Agriculture By the Numbers

July 2024

NDSU Extension Agribusiness and Applied Economics

Editor: Bryon Parman
Assistant Professor/Agricultural Finance Specialist

701-231-8248
bryon.parman@ndsu.edu

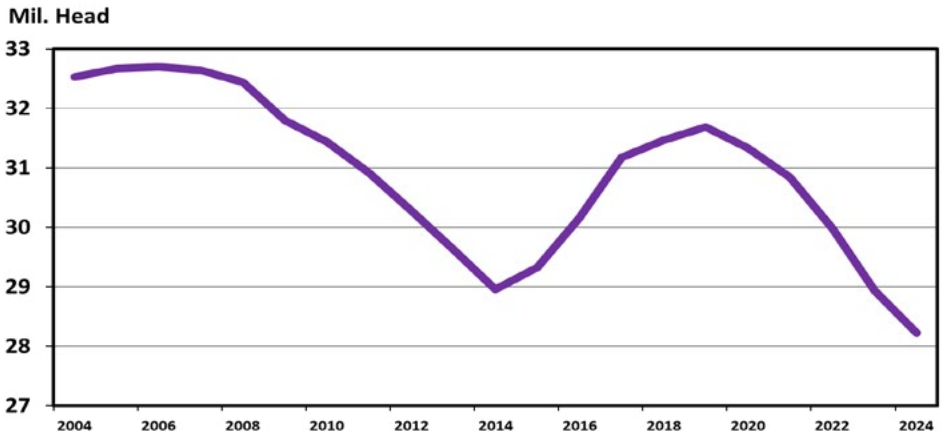
Record High Cattle Prices Supported by Declining Supplies and Good Demand

Tim Petry, Livestock Marketing Specialist

Tighter supplies of cattle and beef are supporting prices and will continue to do so. Five straight years of U.S. beef cow herd liquidation has resulted in smaller calf crops, cattle on feed and beef supplies.

U.S. beef cow numbers on Jan. 1, 2024, at 28.22 million head were down from the 28.94 million head on Jan. 1, 2023. The 2023 and 2024 numbers were even below the 28.96 million beef cows at the last cyclical low in 2014, which recorded the previous record high cattle prices.

January 1 – Beef Cow Inventory, U.S., Annual



Source: USDA NASS

Expanding and intensifying U.S. drought conditions from 2020 through 2023 were a major cause of cow liquidation. The worst drought conditions occurred in the fall of 2022 with 75% of the beef cow herd in drought.

Continued on page 2.

NDSU EXTENSION

North Dakota State University
Fargo, North Dakota

Global Wheat Prices Supported by Weather Concerns in Russia — continued from page 1

Drought conditions have continually improved since, with 12% of cattle currently in drought areas.

The 2023 U.S. calf crop (includes beef and dairy calves) declined 2.5% at 33.59 million head and will decline again this year and next year.

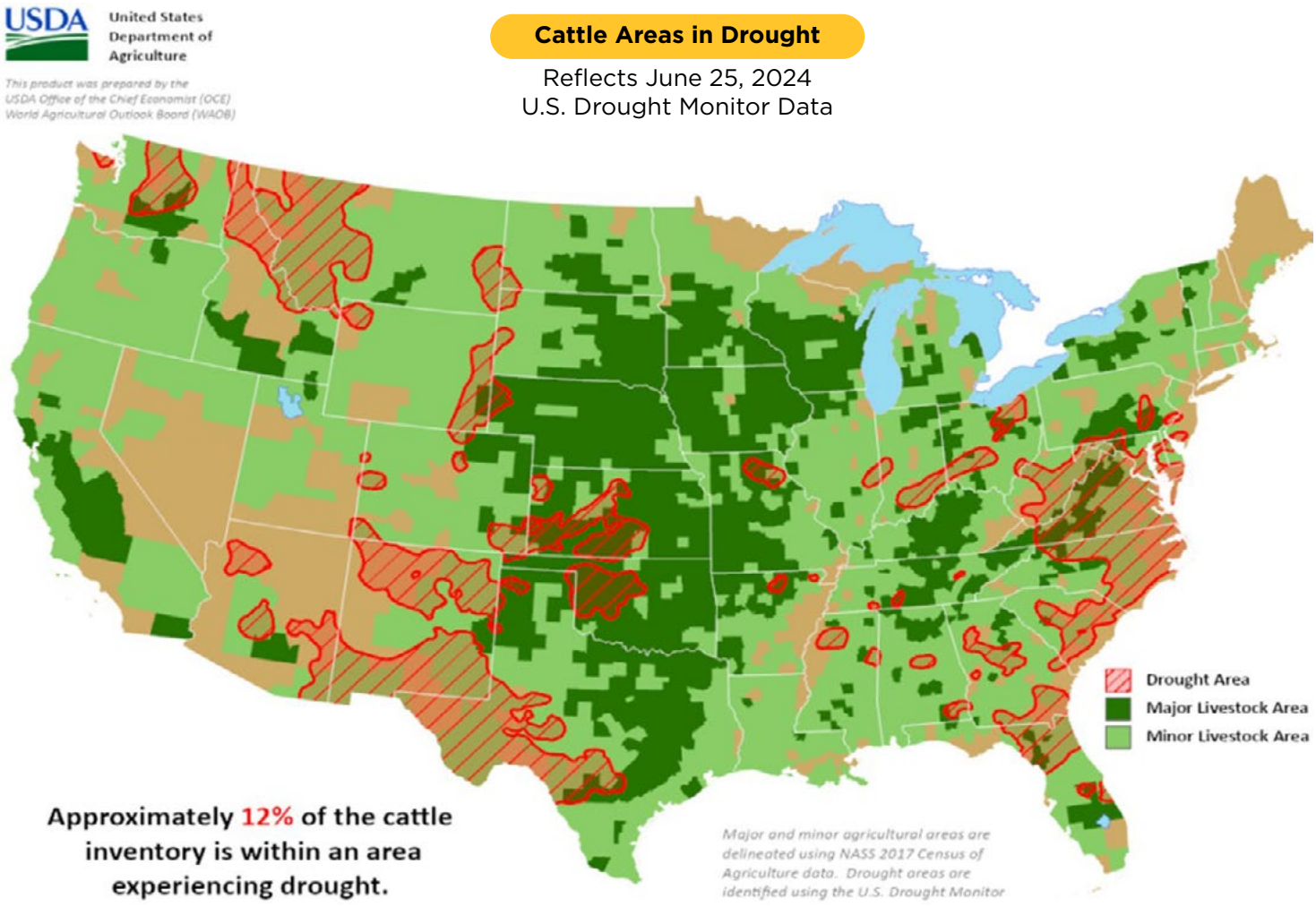
2022 beef production at 28.3 billion pounds was record high spurred by drought-induced high beef cow and heifer slaughter. 2023 beef production declined to 26.96 billion pounds, and USDA predicts declines again in 2024 to 26.59 billion pounds and in 2025 to 25.37 billion pounds.

Beef demand has been stronger than some beef industry sources expected, especially with concerns about the economy. Inflation, high interest rates, large credit card debt and moderating competing meat prices have been headwinds.

The 2024 choice boxed-beef cutout value, a good indicator of beef demand, has generally been increasing at near record high levels over $300/hundredweight (cwt.).

Cattle prices reached a cyclical low in 2020 and have increased cyclically to record high levels.

Continued on page 3.



Record High Cattle Prices Supported by Declining Supplies and Good Demand — continued from page 2

Shorter supplies and strong demand are supporting cattle prices. Fed steer prices have generally been increasing seasonally to average over $195/cwt. in mid-year. USDA is predicting fed steers to average record high $184/cwt. in 2024 and $188.50/cwt. in 2025.

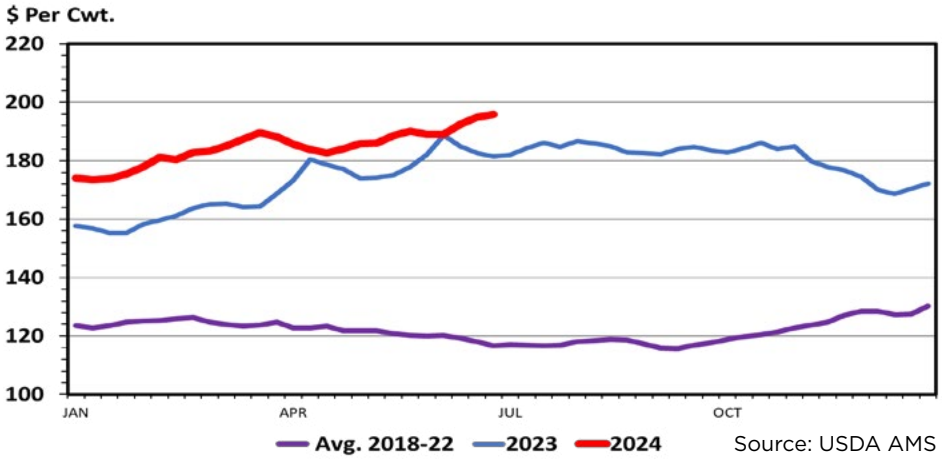
The two factors that affect calf and feeder cattle prices the most are fed cattle prices, especially live cattle futures prices in the month the feeder cattle will reach slaughter weight, and corn prices.

Strong fed cattle prices and declining corn prices throughout 2023 were supportive to calf and feeder cattle prices. Furthermore, improving U.S. moisture conditions have supported calf prices for 2024 summer grazing programs.

A 10 cent/bushel change in corn prices usually results in a $1/cwt. change in fall calf prices in the opposite direction. So, corn price changes the next several months will be important.

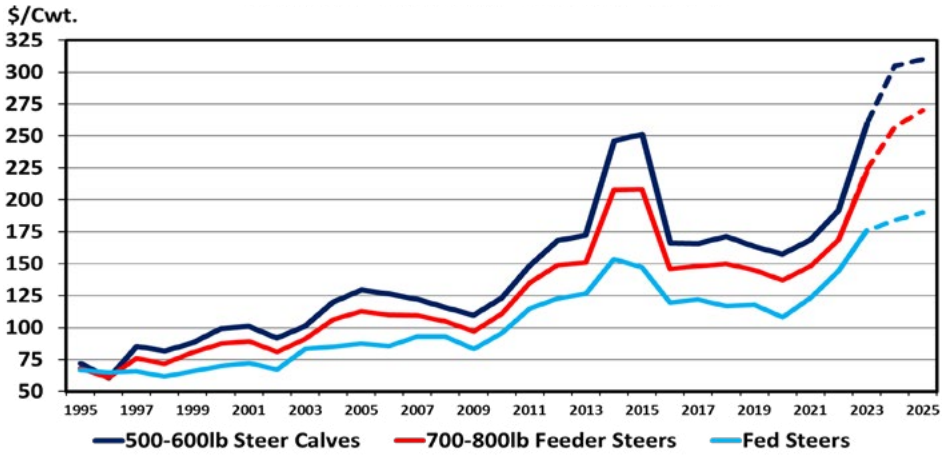
Looking ahead to the potential 2024 corn crop, the USDA National Agricultural Statistics Service released the "Acreage" report on June 28, 2024. It is available at https://usda.library.cornell.edu/concern/publications/j098zb09z.

Fed Steer Prices – 5 Market Weighted Average, Weekly



Source: USDA AMS

Average Annual Cattle Prices



Source: USDA ERS

The report indicated that U.S. corn producers planted 91.5 million acres in 2024, down 3.17 million acres from last year.

Even though corn planted acreage is down, USDA is projecting 2024 corn prices to average $4.40/bushel compared to $4.65/bushel last year. But corn price volatility is also expected as information about crop development, expected yield and final production becomes available.

When cattle prices are at historic high levels, price volatility is also usually high. The live and feeder cattle futures markets have been especially volatile.

Cattle prices are expected to continue to increase cyclically. However, price volatility and risk will likely continue. Drought conditions linger in a few areas, the size of the 2024 corn crop is yet to be determined, domestic and export beef demand face challenges, and geopolitical tensions continue around the world.

So, there is risk for lower cattle prices, especially on a seasonal basis. During the increasing phase of the cattle price cycle, marketing plans that establish floor prices but leave the top side open should be considered.


Simon Dux_istockphoto.com

Tax Tips: Income Averaging for Farmers

Ron Haugen, Farm Management Specialist

Background

Income averaging is a tax provision of the Internal Revenue Code that can be used by farmers and fishermen. Income averaging is entered on Schedule J for the Form 1040.

A recent study by the Internal Revenue Service (IRS) determined that income averaging is underutilized. Qualifying taxpayers could have saved 23% on tax liability on average if income averaging had been used.

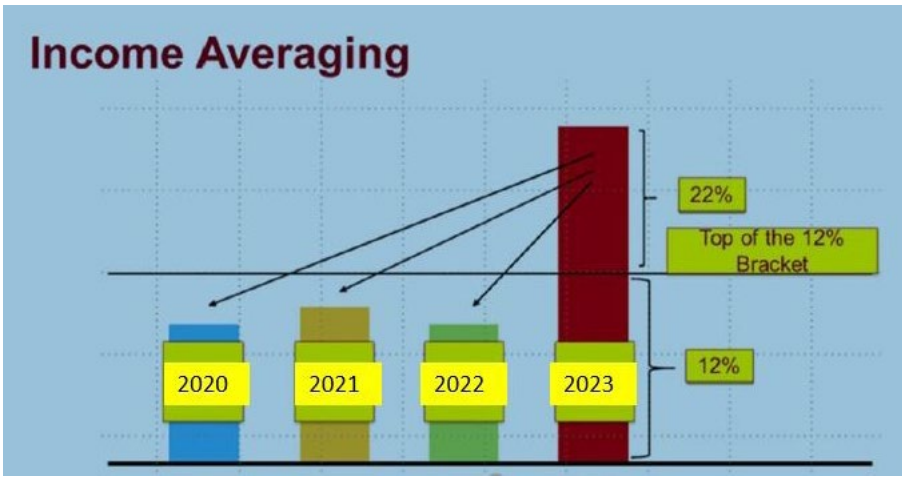
Income averaging is not amending the tax return. The provision averages the tax rates that apply to current year farm income using tax brackets from the three prior years.

Mechanics

Election year is the current year (or amendment year). You can elect how much farm income to use in the calculation. This is the elected farm income (EFI). The base years are the three prior tax years. Elected farm income is farm profit reduced by net operating losses (NOLs); it includes farm asset sales (except land) and S-Corp shareholder wages.

The EFI is divided by three and added equally to the past three years' taxable income. You in effect "fill up your unused tax brackets." Note the illustration.

Continued on page 5.



Source: University of Minnesota

Tax Tips: Income Averaging for Farmers

— continued from page 4

Steps

First: Subtract elected farm income (EFI) from election-year taxable income. Used election year tax rates.

Second: Add one-third of EFI to each of the three base years. Use tax rates and rules for each of those years

Third: Add the increase in tax for each base year to the current tax.

Strategy

The goal is to fill up the lower tax brackets of the base years. The EFI must be distributed equally to the base years in the income-averaging calculation. The benefit of income averaging is maximized when the average marginal tax rate for the base years (including EFI) equals the marginal tax rate on the residual election year income.

Income averaging is just about tax rates. Actual taxable income is unaffected for election year and the base years. Farm income averaging will not affect other calculations tied to gross income, adjusted gross income or taxable income.

In future years, for purposes of income averaging only:

- Current year taxable income is reduced by EFI when used as a base year.
- Taxable income of a base year will be that year's taxable income increased by that year's share of earlier EFI additions.
- Income tax for each year used as a future base year will be the tax calculated after any earlier year election.

If income averaging does not show much current benefit, you can move income to prior years for lower base years in the future. You can amend prior returns to do this.

If you're a retiring farmer, sale of assets other than land may qualify. These assets must be regularly used in the business of farming and qualify only if the property is sold within a reasonable time after the farming business is closed out.

Depreciation recapture is taxable in the year of sale, even if an installment sale is used. Farm income averaging can effectively spread the gain from depreciation recapture on qualifying farm assets.

Base-year taxable incomes can be negative; however, taxable income must be increased for any deduction that will provide benefit in another tax year. Generally, this requires an add-back of an net operating loss arising in or carried into a base year to the extent there is a carryover from that base year.

Crop-share landlords may qualify for farm income averaging. A written agreement and timing are important. The written agreement must be signed before the tenant begins significant activities on the land. The landlord need not materially participate. Fixed rental payments do not qualify.

North Dakota income tax provisions allow for state income averaging. It is calculated on ND Schedule ND-1NFA.

Information on agricultural topics can be found in the Farmers Tax Guide, IRS Publication 225. It can be obtained at any IRS office or ordered by calling 800-829-3676. Additional questions on this topic should be addressed to your tax professional or the IRS at 800-829-1040 or www.irs.gov. North Dakota income tax questions can be addressed to the North Dakota Tax Department at 877-328-7088 or www.nd.gov/tax.

Changes in Inventory and Value of Hogs by State, Region and Year

Jon T. Biermacher, Professor of Practice and Extension Livestock Development Specialist, and Arif Hossain, Graduate Research Assistant

A number of interesting points surrounding changes in the inventory and value of hogs on farms have taken place over the past several years in the United States and North Dakota, South Dakota, Minnesota and Iowa. Data collected from the USDA's National Agricultural Statistics Service reflecting inventory and value of inventory over time are reported in Table 1. Note that data for inventory of breeding hogs and market hogs are reported for 1975 and 2023 (a 48-year period). Because USDA only started reporting the value of total inventory of hogs on farms in 1993, this data is only reported for 1993 and 2023 (a 20-year period). Even though the data for value of inventory only covers a 20-year span, the changes over that shorter period are interesting.

The inventory of breeding hogs in the U.S. decreased by 21% between 1975 and 2023; however, the change in inventory of market hogs increased by 67% (from 41.69 million to 69.82 million hogs) during the 48-year period. Much of this is attributed to significant increases in breeding productivity, including increases in litter sizes, weaned pigs per sow and final slaughter weight per pig weaned, and significant reductions in mortality and morbidity.

Trends at state and regional levels are similar to what has been observed at the national level. Of the four states evaluated, North Dakota has the smallest inventory of both breeding hogs and market hogs. In 2023, North Dakota total inventory of hogs on farms was approximately 150,000 head, accounting for only 0.6% of the four-state total and only 0.2% of the U.S. total, down by 2.18% of the four-state total and 0.51% of the U.S. total in 1975.

Continued on page 7.

Table 1. Inventory and Value of Inventory of Hogs on Farms by State, Region and Year

Inventory Category	United States	North Dakota	South Dakota	Minnesota	Iowa	4-state region	ND as % of region total	ND as % of US total
Year = 1975 for inventory; year = 1993 for value								
Breeding hogs (million)	7.57	0.06	0.25	0.47	1.83	2.61	3.28%	0.79%
Market hogs (million)	41.69	0.29	1.16	2.54	10.77	14.76	2.69%	0.70%
Total hogs (million head)	49.27	0.35	1.40	3.00	12.60	17.35	2.78%	0.71%
Value of hogs (million $)*	4,340	30	150	360	1,130	1,670	2.65%	0.69%
Year = 2023								
Breeding hogs (million)	6.00	0.04	0.35	0.51	0.87	1.77	4.60%	0.67%
Market hogs (million)	69.82	0.11	1.97	8.79	24.33	35.2	0.45%	0.16%
Total hogs (million head)	75.82	0.15	2.31	9.30	25.20	36.96	0.60%	0.20%
Value of hogs (million $)*	8,880	20	270	1,090	2,990	4,370	0.67%	0.23%
% change in inventory between 1975 and 2023; % change in value between 1993 and 2003								
Breeding hogs (million)	-21%	-33%	40%	9%	-52%	-32%	1.32%	-0.13%
Market hogs (million)	67%	-62%	70%	246%	126%	138%	-2.24%	-0.54%
Total hogs (million head)	54%	-57%	65%	210%	100%	113%	-2.18%	-0.51%
Value of hogs (million $)*	105%	-33%	80%	203%	165%	162%	-1.99%	-0.47%

Source: USDA-NASS. 2024. Found at: https://quickstats.nass.usda.gov [accessed June 1, 2024].

*USDA-NASS started reporting value of hogs in 1993.

Changes in Inventory and Value of Hogs by State, Region and Year — continued from page 6

Compared to South Dakota, Minnesota and Iowa, North Dakota realized significant percent declines in its inventory of breeding hogs (-33%) and markets hogs (-62%) between 1975 and 2023. However, during this same 48-year period, growth in the size of the breeding herds in South Dakota, Minnesota and Iowa were mixed with South Dakota and Minnesota realizing 40% and 9% increases and Iowa realizing a 52% decrease. We suspect that South Dakota and, to some degree, Minnesota inherited some of Iowa's breeding operations over this time. Conversely, over the same 48-year period, South Dakota, Minnesota and Iowa realized tremendous growth in their market (feeder) hog inventory with 70%, 246% and 126% increases, respectively. Between 1975 and 2023, North Dakota's overall change in breeding inventory as a total percent of the four-state region increased by 1.32%, moving from 3.28% of the total region in 1975 to 4.6% in 2023.

At the end of 2023, the value of the total inventory of hogs on farms (breeding and market hogs) in the U.S. was $8.9 billion, representing a significant increase of 105% since the end of 1993. During the same 20-year period (1993 – 2023), the value of inventory of hogs on farms in South Dakota, Minnesota and Iowa increased by 80%, 203% and 165%, respectively, while the value of inventory in North Dakota declined by 33%. The decline in value in North Dakota is due to the decline in both breeding and market hogs, even though the overall production efficiency has increased.

Over the same 48-year period, North Dakota did not experience even a small portion of the growth in inventory of hogs on farms (breeding or feeding) that was realized by the other three states. However, as population and incomes continue to grow globally and issues related to animal biosecurity, public preference for location of swine operations and potential environmental impacts of large confined operations continue to increase in the U.S., North Dakota will continue to be poised as an attractive location to handle additional growth and to accommodate the need for relocation of breeding and feeding hog operations from existing locations in the U.S. and abroad.

Please feel free to write us with any questions at jon.biermacher@ndsu.edu.


mikedabell_istockphoto.com

Incoming Mexican President Shifts GMO Corn Policy

Frayne Olson, Crop Economist/Marketing Specialist

Mexican President-elect Claudia Sheinbaum's cabinet has announced the new administration will focus on self-sufficiency in white corn and has a goal to reduce deforestation tied to the agriculture sector. This is a significant shift from the outgoing administration of Lopez Obrador, Sheinbaum's mentor, who initiated policies to significantly limit the use of genetically modified (GM) corn in Mexico. President Obrador's policy announcement in 2020 initiated an ongoing trade dispute between the U.S. and Mexico concerning U.S. corn exports to Mexico.

This change in administrative focus does not guarantee Mexico's concerns about using GM corn will be eliminated, but it is an important change in viewpoint. A trade panel of the U.S.-Mexico-Canada Agreement (USMCA) trade pact is expected to issue a formal ruling on the current dispute before the end of the year.

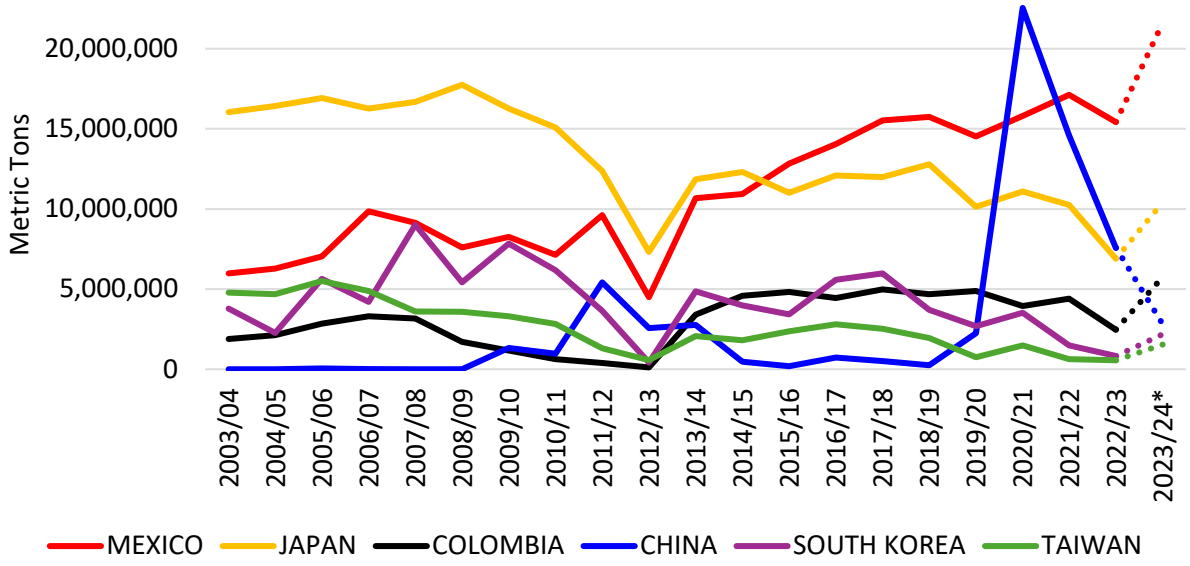
Julio Berdegue has been appointed Minister of Agriculture in the Sheinbaum administration. During a recent Reuters news interview, Berdegue said, "Our objective is not to reduce imports; our objective is to produce more." He added, "Our goal is not self-sufficiency in yellow corn…not in this six-year term."

President-elect Sheinbaum has an "aspirational goal" to reduce deforestation linked to agriculture by half during her six-year term. "It is a very ambitious goal, but I believe that we can (do it)," Berdegue said. He cited estimates that approximately 200,000 hectares (about 494,200 acres) per year of land is cleared for avocado and livestock production.

The change in Mexican policy perspective will have an impact on the outlook for U.S. corn exports to Mexico. Historically, Mexico has been the largest export destination for U.S. corn. Almost all of Mexico's corn imports from the U.S. have been yellow corn, primarily used as livestock feed. Mexican domestic production has focused on white corn, primarily used for tortillas. A small amount of yellow corn is used for human food production.

U.S. corn exports to Mexico have reached record levels during the current 2023/24 marketing year, despite the ongoing trade dispute. Figure 1 shows the top U.S. corn export destinations from the 2004/05 through 2023/24 marketing years. Note the 2023/24 total is not the full marketing year but is the accumulated export commitments from Sept. 1, 2023, to June 27, 2024.

Figure 1. Top Six U.S. Corn Export Destinations



2023/24* — Total Export Commitments from September 1, 2023, to June 27, 2024

USDA Export Sales Database

Continued on page 9.

Incoming Mexican President Shifts GMO Corn Policy – continued from page 4

The primary reason for the strong 2023/24 marketing year export pace is drought conditions in several key Mexican corn production regions in 2023. Figure 2 shows total Mexican corn production by municipality, or county.

Even though growing conditions for Mexico's 2024 corn crop have improved from last year, current crop condition ratings remain poor. Figure 3 shows the most recent vegetative health estimates for Mexico, using the Normalized Difference Vegetation Index (NDVI). The NDVI is a measure of vegetative health derived from satellite imagery. Figure 3 shows the departure, or deviation, from normal. Notice that the NDVI deviation remains below normal for several of the key corn production regions.

The June USDA World Agricultural Supply and Demand Estimates (WASDE) projects 2024/25 Mexican corn production at 25.0 million metric tons, which is a slight improvement from last year's production of 23.3 million metric tons. Even with slightly higher production levels, USDA is forecasting 2024/25 Mexican corn imports at 21.8 million metric tons, versus 21.1 million metric tons last year.

This suggests that U.S. corn exports to Mexico should remain strong in 2024/25. However, the forecast also assumes U.S. corn prices remain competitive in the world market, the Mexican economy continues to grow, and trade tensions between the U.S. and Mexico remain low.

Figure 2. Three-year Average Mexican Corn Production by Municipality

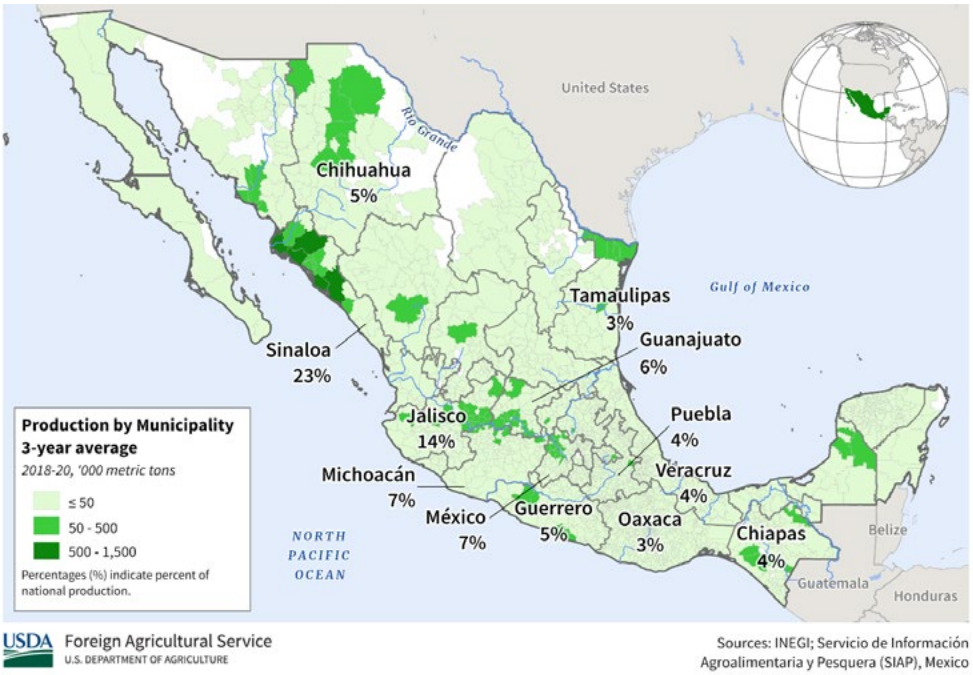
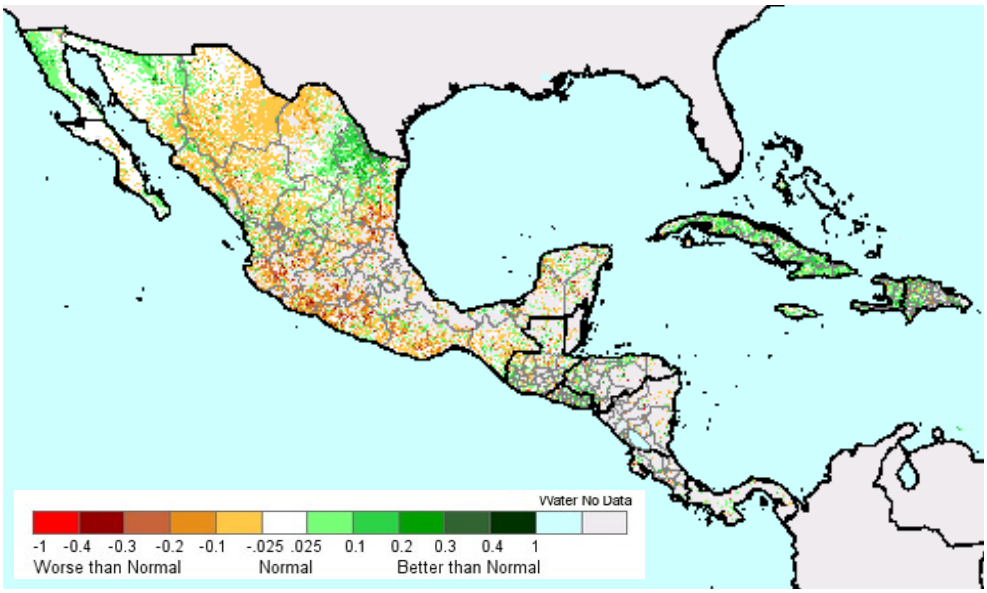


Figure 3. Normalized Difference Vegetation Index (NDVI) Departure from Normal for Mexico and Central America



Source: NDVI MODIS-Terra at 250-m
USDA Foreign Agriculture Service — Crop Explorer