Agriculture By the Numbers

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US Beef Production Resilient in Spite of Lower Beef Cow Herd

Tim Petry, Extension Livestock Marketing Specialist

The U.S. is the leading producer of beef in the world, and has been for many years. Following the U.S. in order are Brazil, China, Argentina and Australia.

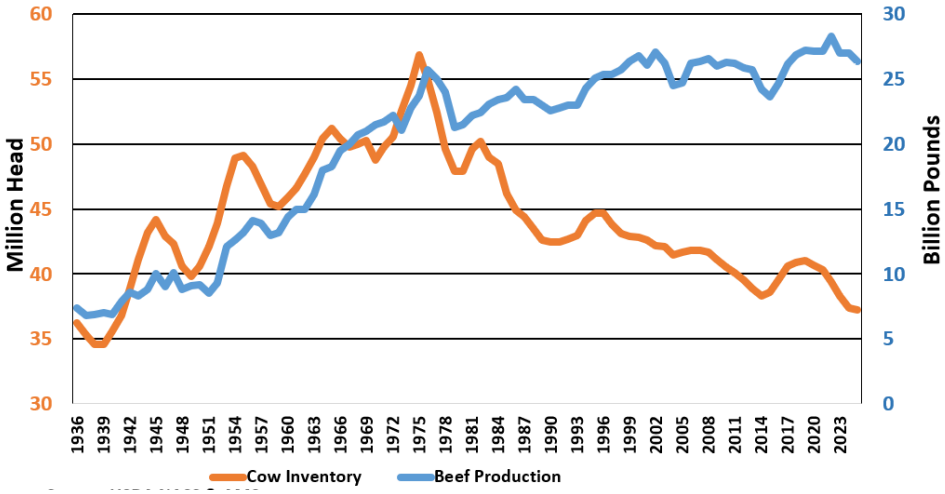
The USDA Foreign Agricultural Service publishes a semiannual report titled "Livestock and Poultry: World Markets and Trade." The report includes data on U.S. and global livestock and meat production, trade, consumption and stocks, with analysis of developments affecting world livestock, including cattle and beef. The report is available at www.fas.usda.gov/sites/default/files/2025-04/livestock_poultry_0.pdf.

The most recent report was released on April 10.

Global beef production in 2025 is forecast to be unchanged from 2024 at 61.6 million tons as declining production in the U.S. and European Union will be offset by increases in Australia and Brazil.

U.S. beef production has been on a long-term uptrend despite a decline in beef and dairy cow numbers since 1975.

U.S. Cow Herd and Beef Production



Source: USDA NASS and AMS

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US Beef Production Resilient In Spite of Lower Beef Cow Herd — continued from page 1

U.S. dairy cow numbers peaked in 1945 at 27.8 million head and have generally declined since then. Dairy and beef cow numbers were essentially equal in 1953 at 23 million head each.

U.S. beef cow numbers continued increasing until 1975 when they reached 45.7 million head. Since then, beef cow numbers have generally declined, with cyclical declines outpacing cyclical increases.

On Jan. 1, 2025, U.S. beef cow numbers were 27.86 million head, and with the 9.35 million dairy cows, the total cow numbers were 37.2 million head.

Beef cow numbers declined for six years from 2019 through 2024, mainly due to drought conditions in important U.S. cattle-producing regions.

U.S. beef production reached an all-time high of 28.36 billion pounds in 2022, buoyed by drought-forced beef cow liquidation. In 2023 and 2024, beef production declined to 27 billion pounds with fewer cattle available.

The long-term increase in beef production resulted from a long-term increase in fed cattle live and carcass weights. Carcass weights have trended higher for over 60 years, with steer weights increasing an average of 4 pounds per year. Steer carcass weights peaked in 2022 at 910 pounds, declined slightly to 908 pounds in 2023, but increased sharply in 2024 to 931 lbs.

Each month, USDA predicts expected annual beef production in the "World Agricultural Supply and Demand Estimates" report. It is available at www.usda.gov/oce/commodity/wasde.

USDA's January estimate for 2024 beef production was 26.11 billion pounds, down 3.3% from 2023. However, USDA increased the estimate each month, due to increasing fed cattle slaughter weights and more heifers on feed than earlier expected. The final 2024 beef production estimate was 27 billion pounds, the same as 2023 despite a decline in beef cow numbers.

Steer and heifer carcass weights averaged 25 pounds heavier than 2023, which was the equivalent of slaughtering a million more fed cattle. That offset the 926,300 head decline in U.S. beef cow numbers that occurred during 2023, which will be an important factor to consider when cyclical beef cow herd expansion occurs.

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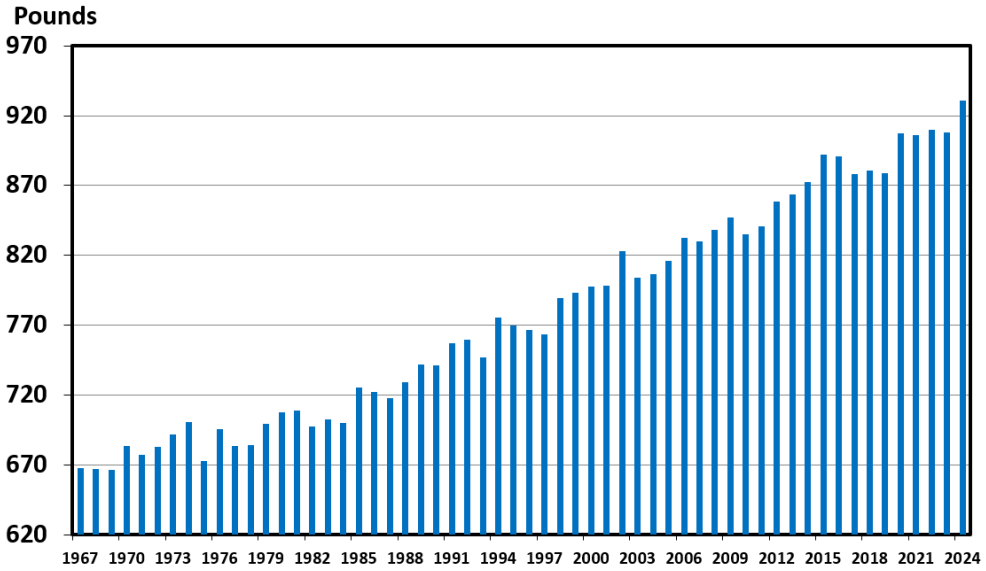
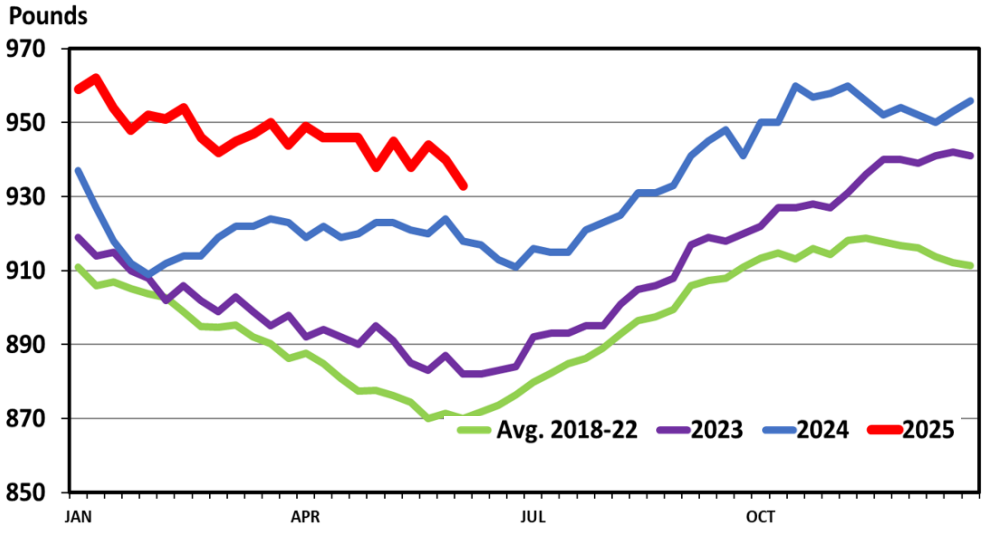
U.S. Steer Carcass Weights — Annual



Source: USDA NASS and AMS

Steer Dressed Weight — Federally Inspected, Weekly



Source: USDA AMS and NASS

US Beef Production Resilient In Spite of Lower Beef Cow Herd — continued from page 2

The January 2025 WASDE beef production estimate was 25.87 billion pounds, but has increased to 26.36 billion pounds with the current higher dressed weights.

Average weekly steer dressed weights through May were 949 lbs., compared to 920 in 2024. Higher weights have offset lower cattle supplies, which has led to the same beef production as last year.

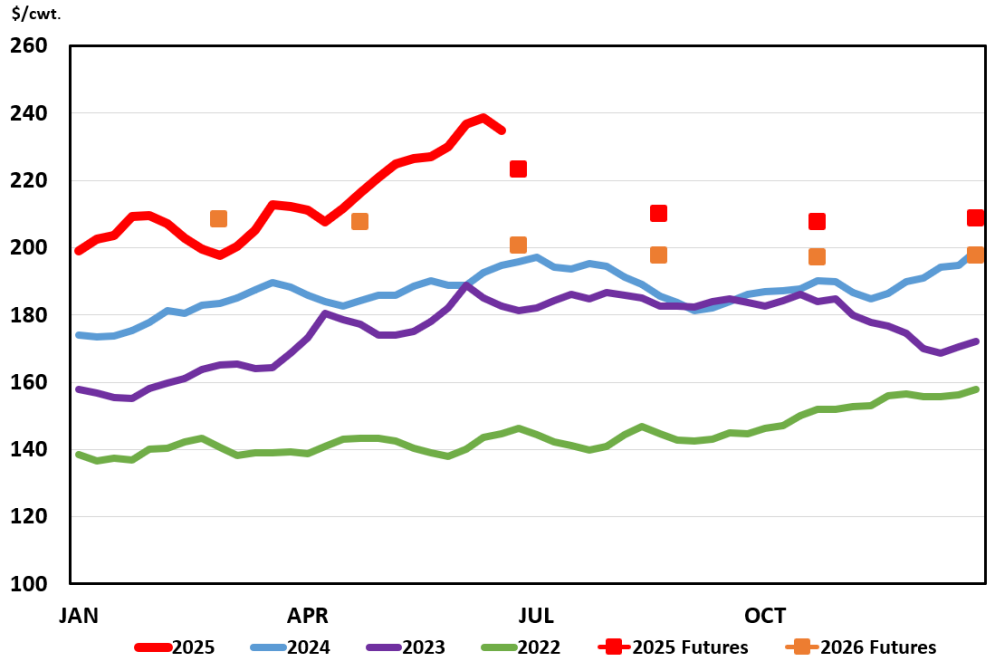
Feedlots are keeping cattle on feed longer due to fewer feeder cattle available at record-high prices. Beef packers are encouraging higher weights to help bolster lower beef production levels.

Strong seasonal early summer beef demand pushed fed cattle prices up to record high levels near $238/hundredweight (cwt.) in June. With costs of gain around $1.10/cwt. and fewer feeder cattle available, the incentive to add weight to fed cattle will likely continue.

Looking ahead to 2026, USDA is projecting beef production to decline 4% to 25.28 billion pounds, which would be supportive to cattle prices.

USDA projects fed steers to average $221.50/cwt. in 2025 and $228.50/cwt. in 2026, both record highs.

Fed Steer Prices — 5 Market Weighted Average, Weekly



Source: USDA AMS

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Another Look at Brazilian Corn Production and Exports

Frayne Olson, Crop Economist/Marketing Specialist

The United States is the largest corn-producing and exporting country in the world. However, Brazil is the third-largest corn producer and second-largest corn exporter. Brazil competes directly with the U.S. for sales into major corn-importing places like the European Union, Japan, Vietnam, South Korea and China. Brazilian corn exports are also becoming more competitive in Mexico, the largest corn-importing country in the world and a major market for U.S. corn.

Brazilian corn production is unique because there are three corn production seasons. The first-season corn, which accounts for about 24% of Brazil's total corn production, is normally planted in September and October and harvested from February through May. This is similar to Brazil's soybean planting and harvesting periods.

Figure 1 is a map of the major Brazilian first crop corn production regions and their five-year average production levels. Figure 2 shows the crop calendar and percent of production by state. The Central and Southern states of Mina Gerais, Rio Grand do Sul and Paraná account for almost half of the first crop corn. These regions are relatively close to the major ports of Santos and Paranagua, which provide access to the global export markets.

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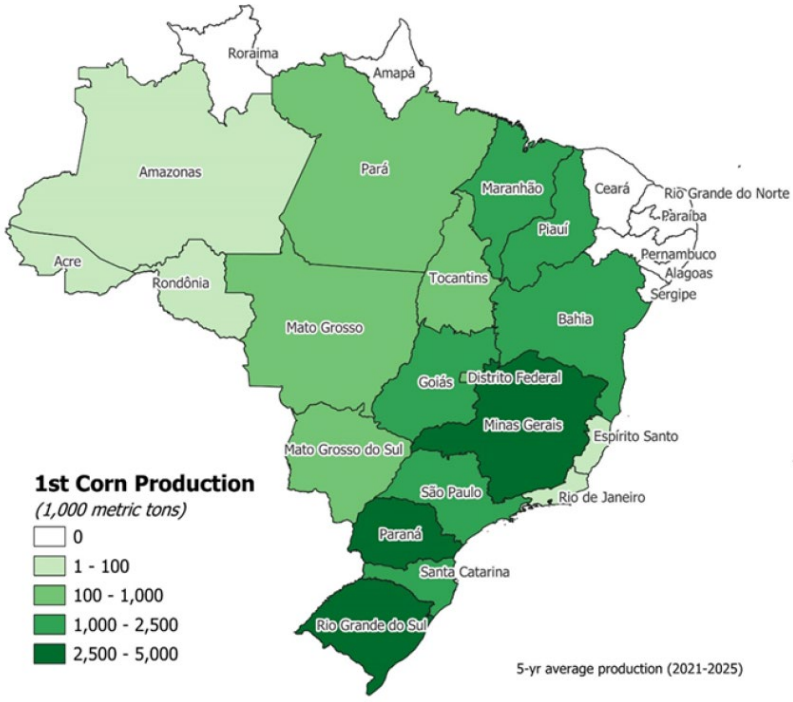
Figure 1 – Brazil First-season Corn Production by State



USDA Foreign Agricultural Service – Commodity Intelligence Report, March 20, 2025

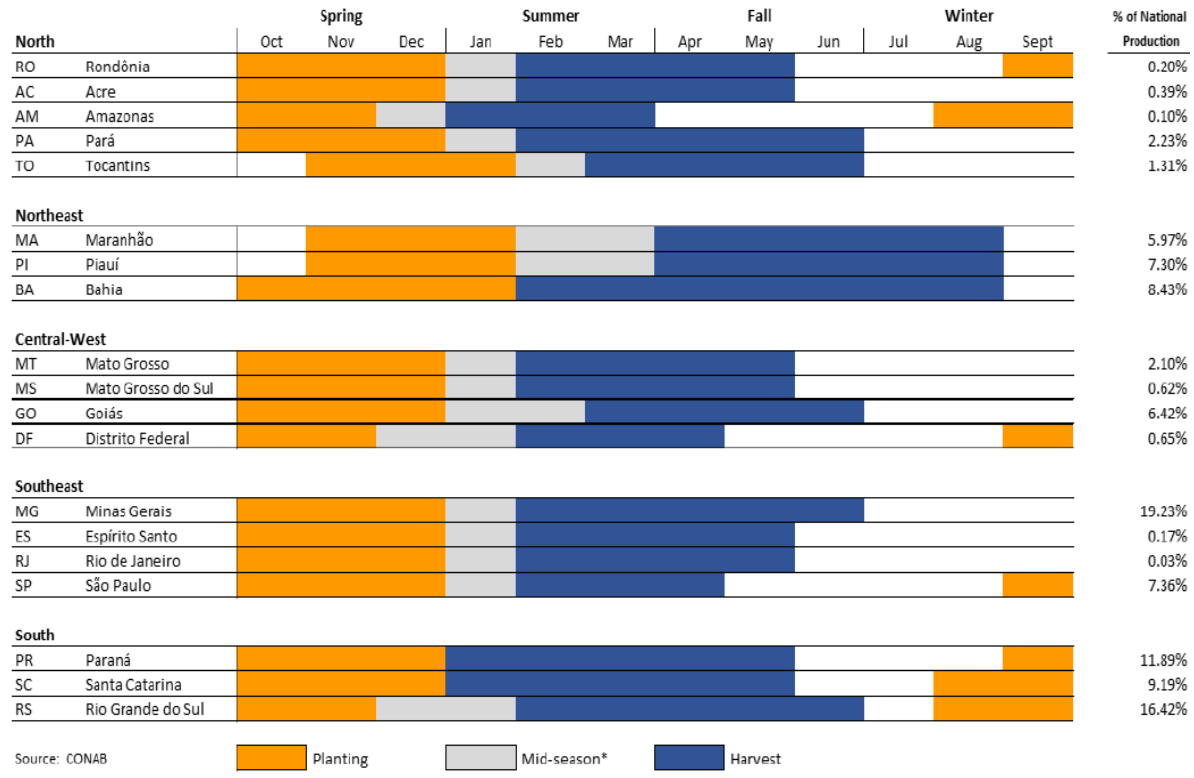


Figure 2 - Brazil First-season Corn Production Calendar and Percent Production by State

USDA Foreign Agricultural Service – Commodity Intelligence Report, March 20, 2025

Another Look at Brazilian Corn Production and Exports – continued from page 4

The second-season corn, often referred to as the Safrinha corn crop, accounts for about 76% of Brazil's total corn production. The Safrinha corn is normally planted from January through May and harvested from June through September. Safrinha corn is typically planted right after soybeans have been harvested. Planting progress can be impacted by soil moisture levels and seasonal rainfall patterns.

Figure 3 is a map of the major Brazilian Safrinha corn regions and the five-year average production levels. Figure 4 shows the crop calendar and percent of production by state. Mato Grosso accounts for about 50% of the Safrinha production, with Paraná, Mato Grosso do Sul and Goiás producing an additional combined 35%. A portion of the corn produced in these regions is exported, but a majority is consumed domestically for animal feed and ethanol production.

Figure 3 - Brazil Second-season Safrinha Corn Production by State

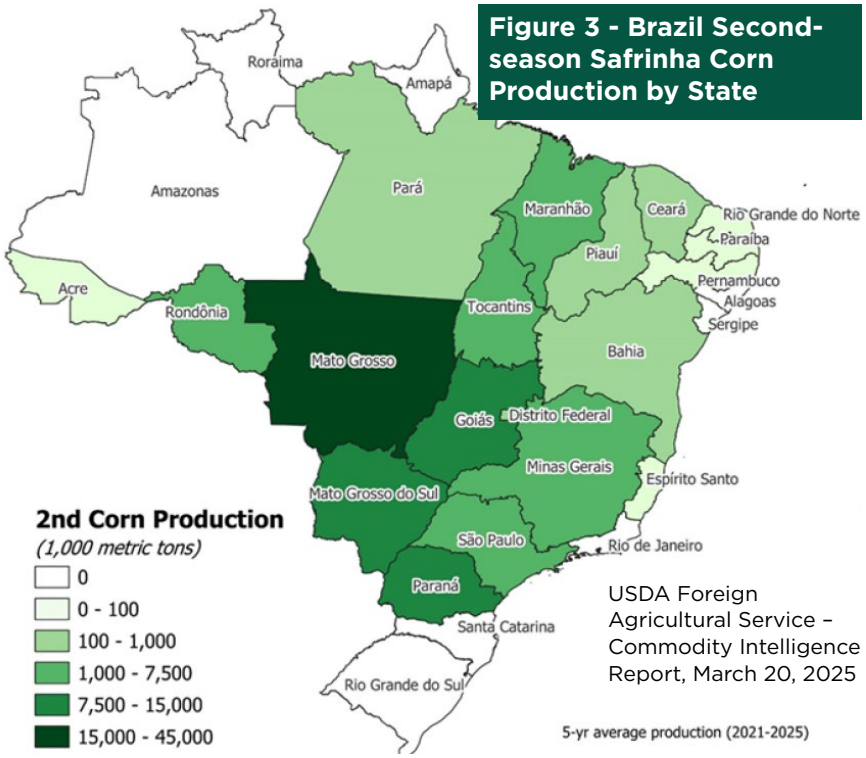


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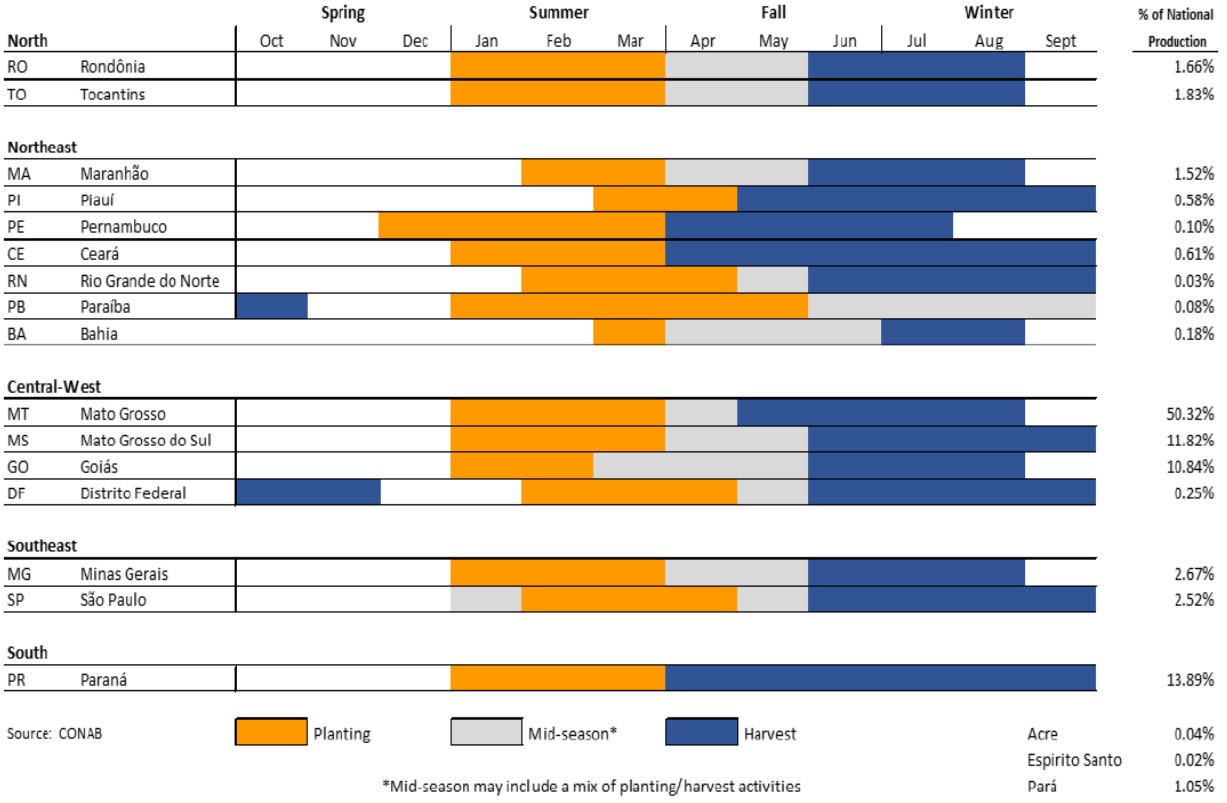
Figure 4 - Brazil Second-season Safrinha Corn Production Calendar and Percent Production by State

USDA Foreign Agricultural Service – Commodity Intelligence Report, March 20, 2025



Another Look at Brazilian Corn Production and Exports – continued from page 5

The third-season corn, which makes up about 2% of total production, is planted in May and harvested in October, similar to U.S. corn production. The states of Bahia, Sergipe and Alagoas produce third-season corn and are located in the Central-East.

As of June 30, 2025, Brazil's first crop corn harvest was almost completed. Yield reports from industry sources are suggesting average to slightly above average yield and total production. Harvest for Safrinha corn has just begun, with yield and total production expectations above average.

The June USDA World Agricultural Supply and Demand Estimates (WASDE) is projecting total Brazilian corn production at 131 million metric tons. This is very similar to other industry estimates. If correct, this would be the second-largest Brazilian corn crop in history, with the largest being 137 million metric tons in the 2022/23 marketing year.

The June WASDE is forecasting total Brazilian corn exports at 43 million metric tons, which is the same level as last year. If realized, this would be the third-largest export level in history.

The most recent comments from crop market traders and analysts are that Brazil will provide strong competition for U.S export sales. The prospects for a large U.S. corn crop, on top of very strong production from Brazil, are lowering the anxiety level of corn importers and allowing them to become more price sensitive. There are still many unknowns in the global grain trade, but the prevailing viewpoint is that U.S. corn will face strong competition in the 2025/26 marketing year.

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Considerations for Adopting New Technologies on the Ranch

Jon T. Biermacher, Professor of Practice and Extension Livestock Development Specialist

New production practices/systems, innovations and technologies have been developed for the production agriculture industry for many years, dating back to the mid-1700s in Britain. Since that time, many of those practices and technologies have been adopted in widespread fashion by agricultural producers, and many have not. Those that have been adopted have provided additional net benefits compared to current practices through increased revenues at existing costs, reduced costs at existing revenues, or some combination of both.

We now live in a world where we have technologies like artificial intelligence (AI), big data, near-infrared sensors, smart phones, social media platforms, unmanned aircraft (drones), virtual fencing, electronic ear tags and driverless tractors, combines and trucks. The list goes on.

Many of these technologies are a product of research and development for defense and space programs (and other nonagriculture industries) that are now looking for homes in other sectors of the economy, including agriculture. Currently, researchers at public institutions and private companies, including a number of startups, are scrambling to further develop these new-age technologies into viable production practices/systems that can improve the efficiencies and economics associated with using the scarce resources (land, labor and access to financial capital) that are available to agricultural producers.

In some cases, some of these technologies are being promoted to agricultural producers before they have been sufficiently evaluated for their economic feasibility, which, of course, can be an issue for agricultural producers. This can especially be true for cow-calf producers right now when cattle prices and producer profitability are at all-time highs. To illustrate the point, the average net returns (including land rent) over the past 30 years (1997-2026) for cow/calf operations in the United States are reported in the figure below. Including projections for 2026, the long-term average net return is $110/cow. When net returns for 2025, and projections for 2026, are removed, the long-term average was $73/cow. In fact, 24 out of 30 years, returns were below $150/cow, and 8 out of 30 years net returns were negative.

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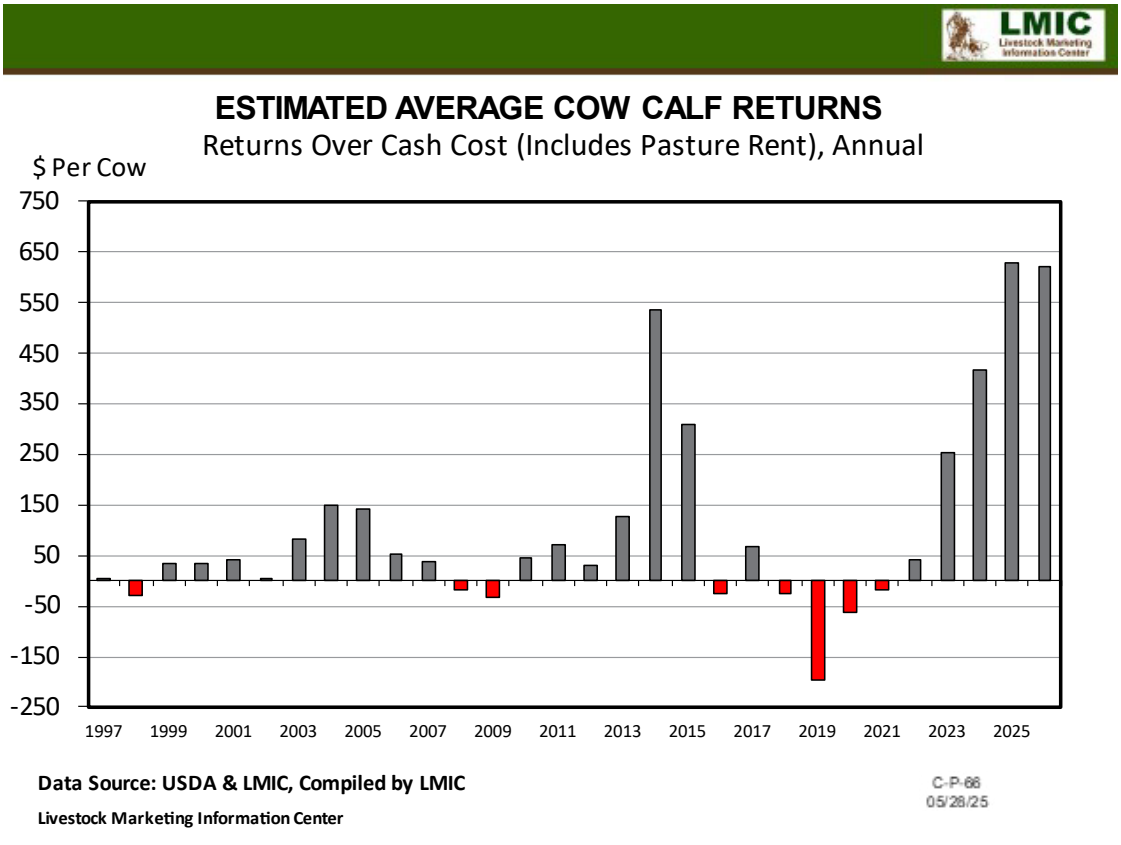
Considerations for Adopting New Technologies on the Ranch — continued from page 7

Production economists like myself often promote the idea of "farming the average" which argues for making decisions at the farm level based on the average profitability of the farm operation. This includes decisions about whether or not to invest and adopt a new production system/practice or technology, especially when the financial investment is significant and not easily reversible. Right now, with a record profitability of $600/cow, new technologies and their promoted level of net returns could seem very attractive. However, it is important to consider what the return of a technology would look like for a cattle market scenario that reflects a significant expansion in the national cow herd (i.e., a long-term average profitability that lies somewhere between $75 and $100 per cow). Of course, most agree that expansion will occur, but there is debate about whether it will expand to previous levels. Nonetheless, $600 per cow profit will not hold up with the pending expansion.

Keep in mind, I am not arguing against new technologies — the net benefits to agricultural producers and rural communities have been extremely valuable over time. I am simply recommending that producers should not use the current market situation for cattle, nor the current market situation for input prices, to drive decisions that will affect the bottom line of the ranch for years to come.

Please feel free to let me know what questions you have at jon.biermacher@ndsu.edu



Emergency Livestock Relief Program Explained

Ron Haugen, Farm Management Specialist

The Situation

Drought and wildfires across the U.S. in 2023 and 2024 significantly impacted livestock producers' ability to maintain herd sizes and grazing operations. In response, USDA's Farm Service Agency (FSA) is rolling out the Emergency Livestock Relief Program (ELRP) 2023 and 2024.

ELRP 2023 and 2024 builds on a series of ad hoc livestock disaster assistance efforts launched after successive years of extreme weather. As in previous programs, this program leverages data from the Livestock Forage Disaster Program (LFP) to streamline delivery. It is authorized under Title I of the American Relief Act Disaster Relief Supplemental Appropriations Act of 2025. The program allocates up to $2 billion for livestock-related losses, with approximately $1 billion committed to ELRP specifically for drought and wildfire damage.

The ELRP 2023 and 2024 program does not require a new application process. The USDA will automatically issue payments to livestock producers with approved 2023 or 2024 LFP applications on file. The same eligibility rules that applied to LFP, such as livestock type, grazing land location and drought severity. The exception is that the average adjusted gross income (AGI) limit from LFP does not apply to ELRP.

ELRP does not have the AGI limit that applied under LFP, but payment limits still apply. Most producers are subject to a $125,000 annual payment cap. Those who derive at least 75% of their income from farming or ranching may qualify for an increased cap of $250,000. To receive the higher limit, eligible producers must submit Form FSA-510 and supporting documentation.

The Program

ELRP 2023 and 2024 is only available to producers with an approved LFP application for the applicable year. If a producer did not apply for LFP in 2023 or 2024, or was ineligible due to livestock type, location or drought intensity, they will not qualify for ELRP. The USDA is not implementing a separate program for non-LFP participants. However, the USDA has reserved up to $1 billion for other livestock-related losses from 2023 and 2024, including flooding, which will be addressed in a separate rule. Producers who did not qualify for ELRP may still be eligible for support under future announcements.

The USDA has not announced a specific timeline for disbursing ELRP 2023 and 2024 payments. Producers typically get payments quickly once eligibility reviews are complete.

The Payment Calculation

Payments under ELRP 2023 and 2024 are calculated based on what each producer received through LFP in the same year. If they received an LFP payment, ELRP uses that amount and applies a fixed payment factor of 35% to determine the assistance.

To understand how ELRP is derived, it helps to first understand how LFP payments are calculated. LFP provides assistance to eligible producers who experienced grazing losses due to a qualifying drought or fire. For drought, LFP payments reimburse 60% of USDA's estimated monthly feed cost per animal unit (AU), for up to five months in the most severely impacted counties. In 2023, this was $34.87 per AU per month based on a $58.12 feed cost. In 2024, the monthly payment was $31.54 per AU based on a $52.56 feed cost.

For wildfire-related losses, producers are eligible for assistance if grazing on federally managed lands was prohibited due to fire. In these cases, LFP reimburses 50% of estimated feed costs for the number of days grazing was not permitted, up to a maximum of 180 days. These payments also contribute to a producer's total gross LFP payment and are included in ELRP's 35% calculation if applicable.

Continued on page 10.

Emergency Livestock Relief Program Explained – continued from page 9

To determine the ELRP payment, the USDA multiplies the producer's gross LFP payment by a fixed factor of 35%. The amount a producer receives from the LFP depends on their number of eligible livestock, the severity and duration of drought conditions in their county and the standard monthly LFP rate assigned to their livestock type**.**

2003 North Dakota Calculations for Adult Beef in Eligible Counties

$58.12 x 60% = $34.87 (this is the full LFP payment rate times 60% for 1 AU per month)

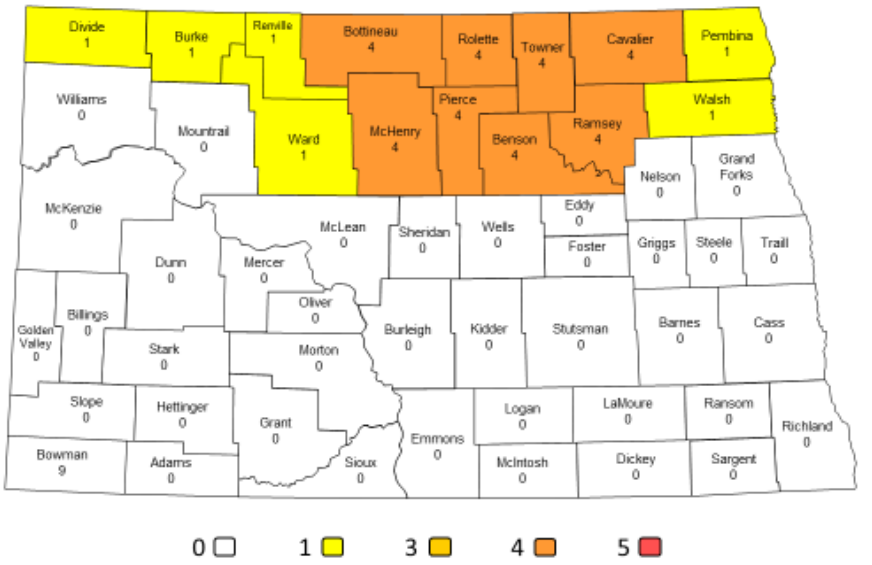
$34.87 x 35% = **$12.20** (this is the additional eligible benefit)

2004 North Dakota Calculations for Adult Beef in Eligible Counties

$52.56 x 60% = $31.54 (this is the full LFP payment rate times 60% for 1 AU per month)

$31.54 x 35% = **$11.04** (this is the additional eligible benefit)

(10/09/23)



North Dakota LFP Monthly Payments (10/17/24)