NATIONAL CORN GROWERS ASSOCIATION

NCGA High Costs Series

AUGUST 2025

High Production Costs Series

The National Corn Growers Association is concerned about the tough financial reality facing many farmers today. While NCGA maintains a persistent focus on driving additional sources of demand for U.S. corn in effort to improve the outlook, it is also analyzing input costs that remain near record high in a three-part series highlighting the financial challenges facing corn farmers and a deeper look at the cost of growing corn.

Part 1 is an evaluation of costs relative to prices and breakeven levels for corn. Part 2 provides a look at inflation adjusted costs including comparisons to challenging financial periods of the past. Part 3 dissects what is driving high production costs with a breakdown of individual cost components.

Part 1: Exceedingly High Production Costs Unaffordable for Corn Growers

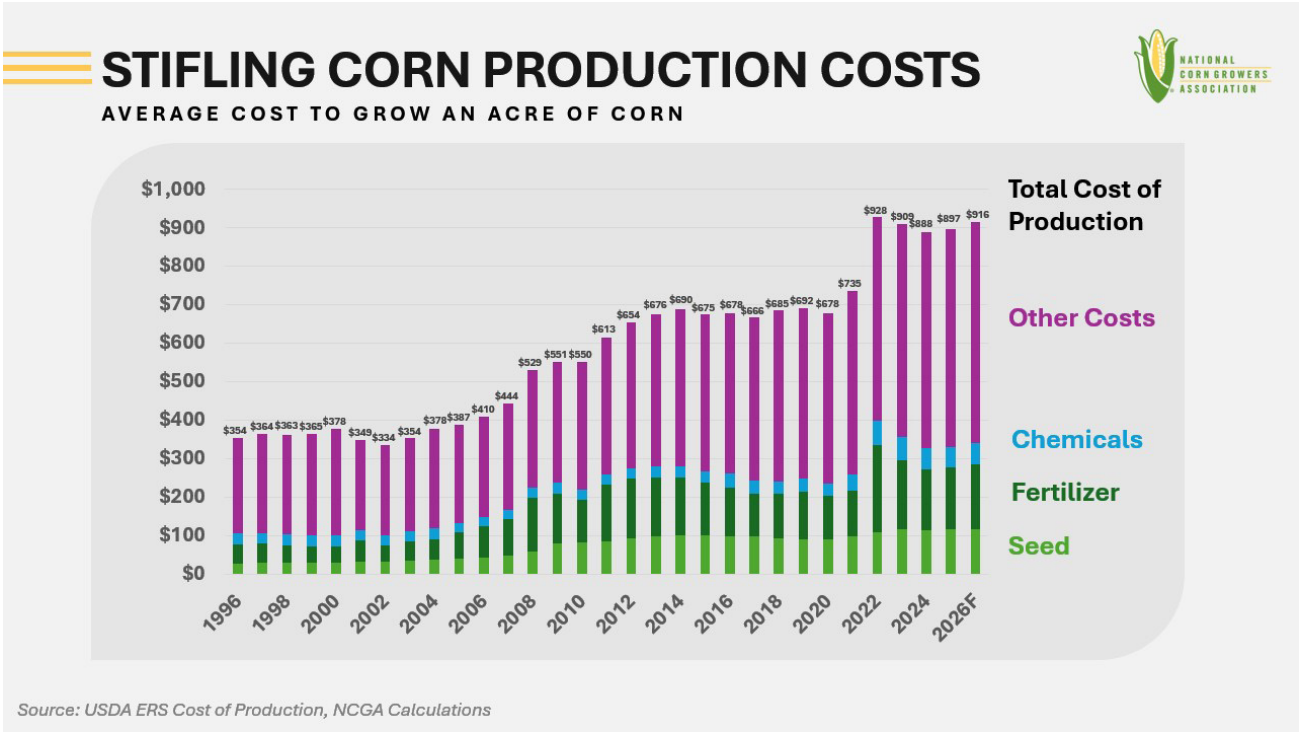
Average production costs have dropped just three percent from their peak in 2022 to 2025 while corn prices have declined by over 50 percent over the same period. Even with higher yields, farmers are unlikely to be able to offset these high costs, resulting in continued and widening negative profit margins for the third consecutive year. The outlook for 2026 is even worse, with the forecast for lower corn prices and rising costs.

Extreme High Costs Relative to Price

The average cost to grow corn has dropped just 3 percent from 2022 to 2025 while corn prices have dropped more than 50 percent since 2022.

The average total cost to grow an acre of corn in the United States jumped 26 percent from 2021 to 2022, to a record high of $928 per acre. This notable increase deviated from the steady upward trend from the mid-1990s through 2021. Since that peak in 2022, costs have dropped only slightly. The average cost to grow an acre of corn in 2025 is $897 per acre, only 3.3% lower than the 2022 peak.

This is particularly problematic for farmers trying to cash flow high production costs while the corn price has tanked. The nearby futures contract for corn topped $8 per bushel in 2022 and is currently well below $4 per bushel.



Source: USDA ERS Cost of Production, NCGA Calculations

Market Below Breakeven Price for Corn

Even with higher-than-expected yields, the average farmer cannot yield enough to avoid significant negative profit margins this year.

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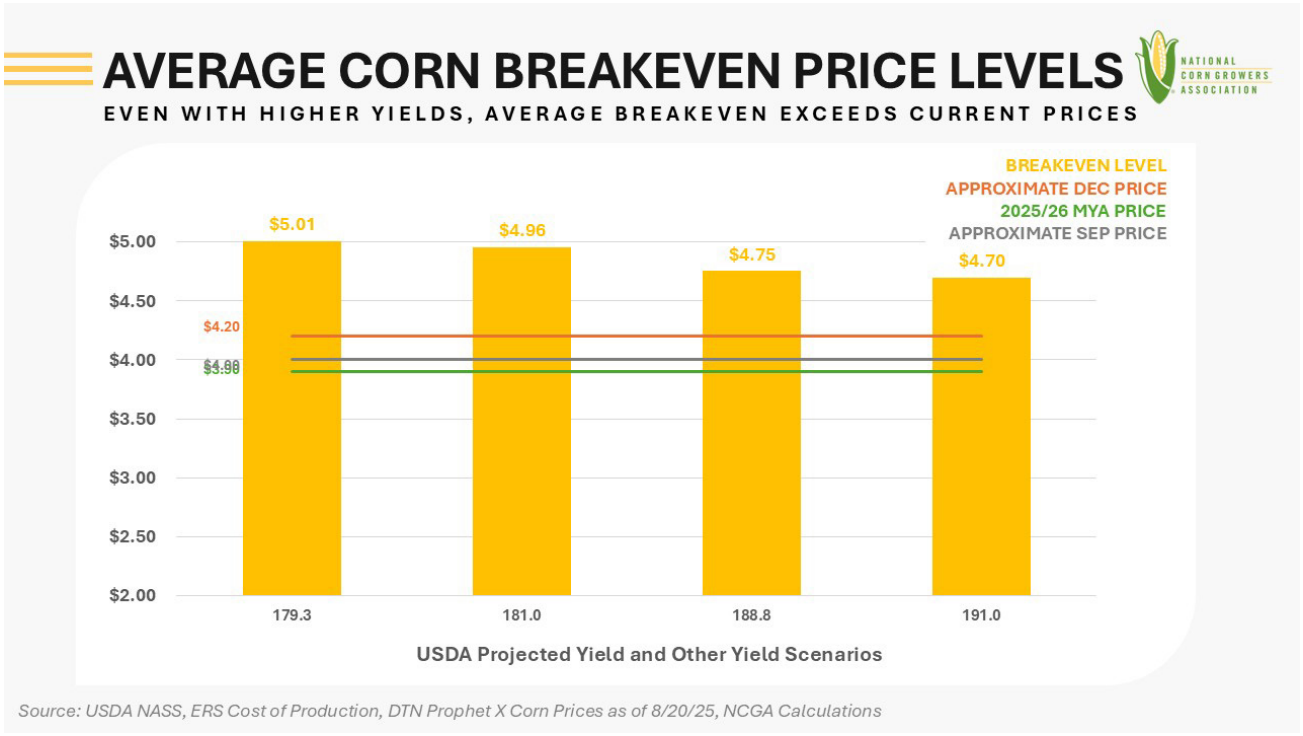
USDA raised their forecast corn yield for 2025 from 181 bushels per acre to 188.8 bushels per acre in their August report, which, if realized, would be the largest crop on record by far. Using the forecast $897 average cost per acre to grow corn, the average breakeven price for corn is $4.75 per bushel. The increased yield projection reduces the average cost per bushel from what was a higher breakeven at $4.96 per bushel with a 181 bushel per acre yield projection.

But USDA also decreased the forecast for market-year average farm price, the average price farmers will receive for the 2025 corn crop from $4.20 to $3.90 per bushel. A farmer with an average cost of production who receives the expected average price is facing an $0.85 per bushel loss.

The September (December) corn futures price represents the price for corn delivered in September (December). These contracts reflect the market's expectations of the price of corn from the upcoming harvest delivered in the coming months. The September (December) contract has recently traded around $3.80 ($4.00) per bushel – in line with the $3.90 market year average price USDA is currently projecting. The price the farmer receives is based on the contract price for the delivery month and a basis adjustment that reflects the local market.



Source: USDA NASS, ERS Cost of Production, DTN Prophet X Corn Prices as of 8/20/25, NCGA Calculations

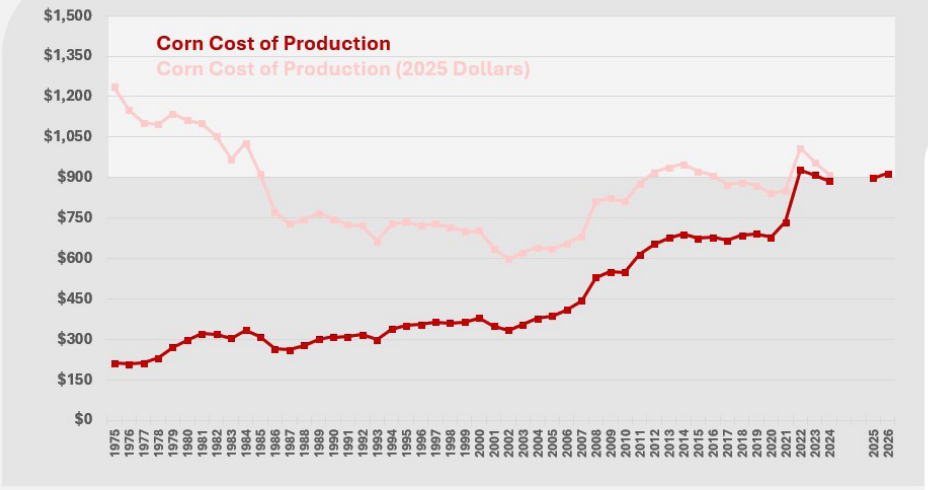
Part 2: Investigating the Influence of Inflation on Production Costs

Rising inflation significantly affects the costs farmers face for inputs, machinery, and services. When costs rise for the businesses selling these products and services that farmers need, they can raise their prices to stay profitable or at least economically viable. That translates to higher costs for farmers.

These businesses may face short-term influences of supply and demand fundamentals and other supply chain factors related to their specific product or service. Over longer periods of times farm input prices are significantly correlated with general inflation.

INFLATION ADJUSTED CORN COSTS

RELATIVE CORN PRODUCTION COSTS HISTORICLY HIGH, EXCEPT 1975-1985



The only period with sustained higher inflation-adjusted costs than 2022-2026F was 1975-1985, a period of farm financial crisis.

Inflation adjusted costs from 2012-2016 exceeded $900 per acre and marked a turning point for farm financial strain.

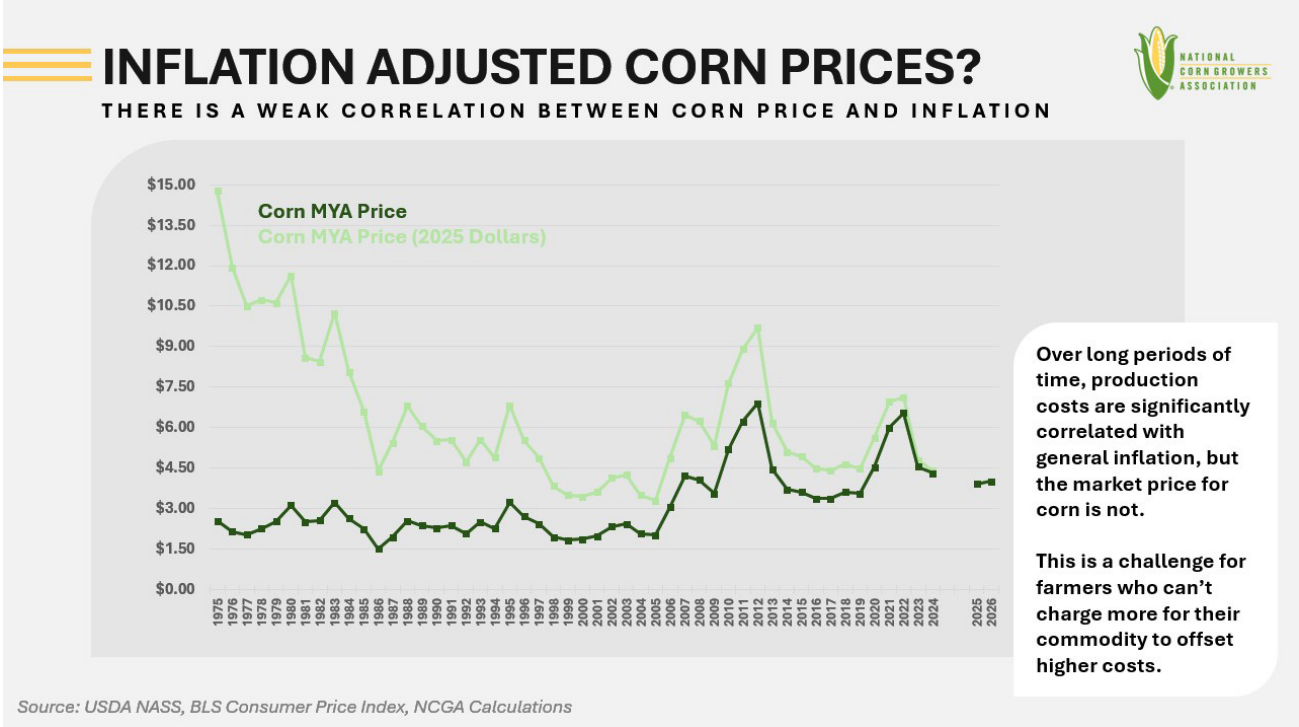
Source: USDA ERS Cost of Production, BLS Consumer Price Index, NCGA Calculations

This USDA cost of production dataset goes back to 1975. When historical costs are indexed to 2025 dollars, there are two historical periods in which costs have been relatively higher than the current 2022 to 2025 period: 1975 to 1985 and 2012 to 2016. Inflation adjusted cost of production for corn was only slightly lower from 2017 to 2021, before the current period extending from 2022 through at least 2026. In other words, inflation adjusted cost of production for corn has been consistently high since 2012. In that time, market year average corn prices were relatively very low in all but three years (2012, 2021, and 2022).

For the 1975 to 1985 period, the average annual production cost in 2025 dollars was $1,082 per acre. The median market-year average price of those years was $2.52 per bushel of corn. If those prices were in 2025 dollars the median would be $10.51. While these costs are likely comparative to what some corn growers with higher-than-average production costs are seeing today, it does not seem feasible that the inflation-adjusted price would be offered today anywhere in the country reflecting the weak correlation of corn price and inflation.

One of the challenges of farming is that production costs are significantly correlated with general inflation over long periods of time, but the market price for corn is not.

Farmers sell a commodity at a price set by the market, regardless of what costs are. Market supply and demand factors significantly influence corn prices, more than inflation rates. The link between inflation and the price of corn is tenuous.



Comparison to Challenging Farm Financial Periods of the Past

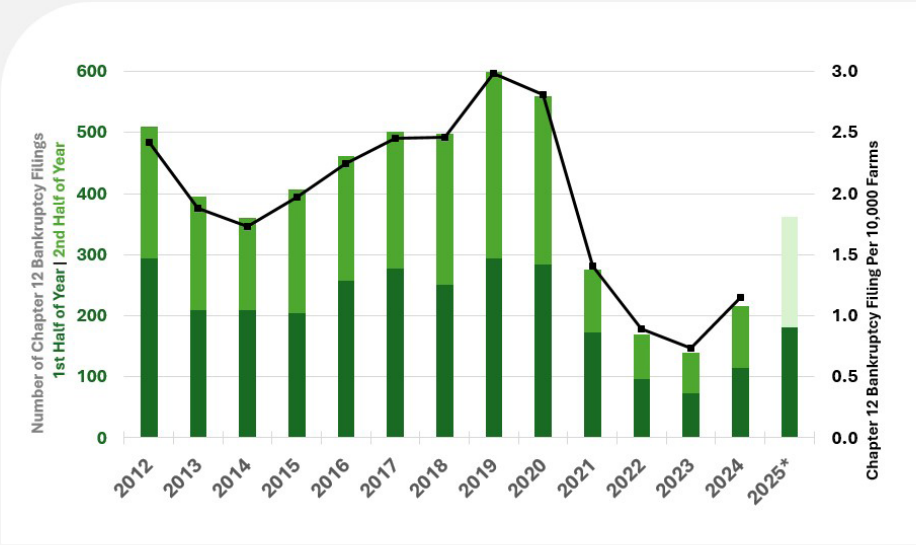
In the 1975 to 1985 period, the net profit (gross corn sales less corn costs) for corn was negative in nine of the eleven years. The early to mid-1980s was a period of significant farm financial crisis leading to a rise in bankruptcies. Congress introduced Chapter 12 of the Bankruptcy Code in 1986 specifically for family farmers and fisherman. This was followed by a major influx of over 6,000 Chapter 12 bankruptcy filings by the end of 1987, significantly more than any other time since. In the past twenty-five years, annual Chapter 12 bankruptcy filings have remained below 800.

Chapter 12 bankruptcy filings as a percentage of total farms rose from 2014 to 2019 and remained high in 2020, before dropping significantly in 2021. The high farm bankruptcy trend coincides with the period of sustained high production costs and low prices for corn. The declining trend in 2021 coincides with higher corn prices. Other commodities also experienced similar cost and price trends over this period; and notably, farmers and businesses across the farm sector received high levels of COVID relief and other ad hoc payments that supported farm income in the low bankruptcy years.

Lower government payments in recent years paired with declining prices and sustained high costs, even when adjusted for inflation, coincide with the rising trend in Chapter 12 bankruptcies from the low point in 2023. In 2024, there were 216 Chapter 12 Bankruptcy filings. This was up from 139 in 2023 and broke what had been a downward trend since 2019. In the first half of 2025 there were 181 Chapter 12 Bankruptcy filings, well ahead of 115 at the same point in 2024, signaling growing farm financial pressures.

FARM BANKRUPTCIES RISING

CHAPTER 12 BANKRUPTCY FILINGS



Costs of production at historically high levels (even when adjusted for inflation) and low market year average corn prices coincide with an upward trend in farm bankruptcies from what have been historically low levels in recent years

Source: US Courts, NCGA Calculations

Part 3: What Components Are Driving High Production Costs?

Costs are broken into two groups: operating costs and overhead costs. Using USDA averages, each group represents about half of the total production cost for corn. Costs have increased over time across virtually all individual cost categories in both groups.

The total cost to grow corn, including both operating costs and overhead costs, has approximately doubled since 2007. But the $3.90 average farm price expected for 2025 is lower than the $4.20 average farmers received in 2007.

Looking deeper into individual costs, the only decline from 2007 to 2025 is in fuel, lube, and electricity, dropping 18% in that time.

Meanwhile the costs of fertilizer, interest, and general farm overhead increased more than 70%; seed, chemicals, hired labor, taxes and insurance, machinery/equipment, and land more than doubled; and custom services and repairs more than tripled.

For this comparison nominal values are intentionally used to show how the cost environment has approximately doubled despite the expectation for an even lower average farm price.

CHANGES IN CORN PRICE & FARM COSTS

COMPARE 2007 TO 2025: LOWER CORN PRICE, DOUBLE COST TO GROW IT

	2007	2025	2007 to 2025
	Cost Per Acre		*% Change*
Operating Costs			
Seed	$49.04	$115.49	135.5%
Chemicals	$24.38	$52.89	116.9%
Custom Services	$10.93	$36.89	237.5%
Fertilizer	$93.13	$161.59	73.5%
Fuel, Lube, and Electricity	$31.58	$25.91	-18.0%
Interest on Operating Capital	$4.94	$8.47	71.5%
Other Variable Expenses	$0.13	$0.30	130.8%
Repairs	$14.86	$47.70	221.0%
Total Operating Costs	$228.99	$449.23	96.2%
Overhead Costs			
Capital Recovery of Machinery and Equipment	$69.77	$169.51	143.0%
General Farm Overhead	$13.88	$25.86	86.3%
Hired Labor	$2.26	$4.64	105.3%
Opportunity Cost of Land	$97.21	$195.94	101.6%
Opportunity Cost of Unpaid Labor	$24.34	$31.38	28.9%
Taxes and Insurance	$7.52	$20.87	177.5%
Total Overhead Costs	$214.98	$448.20	108.5%
Total Costs	$443.97	$897.44	102.1%
Market Year Average Farm Price	$4.20	$3.90	-7.1%

Source: USDA NASS, ERS Cost of Production, NCGA Calculations

Overhead Costs Overview

Land costs increased 102% from 2007 to 2025, rising to a projected cost of $196 per acre in 2025.

The opportunity cost of land is the single largest expenditure in the average cost of production estimates. USDA considers this value the potential income foregone by using the land for farming instead of renting it out or pursuing other economic activities. The $196 per acre estimate for 2025 is notably higher than the owned land cost and notably lower than farmland rental rates in major corn growing states.

Actual land costs vary greatly across farms. If we remove land cost, the remaining average cost to grow corn in 2025 is $701.50 per acre. With an average 188.8 bushel per acre yield, the resulting non-land cost breakeven is $3.72. The September corn contract closed at $3.8375 on August 15, 2025.

Even with the exceptional yields expected and removing land costs from the equation, the current corn price is barely at break even for a farmer with average costs.

Several factors drive farmland values such as interest rates, rental rates, perceived stability of farmland as an investment asset, and government policy that influences farm returns. Another factor is the finite and decreasing supply of land used in farming in the U.S. In 2024, there were 876.5 million acres of land in farms, down 82 million acres, or 9.4%, over the past two decades.

Machinery and equipment costs increased 143% since 2007 to a projected cost of $170 per acre for 2025.

The capital recovery cost figure that USDA uses is an estimate of the cost of replacing the capital investment in machinery and equipment that is used in the annual crop production process, plus interest that the remaining capital could have earned in an alternative use. This figure is based on replacement prices paid for farm machinery each year and represents another major expense item for corn growers.

Machinery and equipment costs have risen due to several factors such as industry production costs, cost of materials and labor, and general market and supply chain issues.

Operating Costs Overview

Three critical inputs make up 73% of the operating costs for growing corn: seed, chemicals and fertilizer. These inputs comprise more than one-third of the total costs to grow corn.

Seed costs per acre have increased 135% since 2007 to a projected cost of $115 per acre for 2025.

Some increase in seed costs can be attributed to improvements in genetics and breeding techniques that have contributed to greater productivity over time. However, the per bushel cost of seed has also nearly doubled. On average, seed costs divide out to $0.33 per bushel for 2007 and $0.61 per bushel for 2025, an 88% increase per bushel. In other words, even with higher yields, seed costs have increased more than is offset by an increase in yield.

Attributing the full value of higher yields to seed costs only results in a small offset in increased seed costs.

Chemical costs increased 117% since 2007 to a projected cost of $53 per acre for 2025.

According to the USDA Agricultural Chemical Use Program data, herbicides account for over 90% of chemical pesticide use on corn acres and average herbicide use per acre is roughly the same as in 2007. But fungicide use has changed; fungicides for corn became widely available in the mid-2000s. USDA data shows fungicide was used on 8% of corn acres in 2010, the first year this figure is available, and 19% of corn acres in 2021, the most recent year available. Given the prevalence of fungal concerns in fields and benefits fungicides provide to corn crops, it's likely fungicide use on corn acres has continued to increase. Based on the Crop Protection Network Fungicide ROI Calculator, twelve corn fungicides options range in price from $19 to $37 per acre, which alone could account for the increase in farm chemical costs since 2007.

Fertilizer costs increased 74% since 2007 to a projected cost of $162 per acre for 2025.

Farmers must sell record amounts of corn to purchase MAP, DAP, UAN 28%, UAN 32% and Urea fertilizer to meet their fertility needs.

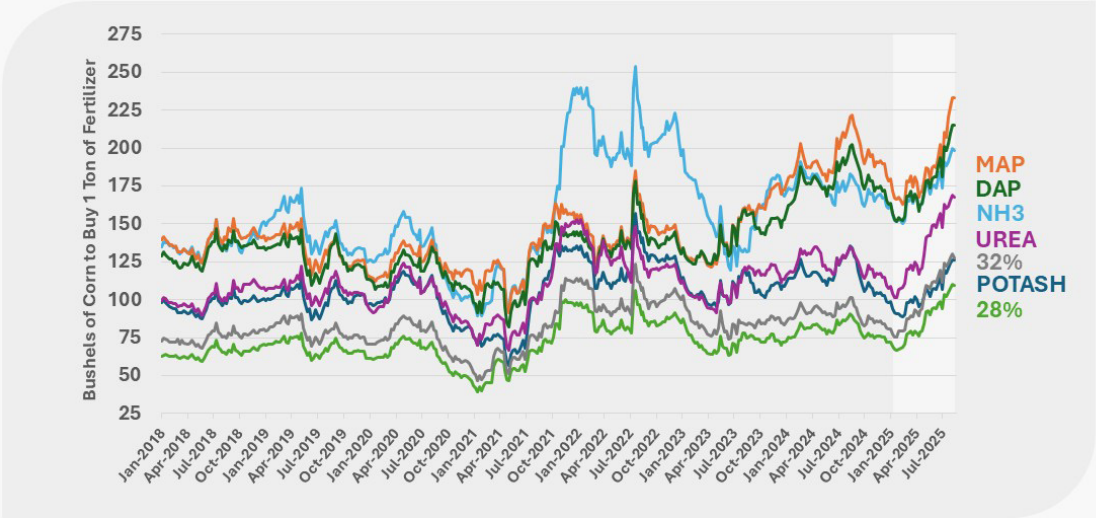
Fertilizer makes up 36% of operating costs and 18% of the total cost to grow corn. Higher fertilizer prices hit farm budgets hard given its magnitude as a cost item.

Current retail fertilizer prices are well below the 2022 spike but above the average price level of the previous decade and rising further. In 2025, retail prices for potash and phosphate fertilizers DAP and MAP rose 9-12%, while retail prices for nitrogen fertilizers urea, UAN 28%, and UAN 32% rose 40-43%. High fertilizer prices may be attributed to numerous factors such as tariff uncertainty, ongoing countervailing duties on fertilizers, geopolitical issues, and constrained market flows.

The cost of fertilizer relative to corn is elevating concern. Compared to the 2012-to-2021-decade average price when retail fertilizer prices were fairly stable, current prices are over 50% higher for phosphate fertilizers, and at least 40% higher for nitrogen fertilizers urea, UAN 28% and UAN 32%. Current corn prices are 15% lower than the decade average daily price. Farmers are selling many more bushels of corn to buy the same one ton of fertilizer.

CORN'S FERTILIZER PURCHASING POWER

BUSHELS OF CORN NEEDED TO BUY ONE TON OF FERTILIZER



Source: DTN ProphetX DTN Weekly Retail Fertilizer Prices & Nearby Corn Price through 8/15/25, NCGA Calculations

The NCGA Corn Economy report from July 2025 showed costs of fertilizer in the "currency of corn" at or near record high levels, depending on metrics used and fertilizer evaluated. Since then, the numbers have climbed to even higher levels. As of mid-August, it takes about 30% more bushels of corn to buy MAP or DAP compared to the first of the year, and over 50% more bushels of corn to buy UAN 28%, UAN 32%, or urea.

CORN'S FERTILIZER PURCHASING POWER

BUSHELS OF CORN NEEDED TO BUY ONE TON OF FERTILIZER

FERTILIZER PRODUCT	JANUARY 3, 2025	AUGUST 15, 2025
MAP	179	233
DAP	164	215
UAN 28%	72	110
UAN 32%	81	127
UREA	108	167

Source: DTN ProphetX DTN Weekly Retail Fertilizer Prices & Nearby Corn Price through 8/15/25, NCGA Calculations

Series Summary

Rising production costs combined with sharply declining corn prices have created significant financial challenges for U.S. corn growers, leading to sustained negative profit margins. Despite impressive yield prospects, the economic outlook remains bleak due to unfavorable price and cost trends.

Rising inflation significantly affects the farmer's costs for inputs, machinery, and services, leading to sustained high production costs that aren't always matched by market prices for commodities like corn. The disconnect between inflation and corn prices has contributed to financial pressures on farmers, including increased bankruptcy filings in recent years.

Corn production costs have roughly doubled since 2007, while the average farm price for corn in 2025 is expected to be lower than in 2007, creating a challenging economic environment for farmers. Both operating and overhead costs contribute equally to total production costs, with notable increases across most cost categories.

While NCGA maintains a persistent focus on driving additional sources of demand for U.S. corn in effort to improve the outlook for price, input costs that remain near record high are another piece of the profitability equation bringing financial stress to farmers. The top priorities of NCGA are driving demand for U.S. corn and corn products and protecting U.S. corn farmers' profitability and ability to operate.

NCGA.COM/CornEconomy

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