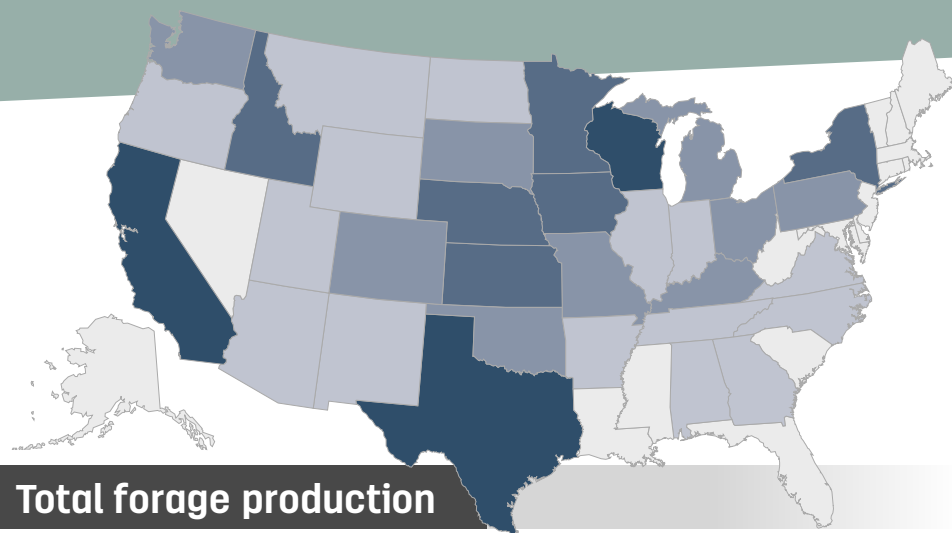


2021 U.S. forage statistics

2021 national forage review

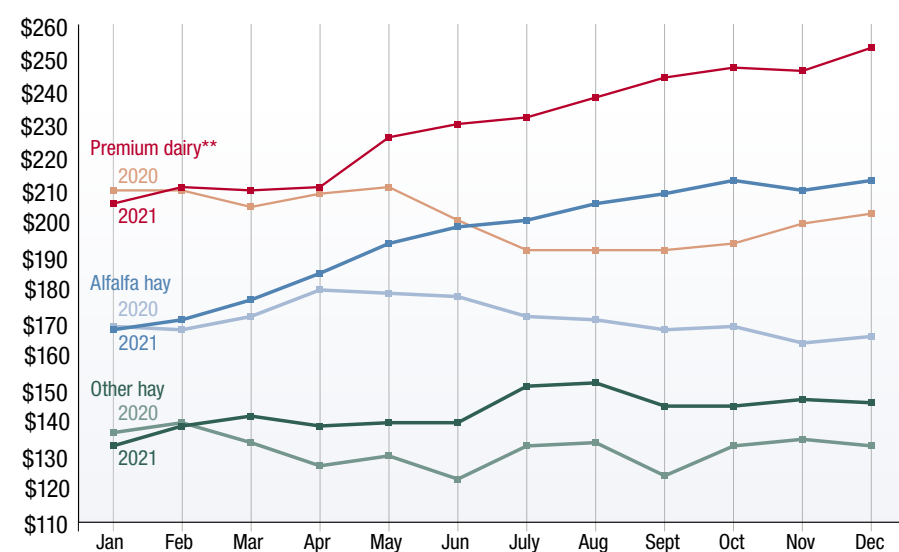


Total forage production

- More than 15,000 thousand tons
- 10,000 to 15,000 thousand tons
- 5,000 to 10,000 thousand tons
- 2,000 to 5,000 thousand tons
- 0 to 2,000 thousand tons

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 (dollars per ton) 2020-21



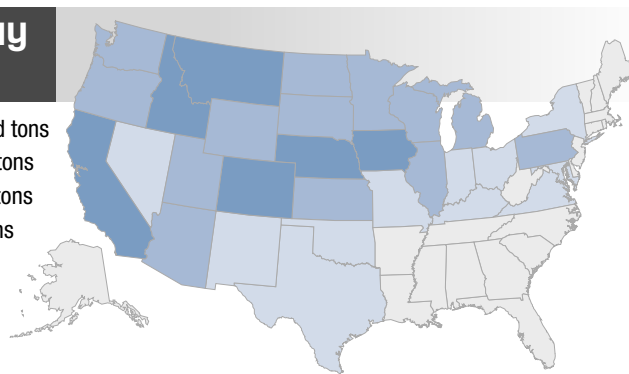
* Average prices paid in 27 major hay-producing states
 **Weighted average price for Premium/Supreme alfalfa hay in the five largest milk-producing states: California, Idaho, New York, Texas and Wisconsin.

Source: USDA National Agricultural Statistics Service

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

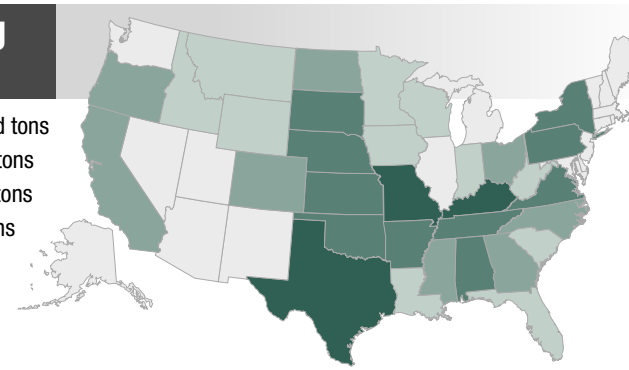
Total alfalfa hay production

- More than 5,000 thousand tons
- 3,000 to 5,000 thousand tons
- 1,000 to 3,000 thousand tons
- 100 to 1,000 thousand tons
- 0 to 100 thousand tons



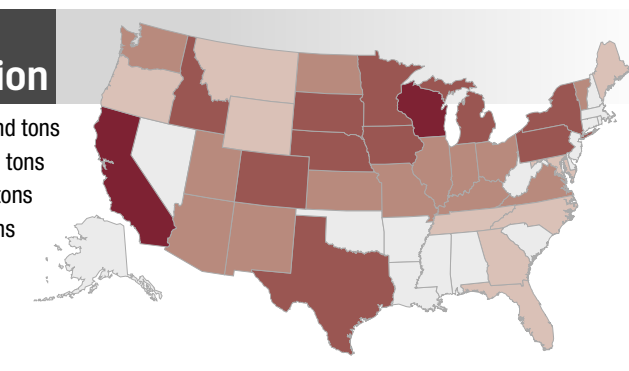
Total other hay production

- More than 5,000 thousand tons
- 2,000 to 5,000 thousand tons
- 1,000 to 2,000 thousand tons
- 500 to 1,000 thousand tons
- 0 to 500 thousand tons



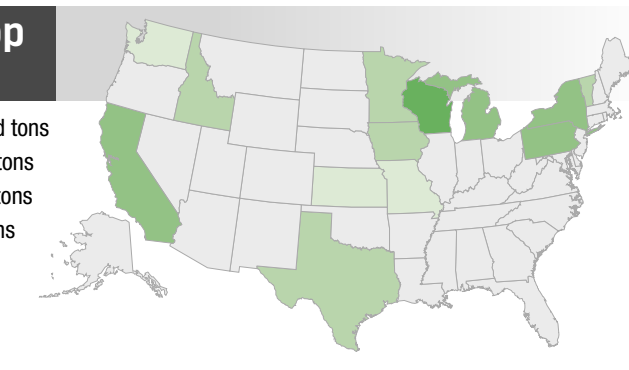
Total corn silage production

- More than 10,000 thousand tons
- 5,000 to 10,000 thousand tons
- 1,000 to 5,000 thousand tons
- 500 to 1,000 thousand tons
- 0 to 500 thousand tons



Total greenchop production

- More than 5,000 thousand tons
- 2,000 to 5,000 thousand tons
- 1,000 to 2,000 thousand tons
- 500 to 1,000 thousand tons
- 0 to 500 thousand tons



PRICES

After holding fairly steady in 2020, prices for all classes of dry hay escalated throughout 2021 (see **line graph**).

First reported in January 2019, the 2021 price for dairy-quality alfalfa hay in the largest dairy states peaked in December 2021 at \$253 per ton and ended the year averaging about \$230 per ton, up nearly \$28 from 2020's average.

Spurred on by domestic and export demand, 2021 U.S. prices for all alfalfa hay* averaged more than \$195 per ton, up \$24 from 2020. Monthly average prices peaked at \$213 per ton in October and December 2021, the highest since July 2014.

Prices for all other hay averaged \$143 per ton in 2021, up more than \$11 from 2020 and hitting a 27-month high of \$152 in August 2021.

PRODUCTION

Nationally, dry hay production in 2021 was marked by declines in both harvested acreage and yield. Compared to a year earlier:

- **All dry hay:** 2021 production was estimated at 120.2 million tons, down 5%. Area harvested was estimated at 50.7 million acres, down 3%; average yield, at 2.37 tons per acre, was down 0.06 ton. Record-low harvested acres were estimated in Minnesota, North Dakota, Oregon, Vermont and Wisconsin. Record-high yields were seen in California, Georgia and Nevada.

- **Alfalfa and alfalfa mixtures:** 2021 production was estimated at 49.2 million tons, down 7%. Harvested area, at 15.2 million acres, was down 6%; average yield was estimated at 3.23 tons per acre, down 0.04 ton. Record-high yields were estimated in California and Nevada.

- **All other hay:** 2021 production totaled 71 million tons, down 1%. Harvested area, at 35.5 million acres, was down 1%; average yield was estimated at 2 tons per acre, down 0.05 ton. Record-low harvested acres were estimated in California, Connecticut, Illinois and Oregon, while record-high harvested acres were estimated in Texas 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 30.5 million acres in those states in 2021, down 1%. At 2.68 tons per acre, average yield was up 0.02 ton; total production, at 81.6 million tons, was down 1%. Of that total, 20.2 million tons were from alfalfa and alfalfa mixtures.

All haylage and greenchop forages were harvested from 4.14 million acres in 2021, down about 3%, but higher yields pushed total production to 29.92 million tons, up 2%.

- **Corn silage:** Production was estimated at just under 130.3 million tons for 2021, down 5%. Area harvested was 6.48 million acres, down 3%. The U.S. yield was estimated at 20.1 tons per acre, down 0.4 ton.

- **Sorghum silage:** Production was estimated at 5.08 million tons, up 63% from 2020. Area harvested was estimated at 331,000 acres, up 39%. Yield averaged 15.4 tons per acre, up 2.3 tons per acre from 2020.

- **New seedings of alfalfa and alfalfa mixtures:** At 1.65 million acres, acreage newly seeded to alfalfa in 2021 was down nearly 25% (538,000 acres) from 2020 and the smallest total since the USDA started releasing estimates two decades ago. About 1.32 million acres (80%) of new seeding was concentrated in 22 of 24 major dairy states, but new seeding in those states was down 446,000 acres compared to a year earlier.

- **Hay stocks:** Heading into the 2021 growing season, all dry hay stocks stored on U.S. farms on May 1, 2021, totaled about 18 million tons, down 1% from a year earlier but still the second-highest volume for that date since 2017. With lower production, however, hay inventories as of Dec. 1, 2021, totaled about 79 million tons, down 6% from Dec. 1, 2020, and the third-lowest on-farm hay inventory for that date since 1977. Montana, North Dakota and South Dakota saw the largest declines. Hay "disappearance," a proxy for use, totaled 59.2 million tons for the period May 1 – Dec. 2, 2021, down 6% from the same period in 2020.

EXPORTS

Hay exporters struggled with port and other logistical problems throughout the year. However, as in 2020, strong shipments to China propelled alfalfa hay export volumes to a new record high of 2.86 million metric tons (MT) in 2021. China's prominence as an alfalfa buyer continued to grow: It was the destination for about 55% of all U.S. alfalfa hay exports during the year. Exports of alfalfa hay peaked in August and averaged about 240,000 MT per month, up about 15,000 MT from 2019 and 2020.

Exports of other hay were steady with recent years, with the annual total of 1.4 million MT. Japan maintained its spot as the top market, taking about 60% of other hay shipments during the year, followed by South Korea, at 22%. Monthly exports of other hay peaked in March-May and averaged about 116,525 MT per month, up about 4,750 MT from 2020.

With income differentials and loading delays, shipping lines often sent empty containers back to Asia instead of waiting to fill them with U.S. ag commodities, including hay. Frustration over shipping was expected to continue into 2022, and exports could be further threatened by rising geopolitical differences with China.

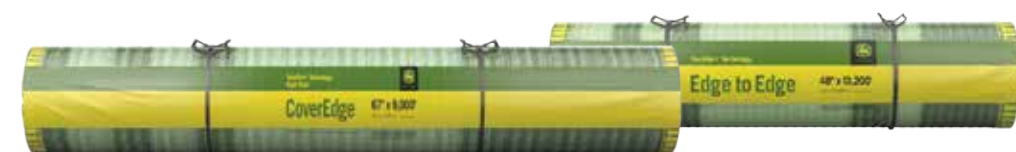
WEATHER AND DROUGHT

The entire year was spent with more than 40% of the contiguous U.S. in drought, and lack of precipitation in the western half of the U.S. challenged hay producers all year. USDA Drought Monitor maps estimated U.S. hay-producing acreage considered under drought conditions fluctuated between a low of 30% in June to a high of 45% at the end of December. The area of drought-impacted alfalfa acreage was larger, with a low of 45% in March to a high of 65% in late August. Periods of extreme heat accompanied the Northern and Western drought, aggravating the effects of persistently below-normal precipitation.

* Monthly average prices calculated by 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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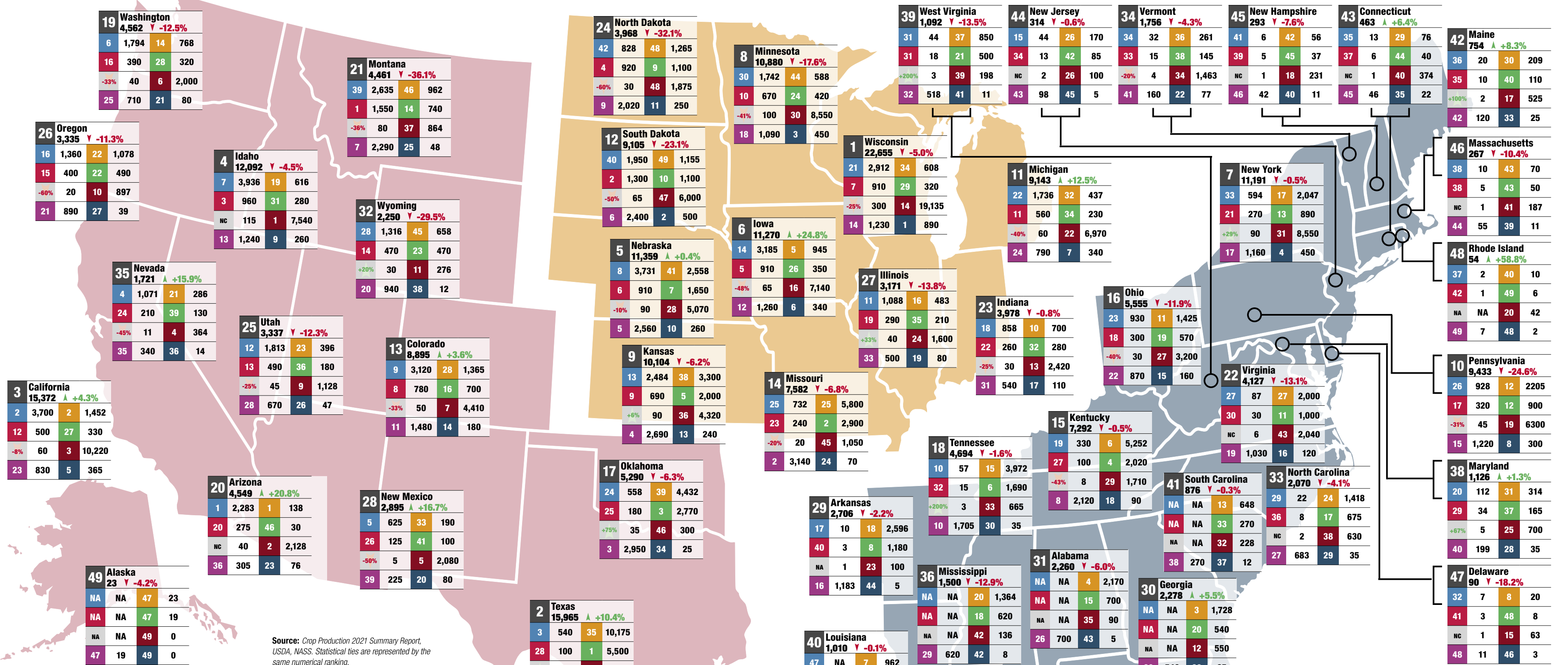
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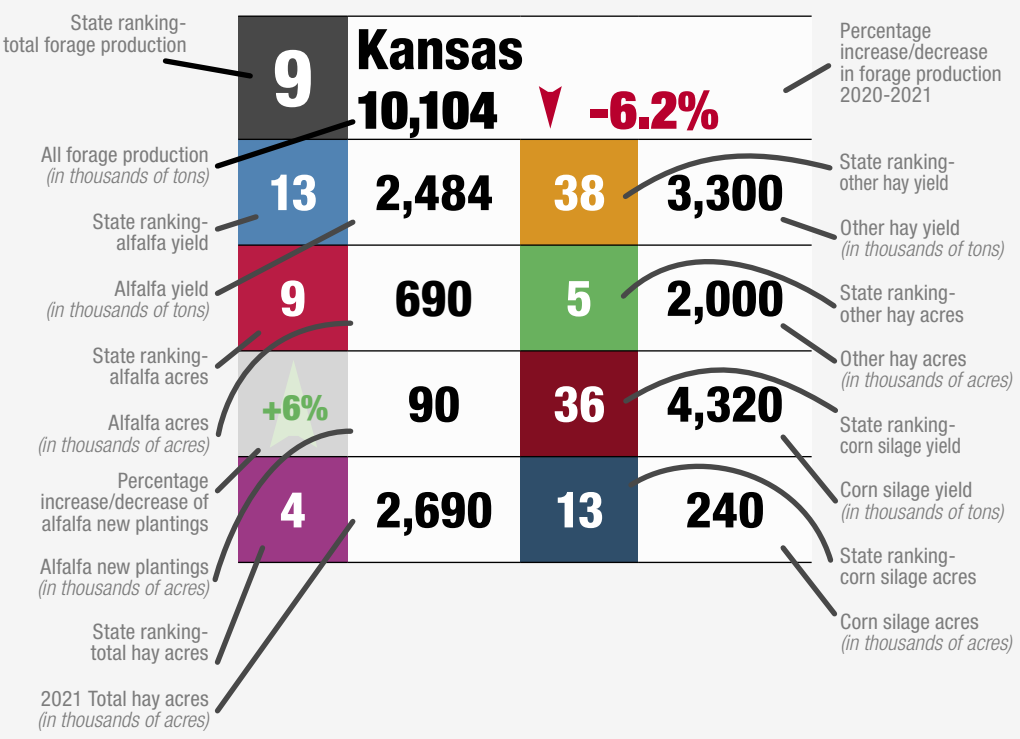
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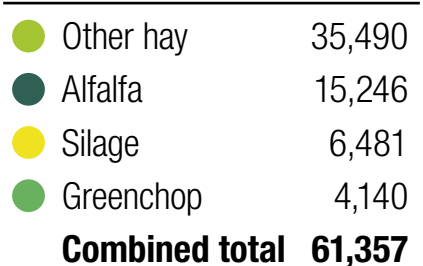
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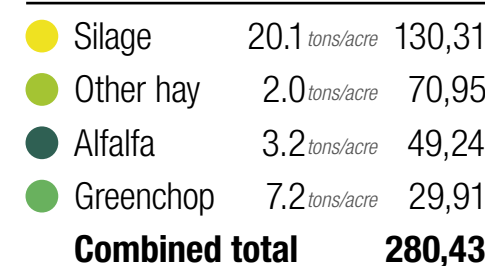
Legend



Total U.S. forage acres in thousands of acres



Total U.S. tons harvested in thousands of tons



United States

