



# Crop Production

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## Orange Production Down 3 Percent from January Forecast

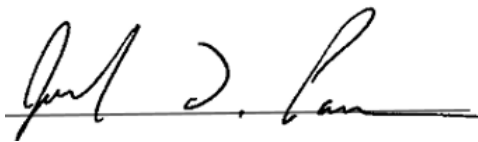
**The United States all orange** forecast for the 2022-2023 season is 2.61 million tons, down 3 percent from the previous forecast and down 25 percent from the 2021- 2022 final utilization. The Florida all orange forecast, at 16.0 million boxes (720,000 tons), is down 11 percent from the previous forecast and down 61 percent from last season's final utilization. In Florida, early, midseason, and Navel varieties are forecast at 6.00 million boxes (270,000 tons), down 14 percent from the previous forecast and down 67 percent from last season's final utilization. The Florida Valencia orange forecast, at 10.0 million boxes (450,000 tons), is down 9 percent from the previous forecast and down 56 percent from last season's final utilization.

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This report was approved on February 8, 2023.



Secretary of Agriculture  
Designate  
Seth Meyer



Agricultural Statistics Board  
Chairperson  
Joseph L. Parsons

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## Utilized Production of Citrus Fruits by Crop – States and United States: 2021-2022 and Forecasted February 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 <sup>1</sup>		Utilized production ton equivalent	
	2021-2022 (1,000 boxes)	2022-2023 (1,000 boxes)	2021-2022 (1,000 tons)	2022-2023 (1,000 tons)
<b>Oranges</b>				
California, all <sup>2</sup> .....	40,400	46,100	1,616	1,844
Early, mid, and Navel <sup>3</sup> .....	31,800	38,000	1,272	1,520
Valencia .....	8,600	8,100	344	324
Florida, all .....	41,050	16,000	1,847	720
Early, mid, and Navel <sup>3</sup> .....	18,250	6,000	821	270
Valencia .....	22,800	10,000	1,026	450
Texas, all <sup>2</sup> .....	200	1,150	8	49
Early, mid, and Navel <sup>3</sup> .....	170	900	7	38
Valencia .....	30	250	1	11
United States, all .....	81,650	63,250	3,471	2,613
Early, mid, and Navel <sup>3</sup> .....	50,220	44,900	2,100	1,828
Valencia .....	31,430	18,350	1,371	785
<b>Grapefruit</b>				
California <sup>2</sup> .....	4,100	4,300	164	172
Florida, all .....	3,330	1,500	142	64
Texas <sup>2</sup> .....	1,700	2,200	68	88
United States .....	9,130	8,000	374	324
<b>Tangerines and mandarins <sup>4</sup></b>				
California <sup>2</sup> .....	17,400	22,000	696	880
Florida .....	750	500	36	24
United States .....	18,150	22,500	732	904
<b>Lemons <sup>2</sup></b>				
Arizona .....	950	1,500	38	60
California .....	24,900	22,000	996	880
United States .....	25,850	23,500	1,034	940

<sup>1</sup> 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.

<sup>2</sup> Estimates for current year carried forward from an earlier forecast.

<sup>3</sup> Navel and miscellaneous varieties in California. Early (including Navel) and midseason varieties in Florida and Texas.

<sup>4</sup> Includes tangelos and tangors.

## Sugarcane Area Harvested, Yield, and Production by Use – States and United States: 2021 and 2022

Use and State	Area harvested		Yield per acre <sup>1</sup>		Production <sup>1</sup>	
	2021 (1,000 acres)	2022 (1,000 acres)	2021 (tons)	2022 (tons)	2021 (1,000 tons)	2022 (1,000 tons)
<b>For sugar</b>						
Florida .....	388.0	382.0	42.4	44.3	16,451	16,923
Louisiana <sup>2</sup> .....	466.0	475.0	29.0	33.3	13,514	15,818
Texas <sup>2</sup> .....	34.3	31.4	30.8	21.8	1,056	685
United States .....	888.3	888.4	34.9	37.6	31,021	33,426
<b>For seed</b>						
Florida .....	15.5	15.9	47.5	47.4	736	754
Louisiana <sup>2</sup> .....	29.3	22.8	34.5	35.9	1,011	819
Texas <sup>2</sup> .....	2.1	0.5	33.5	23.3	70	12
United States .....	46.9	39.2	38.7	40.4	1,817	1,585
<b>For sugar and seed</b>						
Florida .....	403.5	397.9	42.6	44.4	17,187	17,677
Louisiana <sup>2</sup> .....	495.3	497.8	29.3	33.4	14,525	16,637
Texas <sup>2</sup> .....	36.4	31.9	30.9	21.8	1,126	697
United States .....	935.2	927.6	35.1	37.7	32,838	35,011

<sup>1</sup> Net tons.

<sup>2</sup> Estimates are carried forward from an earlier estimate.

**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)
<b>Grains and hay</b>				
Barley .....	2,945		2,433	
Corn for grain <sup>1</sup> .....	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 <sup>1</sup> .....	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	
<b>Oilseeds</b>				
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	
<b>Cotton, tobacco, and sugar crops</b>				
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)		927.6	
Tobacco .....	(NA)		201.8	
<b>Dry beans, peas, and lentils</b>				
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	
<b>Potatoes and miscellaneous</b>				
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 (1,000)	2023 (1,000)
<b>Grains and hay</b>				
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 <sup>2</sup> ..... 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	
<b>Oilseeds</b>				
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	
<b>Cotton, tobacco, and sugar crops</b>				
Cotton, all <sup>2</sup> ..... bales	947		14,680.0	
Upland <sup>2</sup> ..... bales	939		14,206.0	
American Pima <sup>2</sup> ..... bales	1,277		474.0	
Sugarbeets ..... tons	28.6		32,574	
Sugarcane ..... tons	37.7		35,011	
Tobacco ..... pounds	2,217		447,367	
<b>Dry beans, peas, and lentils</b>				
Chickpeas <sup>2</sup> ..... cwt	1,070		3,658	
Dry edible beans <sup>2</sup> ..... cwt	2,113		25,847	
Dry edible peas <sup>2</sup> ..... cwt	1,751		15,092	
Lentils <sup>2</sup> ..... cwt	912		5,489	
<b>Potatoes and miscellaneous</b>				
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.

<sup>1</sup> Area planted for all purposes.

<sup>2</sup> 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)
<b>Grains and hay</b>				
Barley .....	1,191,810		984,610	
Corn for grain <sup>1</sup> .....	35,847,040		32,054,280	
Corn for silage .....	(NA)		2,776,170	
Hay, all <sup>2</sup> .....	(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 <sup>1</sup> .....	2,559,660		1,849,430	
Sorghum for silage .....	(NA)		212,460	
Wheat, all <sup>2</sup> .....	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	
<b>Oilseeds</b>				
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	
<b>Cotton, tobacco, and sugar crops</b>				
Cotton, all <sup>2</sup> .....	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)		375,390	
Tobacco .....	(NA)		81,650	
<b>Dry beans, peas, and lentils</b>				
Chickpeas .....	142,900		138,360	
Dry edible beans .....	505,860		494,940	
Dry edible peas .....	371,910		348,840	
Lentils .....	267,100		243,620	
<b>Potatoes and miscellaneous</b>				
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)
<b>Grains and hay</b>				
Barley .....	3.85		3,795,650	
Corn for grain .....	10.88		348,750,930	
Corn for silage .....	42.01		116,634,020	
Hay, all <sup>2</sup> .....	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 <sup>2</sup> .....	3.13		44,902,320	
Winter .....	3.16		30,037,980	
Durum .....	2.72		1,741,280	
Other spring .....	3.11		13,123,060	
<b>Oilseeds</b>				
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	
<b>Cotton, tobacco, and sugar crops</b>				
Cotton, all <sup>2</sup> .....	1.06		3,196,190	
Upland .....	1.05		3,092,990	
American Pima .....	1.43		103,200	
Sugarbeets .....	64.22		29,550,640	
Sugarcane .....	84.61		31,761,440	
Tobacco .....	2.49		202,920	
<b>Dry beans, peas, and lentils</b>				
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	
<b>Potatoes and miscellaneous</b>				
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.

<sup>1</sup> Area planted for all purposes.

<sup>2</sup> Total may not add due to rounding.

## Fruits and Nuts 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 2022 crop year, except citrus which is for the 2022-2023 season. Blank data cells indicate estimation period has not yet begun]

Crop	Production		
	2022	2023	
<b>Citrus</b> <sup>1</sup>			
Grapefruit .....	1,000 tons	374	324
Lemons .....	1,000 tons	1,034	940
Oranges .....	1,000 tons	3,471	2,613
Tangerines and mandarins .....	1,000 tons	732	904
<b>Noncitrus</b>			
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	26,000	
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		
<b>Nuts and miscellaneous</b>			
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	274,520	
Pistachios (California) .....	1,000 pounds		
Walnuts, in-shell (California) .....	tons	720,000	

<sup>1</sup> Production years are 2021-2022 and 2022-2023.

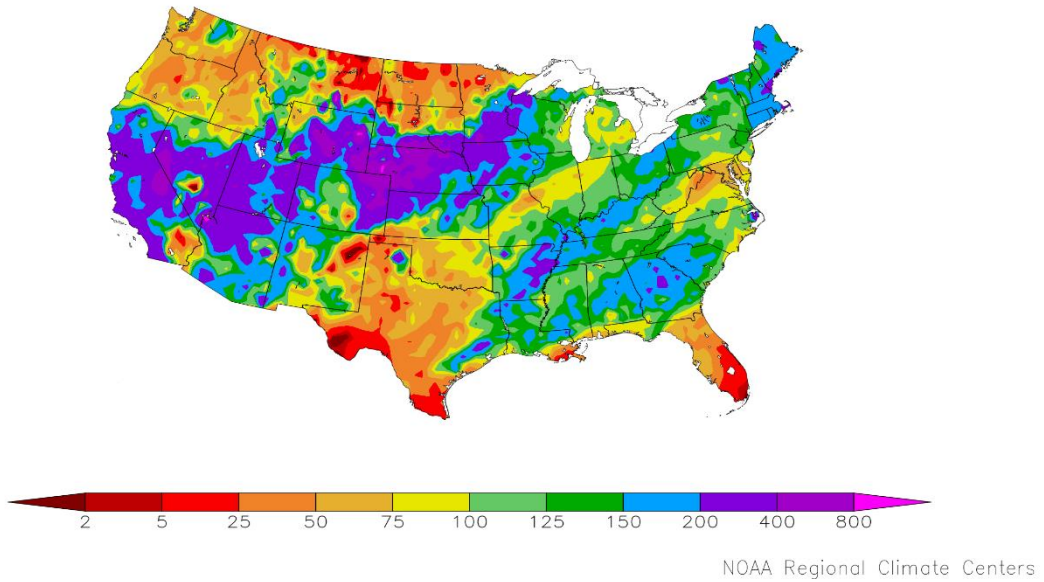
## Fruits and Nuts Production in Metric Units – United States: 2022 and 2023

[Data are the latest estimates available, either from the current report or from previous reports. Current year estimates are for the full 2022 crop year, except citrus which is for the 2022-2023 season. Blank data cells indicate estimation period has not yet begun]

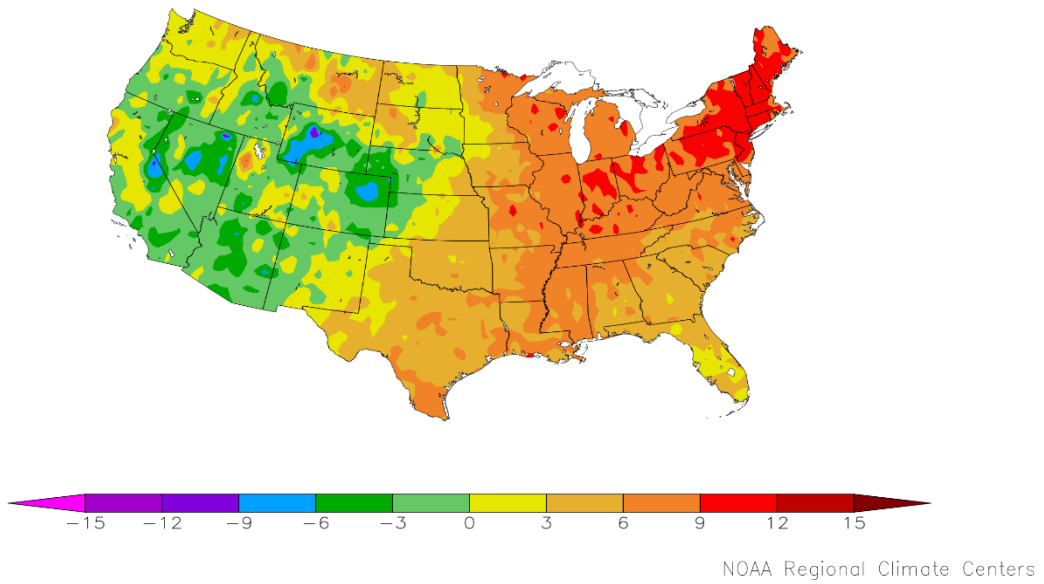
Crop	Production	
	2022 (metric tons)	2023 (metric tons)
<b>Citrus<sup>1</sup></b>		
Grapefruit .....	339,290	293,930
Lemons .....	938,030	852,750
Oranges .....	3,148,840	2,370,470
Tangerines and mandarins .....	664,060	820,100
<b>Noncitrus</b>		
Apples, commercial .....	4,585,820	
Apricots .....	32,840	
Avocados .....		
Blueberries, Cultivated .....		
Blueberries, Wild (Maine) .....		
Cherries, Sweet .....	249,480	
Cherries, Tart .....	103,960	
Coffee (Hawaii) .....	11,790	
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 .....		
<b>Nuts and miscellaneous</b>		
Almonds, shelled (California) .....	1,179,340	
Hazelnuts, in-shell (Oregon) .....	61,690	
Macadamias (Hawaii) .....		
Pecans, in-shell .....	124,520	
Pistachios (California) .....		
Walnuts, in-shell (California) .....	653,170	

<sup>1</sup> Production years are 2021-2022 and 2022-2023.

Percent of Normal Precipitation (%)  
1/1/2023 – 1/31/2023



Departure from Normal Temperature (F)  
1/1/2023 – 1/31/2023



## January Weather Summary

Three weeks of frenetically stormy weather from the Sierra Nevada to the western slopes of the central Rockies ensured above-average seasonal snowfall, even if dry weather were to return for the final 2 months of the 2022-23 winter wet season. The extraordinary stormy spell, which had begun in late December, helped to fill some smaller reservoirs but also caused extensive damage, primarily in California due to river flooding and debris flows. Some of the worst large-scale flooding occurred in the heavily agricultural Salinas Valley, which endured breached levees and inundation of fields, roads, and farm infrastructure and equipment.

Given the cold (monthly temperatures locally averaging more than 4°F below normal), stormy weather in the West, almost all the high-elevation precipitation went into building snowpack. According to the California Department of Water Resources, the average water equivalency of the Sierra Nevada snowpack stood near 34 inches at month's end, more than twice the late-January normal and nearly 130 percent of the typical end-of-season average.

Periodically significant precipitation affected other areas of the West, although January totals were below average in parts of the southern Rockies and the Northwest. Farther east, another stripe of heavy precipitation extended across the Plains and upper Midwest, with some of the heaviest snow blanketing Nebraska and portions of neighboring states. In fact, it was the snowiest January on record in Nebraska locations such as Valentine (28.3 inches) and North Platte (22.6 inches). A continuous snow cover has remained on the ground in parts of the upper Midwest since November.

Most other areas of the Plains also received periods of beneficial January precipitation, although winter wheat continued to exhibit signs of stress due to poor crop establishment and effects from episodic cold waves. An Arctic outbreak in late January delivered sub-0°F temperatures as far south as the central High Plains—but was neither as long-lasting nor severe as a December cold blast. By late January, more than one-third of the winter wheat was rated in very poor to poor condition in Texas (52 percent), Kansas (47 percent), Nebraska (40 percent), and Oklahoma (34 percent). Nearly one-quarter of the wheat—24 percent apiece—was rated very poor to poor in Colorado and South Dakota. Among those six states, only Colorado exhibited a significant improvement in condition, as compared with late-November 2022.

Farther east, mild, wet weather dominated areas east of the Mississippi River, with monthly temperatures averaging at least 4 to 8°F above normal in many locations. In fact, it was the warmest January on record in numerous Northeastern communities. Exceptions to the Eastern wetness included southeastern Louisiana and peninsular Florida. Mid-winter snow was notably scarce in the middle Atlantic States, with New York City setting a record for its latest first accumulation of the season—0.4 inch on February 1. Farther south, however, spring-like thunderstorms spawned dozens of tornadoes, especially from January 2-4, 11-12, and 24-25. Tornadoes were reported as far north as central Illinois (on January 3) and eastern Iowa (on January 16). The first tornado-related deaths of the year occurred on January 12, with seven fatalities in Autauga County, Alabama, and one in Spalding County, Georgia. The Nation's preliminary monthly count of 168 tornadoes was second only to 214 in January 1999.

Given the overarching storminess across much of the country, national drought coverage continued to shrink. During the 5-week period ending January 31, drought coverage in the contiguous United States fell exactly 7 percentage points from 49.65 to 42.65 percent, according to the *Drought Monitor*. In the 11-state Western region, coverage of extreme to exceptional drought (D3 to D4) fell by more than half, from 14.08 to 6.38 percent, during the same 5-week period. However, in the Plains' core drought area, D3 to D4 coverage on January 31 stood at 45 percent in Nebraska and 56 percent in Kansas and Oklahoma.

## January Agricultural Summary

January was warmer than normal for the eastern half of the Nation. Most of the areas east of the Mississippi River recorded temperatures 6°F or more above normal. In contrast, much of the western half of the Nation recorded cooler than normal temperatures. Parts of the Great Basin and the Rockies recorded temperatures 6°F or more below normal for January. Much of the Nation recorded higher than average amounts of precipitation. Large parts of California, the Upper Midwest, Nevada, Central Plains, Rockies, and Southwest recorded at least twice the normal amount of precipitation. Parts of California received at least 18 inches of precipitation during the month. Areas in the Northeast and

South also recorded at least twice the normal amount of precipitation. In contrast, most of Florida, the Pacific Northwest, Northern Plains, and Southern Plains were drier than normal for the month.

## **Crop Comments**

**Grapefruit:** The United States 2022-2023 grapefruit crop is forecast at 324,000 tons, unchanged from the previous forecast but down 13 percent from last season's final utilization. The Florida forecast, at 1.50 million boxes (64,000 tons), is unchanged from previous forecast but down 55 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 up 23 percent from the last season's final utilization. The Florida tangerine and mandarin forecast, at 500,00 boxes (24,000 tons), unchanged from last forecast but down 33 percent from last year. The California tangerine and mandarin forecast was carried forward from the previous forecast.

**Sugarcane:** Production of sugarcane for sugar and seed is forecast at 35.0 million tons, up 1 percent from the previous forecast and up 7 percent from last season. Producers intend to harvest 927,600 acres for sugar and seed during the 2022 crop year, down slightly from last month and down 1 percent from 2021. Yields for sugar and seed are expected to average 37.7 tons per acre, up 0.4 ton from last month and up 2.6 tons from last season.

## Statistical Methodology

**Survey procedures:** The orange objective yield survey for the February 1 forecast was conducted in Florida. In August and September 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 combined with the previous components are used to develop the current forecast of production. California and Texas conduct grower survey 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 February 1 forecast.

**Revision policy:** The February 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 February 1 production forecasts, the "Root Mean Square Error," a statistical measure based on past performance, is computed. The deviation between the February 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. For example, the "Root Mean Square Error" for the February 1 orange production forecast is 5.7 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 5.7 percent. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 9.9 percent.

Also, shown in the following table is a 20-year record for selected crops of the differences between the February 1 forecast and the final estimate. Using oranges again as an example, changes between the February 1 forecast and the final estimates during the past 20 years have averaged 308,000 tons, ranging from 43,000 tons to 843,000 tons. The February 1 forecast for oranges has been below the final estimate 7 times and above 13 times. This does not imply that the February 1 orange forecast this year is likely to understate or overstate final production.

### Reliability of February 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 <sup>1</sup> .....	5.7	9.9	308	43	843	7	13
Sugarcane .....	3.0	5.2	1	(Z)	3	4	16

(Z) Less than half of the unit shown.

<sup>1</sup> 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](mailto:nass@usda.gov)

Lance Honig, Chief, Crops Branch .....	(202) 720-2127
Chris Hawthorn, Head, Field Crops Section .....	(202) 720-2127
Irwin Anolik – Crop Weather .....	(202) 720-7621
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
Lihan Wei – Peanuts, Rice .....	(202) 720-7688
Fleming Gibson, Head, Fruits, Vegetables and Special Crops Section.....	(202) 720-2127
Deonne Holiday – Almonds, Asparagus, Carrots, Coffee, Cranberries, Onions, Plums, Prunes, Sweet Corn, Tobacco .....	(202) 720-4288
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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