Crop Production

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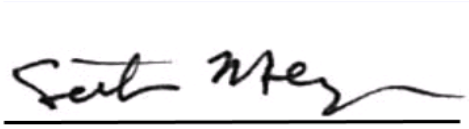
Orange Production Up 2 Percent from December Forecast

The United States all orange forecast for the 2021-2022 season is 3.92 million tons, up 2 percent from the previous forecast but down 11 percent from the 2020-2021 final utilization. The Florida all orange forecast, at 44.5 million boxes (2.00 million tons), is down 3 percent from the previous forecast and down 16 percent from last season's final utilization. In Florida, early, midseason, and Navel varieties are forecast at 17.5 million boxes (788,000 tons), down 3 percent from the previous forecast and down 23 percent from last season's final utilization. The Florida Valencia orange forecast, at 27.0 million boxes (1.22 million tons), is down 4 percent from the previous forecast and down 10 percent from last season's final utilization.

The California all orange forecast is 47.6 million boxes (1.90 million tons), is up 9 percent from previous forecast but down 5 percent from last season's final utilization. The California Navel orange forecast is 39.0 million boxes (1.56 million tons), is up 11 percent from the previous forecast but down 4 percent from last season's final utilization. The California Valencia orange forecast is 8.60 million boxes (344,000 tons), is up 1 percent from the previous forecast but down 9 percent from last season's final utilization. The Texas all orange forecast, at 400,000 boxes (17,000 tons), is down 27 percent from the previous forecast and down 62 percent from last season's final utilization.

This report was approved on January 12, 2022.



Secretary of Agriculture
Designate
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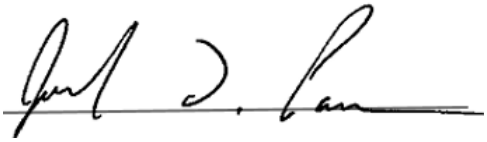

Agricultural Statistics Board
Chairperson
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Contents

Utilized Production of Citrus Fruits by Crop – States and United States: 2020-2021 and Forecasted January 1, 2022

[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	
	2020-2021	2021-2022	2020-2021	2021-2022
	(1,000 boxes)	(1,000 boxes)	(1,000 tons)	(1,000 tons)
Oranges				
California, all	50,100	47,600	2,004	1,904
Early, mid, and Navel [2]	40,600	39,000	1,624	1,560
Valencia	9,500	8,600	380	344
Florida, all	52,800	44,500	2,377	2,003
Early, mid, and Navel [2]	22,700	17,500	1,022	788
Valencia	30,100	27,000	1,355	1,215
Texas, all	1,050	400	45	17
Early, mid, and Navel [2]	1,000	300	43	13
Valencia	50	100	2	4
United States, all	103,950	92,500	4,426	3,924
Early, mid, and Navel [2]	64,300	56,800	2,689	2,361
Valencia	39,650	35,700	1,737	1,563
Grapefruit				
California	3,900	3,500	156	140
Florida	4,100	4,100	174	174
Texas	2,400	1,600	96	64
United States	10,400	9,200	426	378
Tangerines and mandarins [3]				
California	28,100	21,000	1,124	840
Florida	890	800	42	38
United States	28,990	21,800	1,166	878
Lemons				
Arizona	800	1,400	32	56
California	21,300	23,000	852	920
United States	22,100	24,400	884	976

[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, 2020 and 2021

State	May 1		December 1	
	2020	2021	2020	2021
	(1,000 tons)	(1,000 tons)	(1,000 tons)	(1,000 tons)
Alabama	120	300	1,800	1,550
Arizona	45	20	300	180
Arkansas	340	240	1,800	1,700
California	420	220	1,640	1,200
Colorado	410	230	1,700	2,000
Connecticut	8	6	30	38
Delaware	2	2	10	10
Florida	80	60	520	460
Georgia	170	290	1,210	1,260
Idaho	490	410	2,500	2,350
Illinois	220	270	1,000	950
Indiana	140	150	800	900
Iowa	510	430	2,430	3,120
Kansas	1,420	910	5,000	5,000
Kentucky	625	950	3,825	3,750
Louisiana	120	160	660	640
Maine	30	21	150	105
Maryland	60	57	290	275
Massachusetts	8	9	60	34
Michigan	220	190	900	1,100
Minnesota	360	400	2,240	1,460
Mississippi	130	170	1,050	1,000
Missouri	1,410	1,000	6,000	5,700
Montana	1,040	970	4,800	2,900
Nebraska	1,380	1,000	4,200	4,650
Nevada	80	90	400	490
New Hampshire	7	5	36	42
New Jersey	29	10	90	85
New Mexico	50	40	210	240
New York	350	290	1,000	1,700
North Carolina	180	190	1,120	950
North Dakota	1,290	950	3,700	2,100
Ohio	220	210	1,300	1,400
Oklahoma	1,350	1,150	4,100	4,260
Oregon	400	290	1,600	920
Pennsylvania	350	275	1,410	1,440
Rhode Island	1	1	4	5
South Carolina	75	125	400	450
South Dakota	2,350	2,200	5,800	3,300
Tennessee	425	570	2,930	3,000
Texas	1,950	1,200	6,400	8,200
Utah	300	170	1,250	1,000
Vermont	36	35	145	157
Virginia	310	480	2,050	1,800
Washington	160	220	1,100	1,100
West Virginia	95	145	770	790
Wisconsin	310	570	1,790	2,105
Wyoming	350	325	1,500	1,150
United States	20,426	18,006	84,020	79,016

Crop Area Planted and Harvested, Yield, and Production in Domestic Units – United States: 2021 and 2022

[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. Blank data cells indicate estimation period has not yet begun]

Crop	Area planted		Area harvested	
	2021	2022	2021	2022
	(1,000 acres)	(1,000 acres)	(1,000 acres)	(1,000 acres)
Grains and hay				
Barley	2,660		1,948	
Corn for grain [1]	93,357		85,388	
Corn for silage	(NA)		6,481	
Hay, all	(NA)		50,736	
Alfalfa	(NA)		15,246	
All other	(NA)		35,490	
Oats	2,550		650	
Proso millet	725		662	
Rice	2,532		2,488	
Rye	2,133		294	
Sorghum for grain [1]	7,305		6,490	
Sorghum for silage	(NA)		331	
Wheat, all	46,703		37,163	
Winter	33,648	34,397	25,464	
Durum	1,635		1,534	
Other spring	11,420		10,165	
Oilseeds				
Canola	2,152.0		2,089.0	
Cottonseed	(X)		(X)	
Flaxseed	325		268	
Mustard seed	103.0		89.3	
Peanuts	1,585.2		1,545.0	
Rapeseed	14.3		12.5	
Safflower	152.0		135.0	
Soybeans for beans	87,195		86,332	
Sunflower	1,288.5		1,243.8	
Cotton, tobacco, and sugar crops				
Cotton, all	11,219.5		9,968.3	
Upland	11,093.0		9,844.5	
American Pima	126.5		123.8	
Sugarbeets	1,160.0		1,107.6	
Sugarcane	(NA)		937.5	
Tobacco	(NA)		218.9	
Dry beans, peas, and lentils				
Chickpeas	368.5		351.0	
Dry edible beans	1,394.0		1,335.6	
Dry edible peas	977.0		834.0	
Lentils	708.0		549.0	
Potatoes and miscellaneous				
Hops	(NA)		60.9	
Maple syrup	(NA)		(NA)	
Mushrooms	(NA)		(NA)	
Peppermint oil	(NA)		44.0	
Potatoes	943.0		935.7	
Spearmint oil	(NA)		14.9	

See footnote(s) at end of table.

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Crop Area Planted and Harvested, Yield, and Production in Domestic Units – United States: 2021 and 2022 (continued)

[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. Blank data cells indicate estimation period has not yet begun]

Crop	Yield per acre		Production	
	2021	2022	2021	2022
			(1,000)	(1,000)
Grains and hay				
Barley ..... bushels	60.4		117,673	
Corn for grain ..... bushels	177.0		15,115,170	
Corn for silage ..... tons	20.1		130,317	
Hay, all ..... tons	2.37		120,196	
Alfalfa ..... tons	3.23		49,245	
All other ..... tons	2.00		70,951	
Oats ..... bushels	61.3		39,836	
Proso millet ..... bushels	23.2		15,376	
Rice [2] ..... cwt	7,709		191,796	
Rye ..... bushels	33.4		9,808	
Sorghum for grain ..... bushels	69.0		447,810	
Sorghum for silage ..... tons	15.4		5,083	
Wheat, all ..... bushels	44.3		1,645,764	
Winter ..... bushels	50.2		1,277,365	
Durum ..... bushels	24.3		37,259	
Other spring ..... bushels	32.6		331,140	
Oilseeds				
Canola ..... pounds	1,302		2,720,550	
Cottonseed ..... tons	(X)		5,377.0	
Flaxseed ..... bushels	10.1		2,708	
Mustard seed ..... pounds	491		43,834	
Peanuts ..... pounds	4,135		6,389,300	
Rapeseed ..... pounds	1,809		22,616	
Safflower ..... pounds	1,001		135,175	
Soybeans for beans ..... bushels	51.4		4,435,232	
Sunflower ..... pounds	1,530		1,902,985	
Cotton, tobacco, and sugar crops				
Cotton, all [2] ..... bales	849		17,624.0	
Upland [2] ..... bales	841		17,257.0	
American Pima [2] ..... bales	1,423		367.0	
Sugarbeets ..... tons	33.2		36,751	
Sugarcane ..... tons	35.2		33,030	
Tobacco ..... pounds	2,183		477,973	
Dry beans, peas, and lentils				
Chickpeas [2] ..... cwt	815		2,861	
Dry edible beans [2] ..... cwt	1,701		22,721	
Dry edible peas [2] ..... cwt	1,025		8,549	
Lentils [2] ..... cwt	606		3,327	
Potatoes and miscellaneous				
Hops ..... pounds	1,900		115,630.9	
Maple syrup ..... gallons	(NA)		3,424	
Mushrooms ..... pounds	(NA)		757,987	
Peppermint oil ..... pounds	104		4,566	
Potatoes ..... cwt	438		409,671	
Spearmint oil ..... pounds	119		1,775	

(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: 2021 and 2022

[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. Blank data cells indicate estimation period has not yet begun]

Crop	Area planted		Area harvested	
	2021	2022	2021	2022
	(hectares)	(hectares)	(hectares)	(hectares)
Grains and hay				
Barley	1,076,480		788,340	
Corn for grain [1]	37,780,640		34,555,670	
Corn for silage	(NA)		2,622,800	
Hay, all [2]	(NA)		20,532,350	
Alfalfa	(NA)		6,169,900	
All other	(NA)		14,362,450	
Oats	1,031,960		263,050	
Proso millet	293,400		267,900	
Rice	1,024,680		1,006,870	
Rye	863,200		118,980	
Sorghum for grain [1]	2,956,260		2,626,440	
Sorghum for silage	(NA)		133,950	
Wheat, all [2]	18,900,240		15,039,490	
Winter	13,617,010	13,920,120	10,305,030	
Durum	661,670		620,790	
Other spring	4,621,560		4,113,670	
Oilseeds				
Canola	870,890		845,400	
Cottonseed	(X)		(X)	
Flaxseed	131,520		108,460	
Mustard seed	41,680		36,140	
Peanuts	641,510		625,250	
Rapeseed	5,790		5,060	
Safflower	61,510		54,630	
Soybeans for beans	35,286,940		34,937,700	
Sunflower	521,440		503,350	
Cotton, tobacco, and sugar crops				
Cotton, all [2]	4,540,420		4,034,070	
Upland	4,489,230		3,983,970	
American Pima	51,190		50,100	
Sugarbeets	469,440		448,230	
Sugarcane	(NA)		379,400	
Tobacco	(NA)		88,600	
Dry beans, peas, and lentils				
Chickpeas	149,130		142,050	
Dry edible beans	564,140		540,500	
Dry edible peas	395,380		337,510	
Lentils	286,520		222,170	
Potatoes and miscellaneous				
Hops	(NA)		24,630	
Maple syrup	(NA)		(NA)	
Mushrooms	(NA)		(NA)	
Peppermint oil	(NA)		17,810	
Potatoes	381,620		378,670	
Spearmint oil	(NA)		6,030	

See footnote(s) at end of table.

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Crop Area Planted and Harvested, Yield, and Production in Metric Units – United States: 2021 and 2022 (continued)

[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. Blank data cells indicate estimation period has not yet begun]

Crop	Yield per hectare		Production	
	2021	2022	2021	2022
	(metric tons)	(metric tons)	(metric tons)	(metric tons)
Grains and hay				
Barley	3.25		2,562,030	
Corn for grain	11.11		383,943,000	
Corn for silage	45.07		118,221,590	
Hay, all [2]	5.31		109,039,980	
Alfalfa	7.24		44,674,310	
All other	4.48		64,365,660	
Oats	2.20		578,220	
Proso millet	1.30		348,720	
Rice	8.64		8,699,720	
Rye	2.09		249,130	
Sorghum for grain	4.33		11,374,900	
Sorghum for silage	34.42		4,611,220	
Wheat, all [2]	2.98		44,790,360	
Winter	3.37		34,764,180	
Durum	1.63		1,014,020	
Other spring	2.19		9,012,150	
Oilseeds				
Canola	1.46		1,234,020	
Cottonseed	(X)		4,877,930	
Flaxseed	0.63		68,790	
Mustard seed	0.55		19,880	
Peanuts	4.64		2,898,140	
Rapeseed	2.03		10,260	
Safflower	1.12		61,310	
Soybeans for beans	3.45		120,707,230	
Sunflower	1.71		863,180	
Cotton, tobacco, and sugar crops				
Cotton, all [2]	0.95		3,837,170	
Upland	0.94		3,757,270	
American Pima	1.59		79,900	
Sugarbeets	74.38		33,339,950	
Sugarcane	78.98		29,964,310	
Tobacco	2.45		216,800	
Dry beans, peas, and lentils				
Chickpeas	0.91		129,770	
Dry edible beans	1.91		1,030,610	
Dry edible peas	1.15		387,780	
Lentils	0.68		150,910	
Potatoes and miscellaneous				
Hops	2.13		52,450	
Maple syrup	(NA)		17,120	
Mushrooms	(NA)		343,820	
Peppermint oil	0.12		2,070	
Potatoes	49.07		18,582,370	
Spearmint oil	0.13		810	

(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: 2021 and 2022

[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 2021-2022 season. Blank data cells indicate estimation period has not yet begun]

Crop	Production	
	2021	2022
Citrus [1]		
Grapefruit ..... 1,000 tons	426	378
Lemons ..... 1,000 tons	884	976
Oranges ..... 1,000 tons	4,426	3,924
Tangerines and mandarins ..... 1,000 tons	1,166	878
Noncitrus		
Apples, commercial ..... million pounds	10,525.0	
Apricots ..... tons	55,500	
Avocados ..... tons		
Blueberries, Cultivated ..... 1,000 pounds		
Blueberries, Wild (Maine) ..... 1,000 pounds		
Cherries, Sweet ..... tons	369,000	
Cherries, Tart ..... million pounds	142.0	
Coffee (Hawaii) ..... 1,000 pounds		
Cranberries ..... barrel	7,900,000	
Dates ..... tons		
Grapes ..... tons	6,470,000	
Kiwifruit (California) ..... tons		
Nectarines (California) ..... tons		
Olives (California) ..... tons		
Papayas (Hawaii) ..... 1,000 pounds		
Peaches ..... tons	696,500	
Pears ..... tons	670,000	
Plums (California) ..... tons		
Prunes (California) ..... tons		
Raspberries, all ..... 1,000 pounds		
Strawberries ..... 1,000 cwt		
Nuts and miscellaneous		
Almonds, shelled (California) ..... 1,000 pounds	2,800,000	
Hazelnuts, in-shell (Oregon) ..... tons		
Macadamias (Hawaii) ..... 1,000 pounds		
Pecans, in-shell ..... 1,000 pounds	258,000	
Pistachios (California) ..... 1,000 pounds		
Walnuts, in-shell (California) ..... tons	670,000	

[1] Production years are 2020-2021 and 2021-2022.

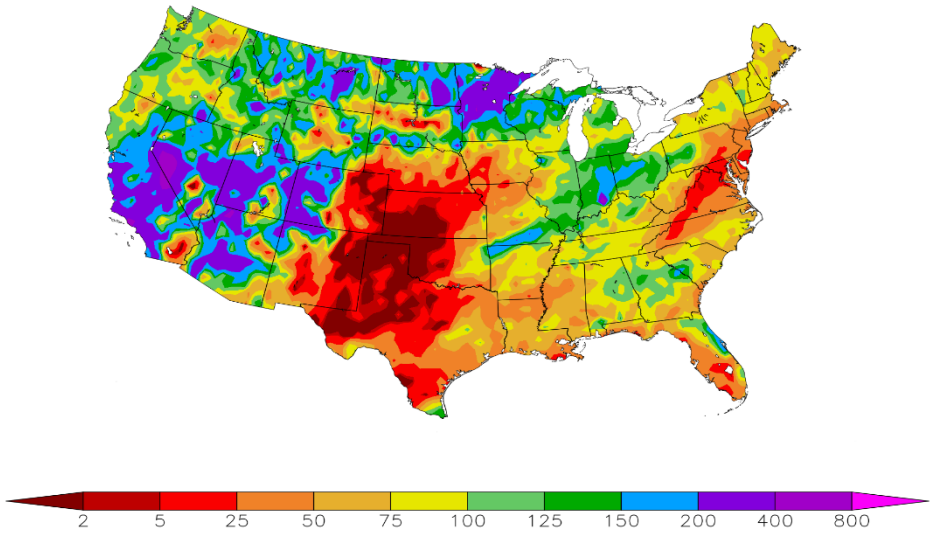
Fruits and Nuts Production in Metric Units – United States: 2021 and 2022

[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 2021-2022 season. Blank data cells indicate estimation period has not yet begun]

Crop	Production	
	2021	2022
	(metric tons)	(metric tons)
Citrus [1]		
Grapefruit	386,460	342,920
Lemons	801,950	885,410
Oranges	4,015,200	3,559,790
Tangerines and mandarins	1,057,780	796,510
Noncitrus		
Apples, commercial	4,774,060	
Apricots	50,350	
Avocados		
Blueberries, Cultivated		
Blueberries, Wild (Maine)		
Cherries, Sweet	334,750	
Cherries, Tart	64,410	
Coffee (Hawaii)		
Cranberries	358,340	
Dates		
Grapes	5,869,490	
Kiwifruit (California)		
Nectarines (California)		
Olives (California)		
Papayas (Hawaii)		
Peaches	631,850	
Pears	607,810	
Plums (California)		
Prunes (California)		
Raspberries, all		
Strawberries		
Nuts and miscellaneous		
Almonds, shelled (California)	1,270,060	
Hazelnuts, in-shell (Oregon)		
Macadamias (Hawaii)		
Pecans, in-shell	117,030	
Pistachios (California)		
Walnuts, in-shell (California)	607,810	

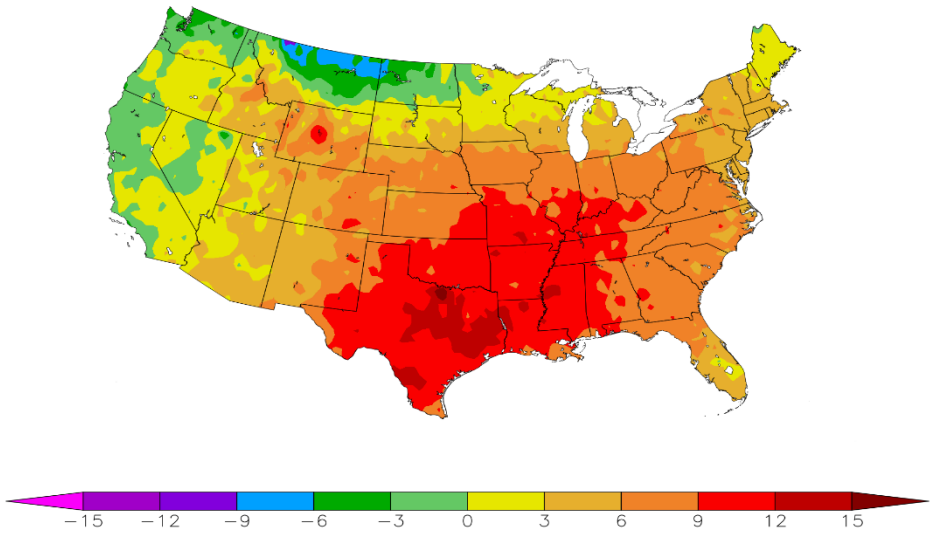
[1] Production years are 2020-2021 and 2021-2022.

Percent of Normal Precipitation (%)
12/1/2021 – 12/31/2021



NOAA Regional Climate Centers

Departure from Normal Temperature (F)
12/1/2021 – 12/31/2021



NOAA Regional Climate Centers

December Weather Summary

December 2021 featured some notable weather extremes. In fact, monthly temperatures averaged at least 10°F above normal at numerous locations from the southern Plains to the Mississippi Delta, setting records for the warmest-ever December. That warmth, along with frigid conditions (locally more than 5°F below normal) near the Canadian border from the Pacific Northwest to the northern Plains, fueled an active storm track and periods of severe thunderstorms and heavy precipitation. The month's first significant severe-weather outbreak occurred across the mid-South and lower Midwest on December 5-6. Less than a week later, on December 10, the deadliest December tornado in the Nation's history—an EF-4 with winds estimated near 190 mph—traveled nearly 166 miles, starting in Obion County, Tennessee, and devastating the Kentucky communities of Mayfield and Dawson Springs. Nearly five dozen deaths occurred during that tornado's rampage, according to preliminary reports, while dozens of additional tornadoes—some with fatalities—swarmed other parts of the mid-South and lower Midwest.

A mid-December wind and dust storm, which raked the central and southern Plains with wind gusts of 75 to 100 mph or higher, further increased concerns regarding the overwintering wheat crop. By the end of December, only 33 percent of Kansas' winter wheat was rated in good to excellent condition, down from 62 percent in late-November 2021. Similarly, the portion of Nebraska's wheat rated good to excellent dropped from 64 to 39 percent between November 28 and December 31. Across the southern High Plains, Texas communities such as Amarillo and Borger ended the year on an 80-day streak (October 13 – December 31) without any precipitation—not even a trace. Lingering drought across the northern High Plains also maintained stress on winter wheat; in Montana, 71 percent of the crop was rated very poor to poor at year's end. The Plains' drought was also reflected in moisture shortages; at the end of December, among reporting states, topsoil moisture was rated at least one-half very short to short in Colorado (84 percent), New Mexico (80 percent), Montana (77 percent), Kansas (72 percent), Nebraska (68 percent), and North Dakota (50 percent). Toward month's end, wind-driven wildfires near Boulder, Colorado—including the 6,219-acre Marshall Fire—swept through thousands of acres of drought-cured brush, timber, and grass, as well as portions of the communities of Louisville and Superior, destroying as many as 1,000 structures.

In contrast, consistent and widespread storminess delivered December drought relief—in the form of improvements in soil moisture and mountain snowpack—west of the Rockies. Although drought coverage in the 11-state Western region decreased only 5 percentage points (from 94 to 89 percent) between November 30, 2021, and January 4, 2022, there was a substantial decrease in the higher-end drought categories. For example, Western coverage of extreme to exceptional drought (D3 to D4) during that 5-week period decreased from 44 to 24 percent, according to the Drought Monitor. Despite the promising start to the Western winter wet season, additional storminess will be needed in early 2022 to sustain the recovery from a multi-year drought. By December 31, the average water equivalency of the high-elevation Sierra Nevada snowpack stood at just over 15 inches, more than 150 percent of average for the date, but only 55 percent of the typical end-of-season accumulation. In addition, many large reservoirs—including Lake Mead on the Colorado River—remained at historically low levels and will be unlikely to significantly recover, even with ongoing wetness.

December Agricultural Summary

Most of the Nation was warmer than average during the month of December. Much of the Mississippi Valley, southern Ohio Valley, and Southern Plains were 9°F or more above normal for the month. In contrast, large parts of the Pacific Northwest, Northern Plains, and Northern Rockies were cooler than normal. Much of northern Montana recorded temperatures 6°F or more below normal. December was drier than normal for much of the Delta, Gulf Coast, Mid-Atlantic, Northeast, Central Plains, and Southern Plains. In contrast, large parts of the Northern Plains, Rockies, and Southwest received twice the normal amount of precipitation for the month.

Nationwide, 92 percent of the winter wheat acreage had emerged by November 28, equal to last year but 1 percentage point ahead of the 5-year average. As of November 28, forty-four percent of the 2022 winter wheat acreage was reported in good to excellent condition, 2 percentage points below the same time last year.

By November 28, eighty-five percent of the Nation's cotton acreage had been harvested, 2 percentage points ahead of last year and 6 percentage points ahead of the 5-year average.

Ninety-seven percent of the 2021 sorghum acreage had been harvested by November 28, two percentage points behind last year but 1 percentage point ahead of the 5-year average.

Ninety-six percent of the Nation's peanut acreage had been harvested as of November 28, equal to both last year and the 5-year average.

By November 28, ninety-four percent of the Nation's sunflower crop had been harvested, 2 percentage points behind last year but 8 percentage points ahead of the 5-year average.

Crop Comments

Grapefruit: The United States 2021-2022 grapefruit crop is forecast at 378,000 tons, down 17 percent from the previous forecast and down 11 percent from last season's final utilization. The Florida forecast, at 4.10 million boxes (174,000 tons), is unchanged from previous forecast and unchanged from the last season. California's grapefruit forecast at 3.50 million boxes (140,000 tons), is down 10 percent from the previous forecast and down 10 percent from last season. The Texas grapefruit forecast is down 48 percent from the previous forecast and down 33 percent from the 2020-2021 season.

Lemons: The 2021-2022 United States lemon crop is forecast at 976,000 tons, up 9 percent from previous forecast and up 10 percent last season's final utilization. The California forecast, at 23.0 million boxes (920,000 tons), is up 10 percent from the previous forecast and up 8 percent from the 2020-2021 season. The Arizona forecast, at 1.40 million boxes (56,000 tons), is up 8 percent from previous forecast and up 75 percent from last year.

Tangerines and mandarins: The United States tangerine and mandarin crop is forecast at 878,000 tons, down 1 percent from the previous forecast and down 25 percent from the last season's final utilization. The California tangerine and mandarin forecast, at 21.0 million boxes (840,000 tons), is unchanged from the previous forecast but down 25 percent from last year.

Hay stocks on farms: All hay stored on United States farms as of December 1, 2021 totaled 79.0 million tons, down 6 percent from December 1, 2020, which is the third lowest December 1 stocks since 1977. Disappearance from May 1, 2021 - December 1, 2021 totaled 59.2 million tons, down 6 percent from the same period in 2020.

Record low December 1 hay stock levels were estimated in Maine, Massachusetts, Minnesota, North Dakota, and Oregon.

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 September. 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 5.1 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 5.1 percent. Chances are 9 out of 10 (90 percent confidence level) that the difference will not exceed 8.8 percent.

Changes between the January 1 orange forecast and the final estimates during the past 20 years have averaged 280,000 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	5.1	8.8	280	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 – 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

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- Robert Little – Apricots, Dry Beans, Lettuce, Macadamia, Maple Syrup, Nectarines, Pears, Snap Beans, Spinach, Tomatoes ..... (202) 720-3250
- Deonne Holiday – Almonds, Apples, Asparagus, Carrots, Coffee, Onions, Plums, Prunes, Sweet Corn, Tobacco ..... (202) 720-4288
- Krishna Rizal – Artichokes, Cauliflower, Celery, Grapefruit, Garlic, Hazelnuts, Kiwifruit, Lemons, Mandarins and tangerines, Mint, Mushrooms, Olives, Oranges ..... (202) 720-5412
- 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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