
Upland	1.05		3,092,990	
American Pima	1.43		103,200	
Sugarbeets	64.22		29,550,640	
Sugarcane	83.71		31,456,630	
Tobacco	2.49		202,920	
Dry beans, peas, and lentils				
Chickpeas	1.20		165,920	
Dry edible beans	2.37		1,172,400	
Dry edible peas	1.96		684,560	
Lentils	1.02		248,980	
Potatoes and miscellaneous				
Hops	1.90		45,940	
Maple syrup	(NA)		25,140	
Mushrooms	(NA)		318,600	
Peppermint oil	0.11		1,520	
Potatoes	49.09		17,791,840	
Spearmint oil	0.13		750	

(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 2023 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	374	324
Lemons	1,000 tons	1,034	940
Oranges	1,000 tons	3,471	2,703
Tangerines and mandarins	1,000 tons	732	904
Noncitrus			
Apples, commercial	million pounds	10,110.0	
Apricots	tons	36,200	
Avocados	tons		
Blueberries, Cultivated	1,000 pounds		
Blueberries, Wild (Maine)	1,000 pounds		
Cherries, Sweet	tons	275,000	
Cherries, Tart	million pounds	229.2	
Coffee (Hawaii)	1,000 pounds		
Cranberries	barrel	7,440,000	
Dates	tons		
Grapes	tons	5,985,000	
Kiwifruit (California)	tons		
Nectarines (California)	tons		
Olives (California)	tons		
Papayas (Hawaii)	1,000 pounds		
Peaches	tons	583,500	
Pears	tons	690,000	
Plums (California)	tons		
Prunes (California)	tons		
Raspberries, all	1,000 pounds		
Strawberries	1,000 cwt		
Nuts and miscellaneous			
Almonds, shelled (California)	1,000 pounds	2,600,000	
Hazelnuts, in-shell (Oregon)	tons	68,000	
Macadamias (Hawaii)	1,000 pounds		
Pecans, in-shell	1,000 pounds	280,000	
Pistachios (California)	1,000 pounds		
Walnuts, in-shell (California)	tons	720,000	

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

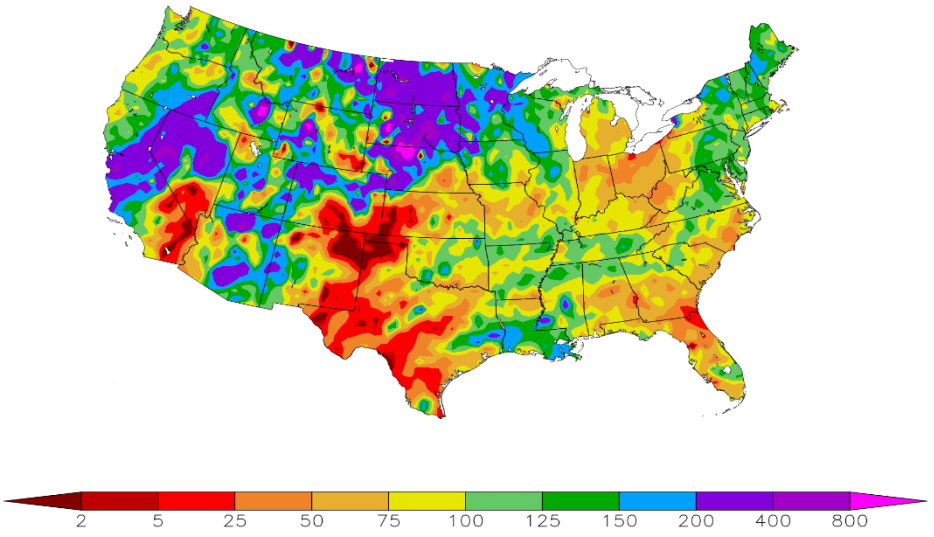
Fruits and Nuts Production in Metric Units – United States: 2023 and 2024

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2023 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)
Citrus [1]		
Grapefruit	339,290	293,930
Lemons	938,030	852,750
Oranges	3,148,840	2,452,120
Tangerines and mandarins	664,060	820,100
Noncitrus		
Apples, commercial	4,585,820	
Apricots	32,840	
Avocados		
Blueberries, Cultivated		
Blueberries, Wild (Maine)		
Cherries, Sweet	249,480	
Cherries, Tart	103,960	
Coffee (Hawaii)		
Cranberries	337,470	
Dates		
Grapes	5,429,500	
Kiwifruit (California)		
Nectarines (California)		
Olives (California)		
Papayas (Hawaii)		
Peaches	529,340	
Pears	625,960	
Plums (California)		
Prunes (California)		
Raspberries, all		
Strawberries		
Nuts and miscellaneous		
Almonds, shelled (California)	1,179,340	
Hazelnuts, in-shell (Oregon)	61,690	
Macadamias (Hawaii)		
Pecans, in-shell	127,010	
Pistachios (California)		
Walnuts, in-shell (California)	653,170	

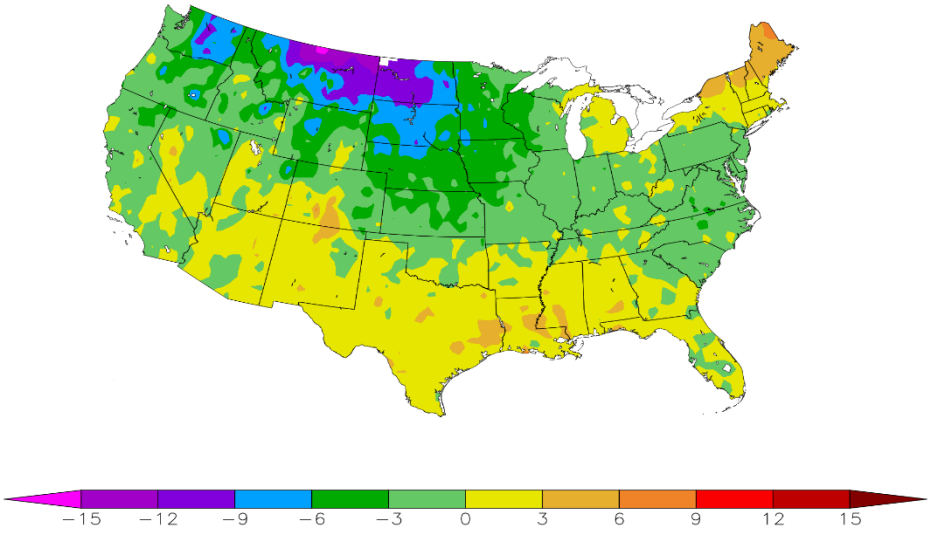
[1] Production years are 2022-2023 and 2023-2024.

Percent of Normal Precipitation (%)
12/1/2022 – 12/31/2022



NOAA Regional Climate Centers

Departure from Normal Temperature (F)
12/1/2022 – 12/31/2022



NOAA Regional Climate Centers

December Weather Summary

Significant December precipitation in the West, as well as the South, East, and lower Midwest, further chipped away at expansive drought. By January 3, 2023, just under one-half (46.3 percent) of the continental United States was experiencing drought, down 16.7 percentage points from the autumn 2022 peak of nearly 63 percent, according to the *Drought Monitor*. Only a few areas, including portions of the southern Atlantic States and the central Plains, failed to experience some degree of December drought relief.

Some of the most impressive December storminess occurred in the Far West, including northern and central California. According to the California Department of Water Resources, the average water equivalency of the Sierra Nevada snowpack grew from about 3 to 17 inches in December, with the bulk of the precipitation falling during the first half of the month and in the year's final days. The 17-inch equivalency was about 175 percent of the early-January average and roughly two-thirds of the typical end-of-season value.

In the Northwest, some winter wheat-production areas—especially in eastern Washington—retained a protective snow cover for the entire month. Snow also blanketed the northern Plains, insulating wheat from a harsh cold snap that sent temperatures into the range of -20 to -40°F, with the Arctic outbreak peaking for several days starting around December 20. The central and southern Plains were not as fortunate, with only patchy snow providing limited protection from sub-zero temperatures. Due to drought and temperature extremes, one-quarter to one-half of the winter wheat was rated in very poor to poor condition at the end of December in Oklahoma (27 percent), Nebraska (36 percent), and Kansas (49 percent).

The Arctic outbreak, which lasted through the holiday weekend (December 24-26), also potentially harmed a variety of crops in the Deep South. In the wake of multiple freezes, Southern producers monitored cover crops and winter grains and forages, some of which were burned back by low temperatures. Southern Florida escaped the freeze, but crops such as citrus, sugarcane, and strawberries in winter agricultural regions from Deep South Texas to Louisiana and central Florida were subjected to temperatures below 32°F. Another cold-related impact was an epic Great Lake-effect snow and wind event, especially in parts of western New York.

On the strength of the cold wave, monthly temperatures averaged 5 to 15°F below normal in numerous locations from the interior Northwest to the northern Plains. Elsewhere, temperatures were closer to normal due to the offsetting effects of early-month warmth and the subsequent Arctic outbreak, although monthly readings averaged more than 5°F above normal in parts of northern New England.

With wetter December weather in parts of the South, muddy field conditions developed. By the end of December, topsoil moisture was rated 60 percent surplus in Arkansas and Louisiana. At the same time, topsoil moisture was at least one-half very short to short in a variety of states across the Plains and Rockies, including New Mexico (76 percent), Nebraska (73 percent), Kansas (69 percent), Oklahoma (58 percent), and Wyoming (56 percent).

The combination of long-term drought in the central United States and the late-December cold wave led to ongoing lower-than-normal river levels in much of the Mississippi River drainage basin. Due to the late-month formation of ice (and ice jams) in the middle Missouri River, record-low water levels developed in the lower Missouri River. On December 30-31 in Missouri, river stages along the Missouri River dipped to -0.98 and -2.88 feet, respectively, in Hermann and Jefferson City. Previous records had been -0.90 foot in Hermann (on December 21, 1878) and -1.10 feet in Jefferson City (on February 3, 1908).

December Agricultural Summary

Much of the Nation was cooler than normal during the month of December. Most of the Mid-Atlantic, Midwest, Pacific Northwest, Central and Northern Plains, and Rockies recorded cooler than normal temperatures for the month of December. Parts of Montana and North Dakota recorded temperatures 12°F or more below normal for the month. In contrast, the Lower Mississippi Valley, Northeast, and Southern Plains, as well as parts of the Southeast and Southwest, recorded moderately warmer than normal temperatures. Areas in northern Maine recorded temperatures 6°F or more above normal for the month. December was drier than normal for much of Southern California-Nevada, the Southern

High Plains, Ohio Valley, and Southeast. In contrast, much of the Northern Plains, as well as parts of Arizona, the Great Basin, Nebraska, Pacific Northwest, and Rockies received at least twice the normal amount of precipitation for the month.

Nationwide, 91 percent of the 2023 winter wheat acreage had emerged by November 27, equal to last year but 1 percentage point ahead of the 5-year average. As of November 27, thirty-four percent of the 2023 winter wheat acreage was reported in good to excellent condition, 10 percentage points below the same time last year.

By November 27, eighty-four percent of the Nation's cotton acreage had been harvested, equal to last year but 5 percentage points ahead of the 5-year average.

Ninety-seven percent of the Nation's peanut acreage had been harvested as of November 27, two percentage points ahead of last year and 1 percentage point ahead of the 5-year average.

Crop Comments

Grapefruit: The United States 2022-2023 grapefruit crop is forecast at 324,000 tons, up 1 percent from the previous forecast but down 13 percent from last season's final utilization. California's grapefruit forecast at 4.30 million boxes (172,000 tons), is up 5 percent from the previous forecast and up 5 percent from last season. The Texas grapefruit forecast at 2.20 million boxes is up 10 percent from the previous forecast and up 29 percent from the 2021- 2022 season. The Florida forecast, at 1.50 million boxes (64,000 tons), is down 17 percent from previous forecast and down 55 percent from the last season.

Lemons: The 2022-2023 United States lemon crop is forecast at 940,000 tons, down 3 percent from previous forecast and down 9 percent from last season's final utilization. The California forecast, at 22.0 million boxes (880,000 tons), is down 4 percent from the 2021-2022 season and down 12 percent from the 2021-2022 season. The Arizona forecast, at 1.50 million boxes (60,000 tons), is up 30 percent from the previous forecast and up 58 percent from last year.

Tangerines and mandarins: The United States tangerine and mandarin crop is forecast at 904,000 tons, up 9 percent from the previous forecast and up 23 percent from the last season's final utilization. The California tangerine and mandarin forecast, at 22.0 million boxes (880,000 tons) is up 10 percent from last forecast and up 26 percent from last year.

Hay stocks on farms: All hay stored on United States farms as of December 1, 2022 totaled 71.9 million tons, down 9 percent from December 1, 2021, which is the lowest December 1 stocks since 1954. Disappearance from May 1, 2022 - December 1, 2022, totaled 57.7 million tons, down 3 percent from the same period in 2021.

Record low December 1 hay stock levels were estimated in California, Colorado, and Nebraska.

Statistical Methodology

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

Estimating procedures: State level objective yield estimates for Florida oranges were reviewed for errors, reasonableness, and consistency with historical estimates. Reports from growers in California and Texas were also used for setting estimates. These three States submit their analyses of the current situation to the Agricultural Statistics Board (ASB). The ASB uses the survey data and the State analyses to prepare the published January 1 forecast.

Revision policy: The January 1 production forecasts will not be revised. A new forecast will be made each month throughout the growing season. End-of-season estimates will be published in the *Citrus Fruits Summary* released in August. The 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 January 1 production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the January 1 production forecast and the final estimate is expressed as a percentage of the final estimate. The average of 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.

The "Root Mean Square Error" for the January 1 orange production forecast is 5.9 percent. This means that chances are 2 out of 3 that the current orange production forecast will not be above or below the final estimates by more than 5.9 percent. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 10.2 percent.

Changes between the January 1 orange forecast and the final estimates during the past 20 years have averaged 297,000 tons, ranging from 2,000 tons to 843,000 tons. The January 1 forecast for oranges has been below the final estimate 6 times and above 14 times. The difference does not imply that the January 1 forecast this year is likely to understate or overstate final production.

Reliability of January 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
	(percent)	(percent)	(millions)	(millions)	(millions)	(number)	(number)
Oranges [1] .....tons	5.9	10.2	297	2	843	6	14

[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

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- Joshua Bates – Hemp, Oats, Soybeans ..... (202) 690-3234
- David Colwell – Current Agricultural Industrial Reports ..... (202) 720-8800
- Michelle Harder – Barley, 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
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- Robert Little – Apricots, Dry Beans, Lettuce, Macadamia, Maple Syrup, Nectarines, Pears, Snap Beans, Spinach, Tomatoes ..... (202) 720-3250
- Krishna Rizal – Artichokes, Cauliflower, Celery, Garlic, Grapefruit, Kiwifruit, Lemons, Mandarins and tangerines, Mint, Mushrooms, Olives, Oranges, Pistachios ..... (202) 720-5412
- Chris Singh – Apples, Blueberries, Cucumbers, Hazelnuts, Potatoes, Pumpkins, Raspberries, Squash, Strawberries, Sugarbeets, Sugarcane, Sweet Potatoes ..... (202) 720-4285
- Antonio Torres – Cantaloupes, Dry Edible Peas, Green Peas, Honeydews, Lentils, Papayas, Peaches, Sweet Cherries, Tart Cherries, Walnuts, Watermelons ..... (202) 720-2157
- Chris Wallace – Avocados, Bell Peppers, Broccoli, Cabbage, Chickpeas, Chile Peppers, Dates, Floriculture, Grapes, Hops, Pecans ..... (202) 720-4215

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For more information on NASS surveys and reports, call the NASS Agricultural Statistics Hotline at (800) 727-9540, 7:30 a.m. to 4:00 p.m. ET, or e-mail: nass@usda.gov.

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