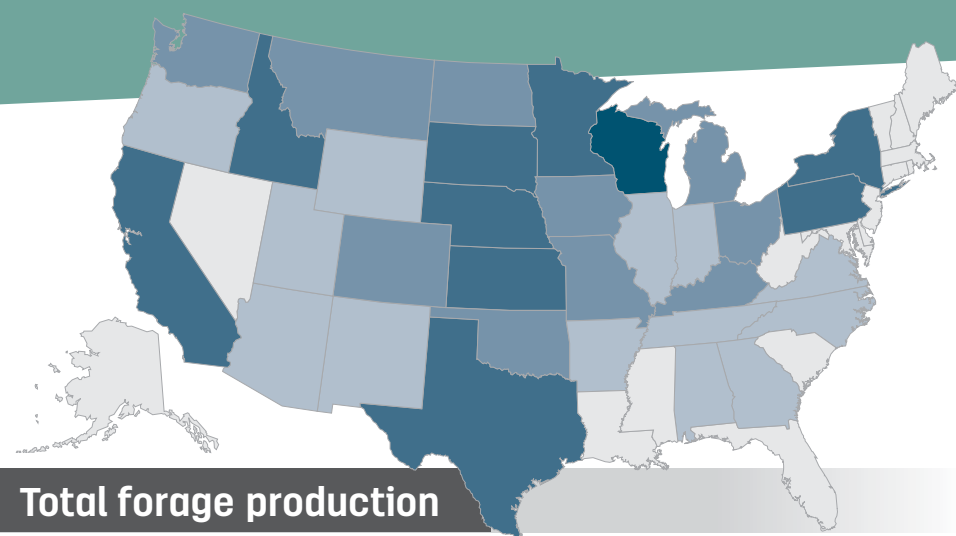


2020 U.S. forage statistics

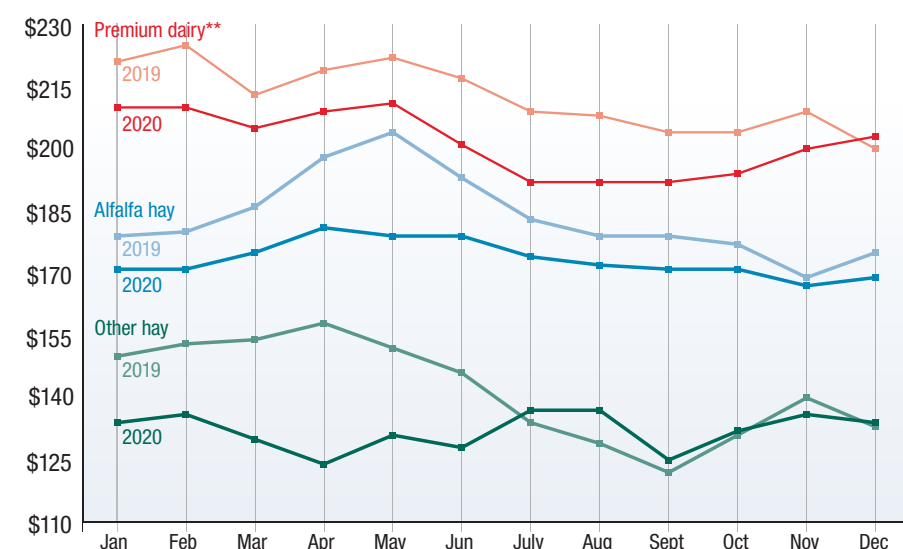
2020 national forage review



Total forage production is represented by the total of alfalfa, other hay, silage and greenchop production.

U.S. monthly average* prices, alfalfa, other and premium dairy hay

2019-20
(dollars per ton)

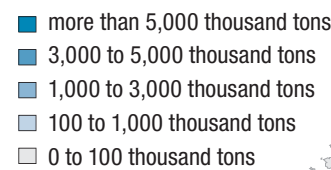


* Average prices paid in 27 major hay-producing states
**Weighted average price for Premium/Supreme alfalfa hay in the five largest milk-producing states: California, Idaho, New York, Texas and Wisconsin.

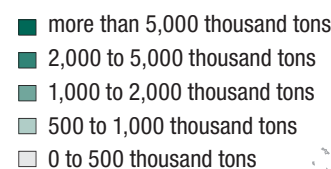
Source: USDA National Agricultural Statistics Service

For market reports updated monthly, visit progressiveforage.com/news/hay-market-reports

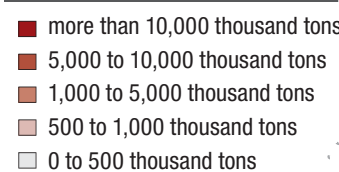
Total alfalfa hay production



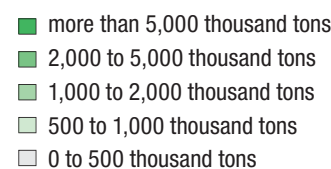
Total other hay production



Total corn silage production



Total greenchop production



Prices

Dry hay prices reported monthly by the USDA's National Ag Statistics Service started 2020 lower and remained there, although the 2019-20 price gap closed to end the year.

Regardless of hay category, 2020 annual average prices were down about \$10 per ton compared with 2019.* High-quality dairy alfalfa averaged \$201 per ton, alfalfa hay prices averaged \$173 per ton, and other hay averaged \$132 per ton. Prices for top-quality dairy hay did hit a seven-month high in December, as the U.S. dairy herd grew to 9.44 million cows, the most since 1995.

From peaks to valleys, 2020 monthly national average price changes were less volatile. After a \$35-per-ton range in 2019, 2020 alfalfa hay prices fluctuated just \$14 per ton. For other hay, the \$36-per-ton range in 2019 flattened to just \$13 per ton in 2020.

Production

Nationally, dry hay production in 2020 was generally marked by small declines in acreage and yield. Compared to a year earlier:

- **All dry hay:** 2020 production was estimated at 126.8 million tons, down about 1.5% from 2019. Area harvested, at 52.2 million acres, was down slightly. At 2.43 tons per acre, yield was down 0.03 ton.

- **Alfalfa and alfalfa mixtures:** 2020 harvested area and production, estimated at 16.2 million acres and 53.1 million tons, respectively, were each down 3% from 2019. Average yield was estimated at 3.27 tons per acre, down 0.01 ton from 2019. Record-high yields were achieved in California and Idaho.

- **All other hay:** 2020 production totaled 73.7 million tons, down less than 1% from 2019. Harvested area, at 36 million acres, was up 1%; average yield was estimated at 2.05 tons per acre, down 0.02 ton. This is the fifth-highest yield on record. Record-high yields were estimated in Alabama, Arizona, Georgia, Idaho, Nevada and Utah.

- **Total forage:** The USDA's total forage estimation program covers 17 states. Haylage and greenchop are converted to 13% moisture and combined with dry hay production to derive total forage estimates.

Forages were harvested from 30.9 million acres in those states, up 240,000 acres from 2019. At 2.66 tons per acre, average yield was down 2% – total production, at 82.3 million tons, was down 1%.

All haylage and greenchop forages were harvested from 4.25 million acres in 2020, down about 5.5%, but higher yields pushed total production to 29.34 million tons, up 1%.

- **Corn silage:** Production was estimated at just under 138 million tons for 2020, up 3% from 2019. Area harvested was 6.72 million acres, up 2%. The U.S. yield was estimated at 20.5 tons per acre, up 0.3 ton.

- **Sorghum silage:** Production was estimated at 3.13 million tons, down 22% from 2019. Area harvested was estimated at 239,000 acres, down 29%. Yield averaged 13.1 tons per acre, up 1.2 ton per acre.

- **New seedings of alfalfa and alfalfa mixtures:** Growers seeded 2.18 million acres of alfalfa and alfalfa mixtures during 2020, down 12% from 2019. About 80% of new seeding was concentrated in 22 of the 24 “major” dairy states.

- **Hay stocks:** Heading into the 2020 growing season, all dry hay inventories stored on U.S. farms on May 1, 2020, topped 20.4 million tons, the most for that date since 2017. With lower production, however, all dry hay stored on farms as of Dec. 1, 2020, totaled 84 million tons, down 1% from a year earlier. This marks the lowest inventory of hay for early December since the drought of 2012.

Hay “disappearance,” a proxy for use, was estimated at 64.1 million tons for the period Dec. 1, 2019 – May 1, 2020, down less than 1% from the same period a year earlier; and 63.2 million tons for the period May 1 – Dec. 1, 2020, up more than 6% compared to the same period a year earlier.

Exports

2020 hay exports weren't dramatically different than recent years, but those numbers may not adequately illustrate the challenges faced by exporters during the year.

For alfalfa hay, 2020 U.S. exports topped 2.5 million metric tons (MT) for a fourth consecutive year. China's prominence as a buyer grew: It

purchased more than 40% of all U.S. alfalfa hay exports during the year. Exports of other hay fell below 1.4 million MT for a third consecutive year and were near a 15-year low.

Monthly hay shipments – booked before the onset of the global COVID-19 pandemic – peaked in March-May. Beginning in July, shipments were lower than the same month a year earlier.

With hay export transactions traditionally based on personal relationships and the ability to see and smell hay quality, COVID-19 travel restrictions meant marketers had to send samples to potential customers and conduct business through email.

Port closings resulted in canceled services and unknown arrival and delivery times. Shipping lines lost less money if they diverted ships or dry docked them for repairs. Long delays due to shortages of vessel space, access to terminals, equipment and labor were common across all West Coast ports. With income differentials and loading delays, shipping lines sent empty containers back to Asia instead of waiting to fill them with U.S. ag commodities. Frustration over shipping was expected to continue well into 2021.

Weather and drought

Although not as wet as the spring of 2019, the percentage of hay acreage considered under drought conditions moved lower to start 2020. Regional spring flooding occurred, but the overall magnitude and impact was far less than a year earlier.

Drought areas began to expand in April. La Nina developed during the second half of the year, likely contributing to drought development in the U.S., particularly from the Pacific Coast to the High Plains. Nationally, acreage covered by drought nearly doubled in June through September.

The end of 2020 brought limited moisture relief, with about 33% of hay acreage considered under drought conditions. However, about 50% of all U.S. alfalfa-producing acreage – covering nearly the entire Western half of the country – remained under drought conditions at year's end, the most since the fourth quarter of 2012.

* Monthly average prices calculated by the USDA are across all hay qualities. Among major hay-producing states, the range of monthly prices can vary by \$100 per ton or more.



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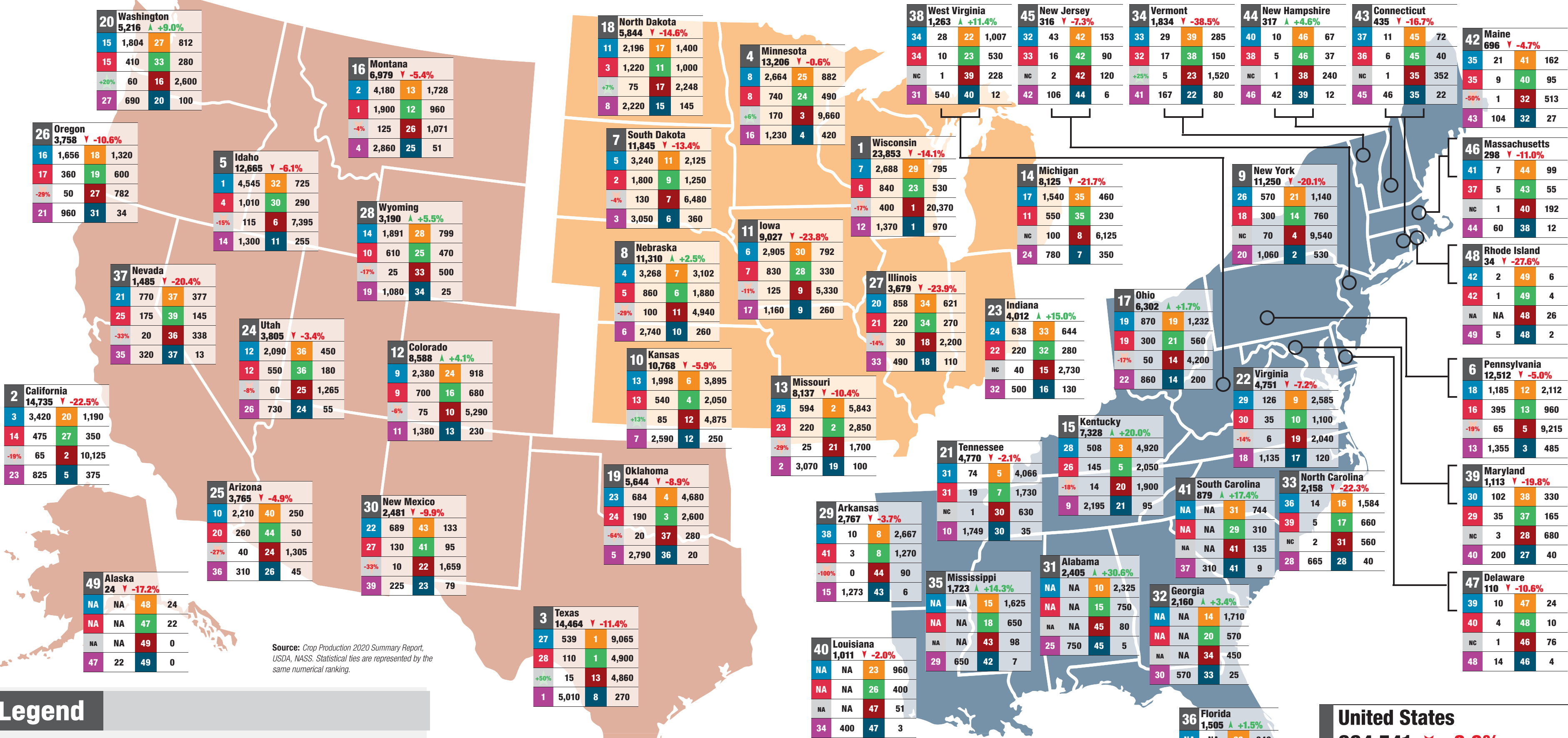
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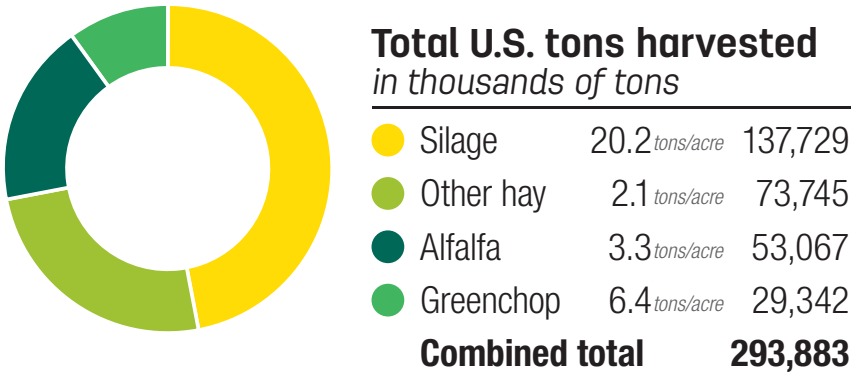
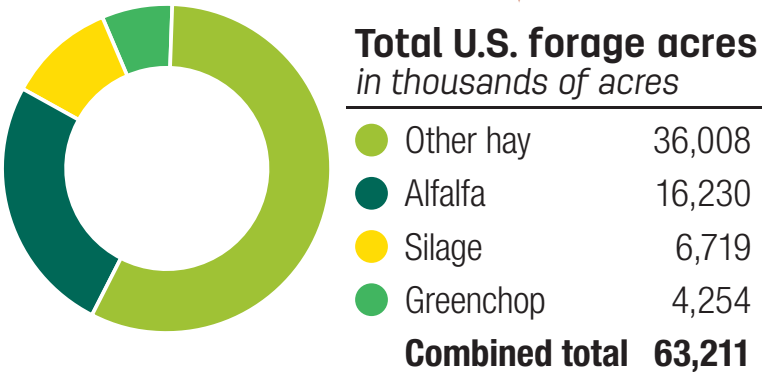


Source: Crop Production 2020 Summary Report, USDA, NASS. Statistical ties are represented by the same numerical ranking.

Legend

- State ranking-total forage production
- All forage production (in thousands of tons)
- State ranking-alfalfa yield
- Alfalfa yield (in thousands of tons)
- State ranking-alfalfa acres
- Alfalfa acres (in thousands of acres)
- Percentage increase/decrease of alfalfa new plantings
- Alfalfa new plantings (in thousands of acres)
- State ranking-total hay acres
- 2020 Total hay acres (in thousands of acres)
- Percentage increase/decrease in forage production 2019-2020
- State ranking-other hay yield
- Other hay yield (in thousands of tons)
- State ranking-other hay acres
- Other hay acres (in thousands of acres)
- State ranking-corn silage yield
- Corn silage yield (in thousands of tons)
- State ranking-corn silage acres
- Corn silage acres (in thousands of acres)

20	Washington	5,216	+9.0%
15	1,804	27	812
15	410	33	280
+20%	60	16	2,600
27	690	20	100



United States			
264,541	-8.0%	53,067	-3.3%
73,745	-0.3%	16,230	-3.1%
36,008	+0.9%	2,184	-11.5%
137,729	+3.7%	52,238	-0.4%
6,719	+2.0%		