



COMMODITY PRICING TOOLS

Hedging with futures and options



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OBJECTIVE

- Examine basic grain pricing tools
 - ✓ Cash/forward contracts
 - ✓ Futures contracts
 - ✓ Put options
 - ✓ Paperfarming

PRICING TOOLS FOR THE SELLER

1. Forward contract
2. Selling futures contracts (short hedge)
3. Buy put options to establish a minimum price
4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming")
5. Price windows/fences: Setting min./max. prices with put and call options
6. Selling call options

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- ~~5. Price windows/fences: Setting min./max. prices with put and call options~~
- ~~6. Selling call options~~

May 4 2026 actual market prices

- Harvest bid: \$4.42/bu.
- Dec'26 corn futures: \$5.05/bu.
- Expected basis at harvest: 45 cents under
- 500 December put option: 35 cents/bu.
- 510 December call option: 35 cents/bu.

PRICING TOOLS FOR THE SELLER

1. **Forward contract**
2. Selling futures contracts (short hedge)
3. Buy put options to establish a minimum price
4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming")

FORWARD CONTRACT

- + final price known (fixed basis)
- + contract for any bushel amount
- + no brokerage fees or margins
- ends in delivery
- sometimes difficult to get a fair basis
- institutional risk!

ASSIGNMENT #1 (SENT MAY 18)

Make FORWARD sales...

- 25,000 bushels of corn (I sold at \$4.29)
- 10,000 bushels of soybeans (I sold at \$11.19)

PRICING TOOLS FOR THE SELLER

\$4.42 and no upside

1. Forward contract
2. Selling futures contracts (short hedge)
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PRICING TOOLS FOR THE SELLER

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HEDGING WITH FUTURES CONTRACTS

To buy or sell a futures contract as a temporary substitute for an intended later transaction in the cash market.

HEDGING WITH FUTURES CONTRACTS

Two basic types of hedging...

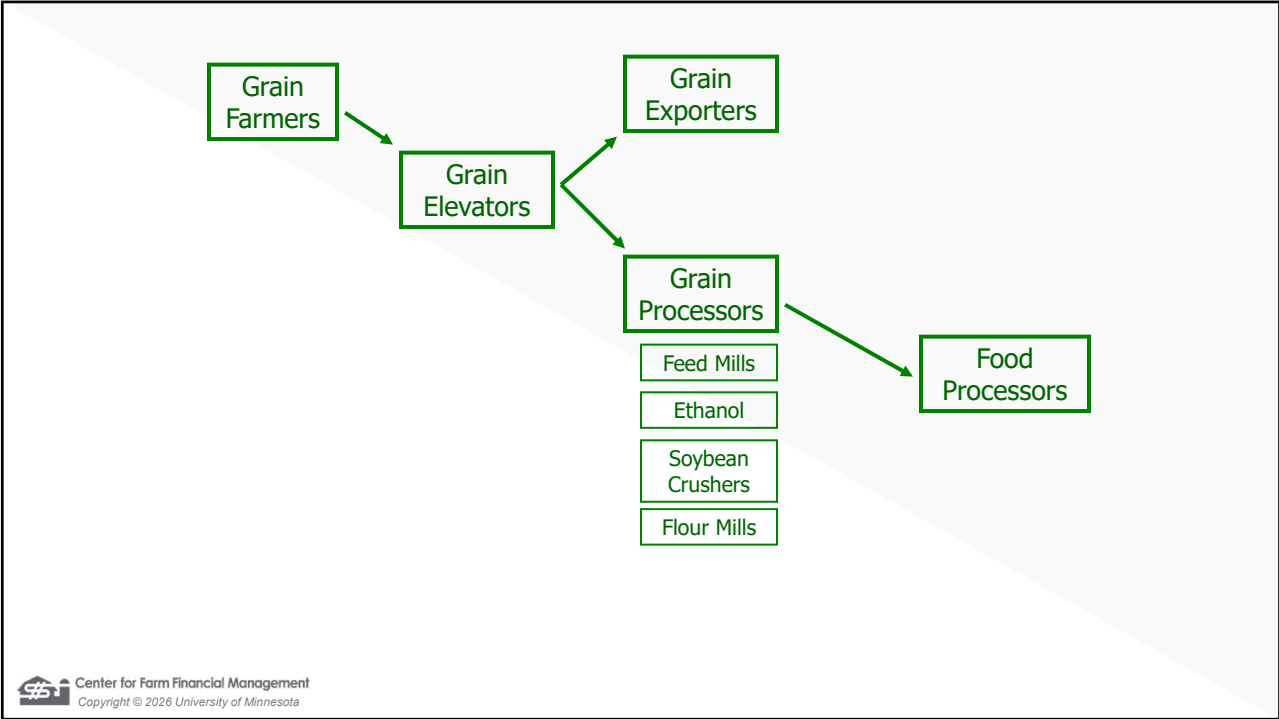
- short hedge
- long hedge

HEDGING WITH FUTURES CONTRACTS

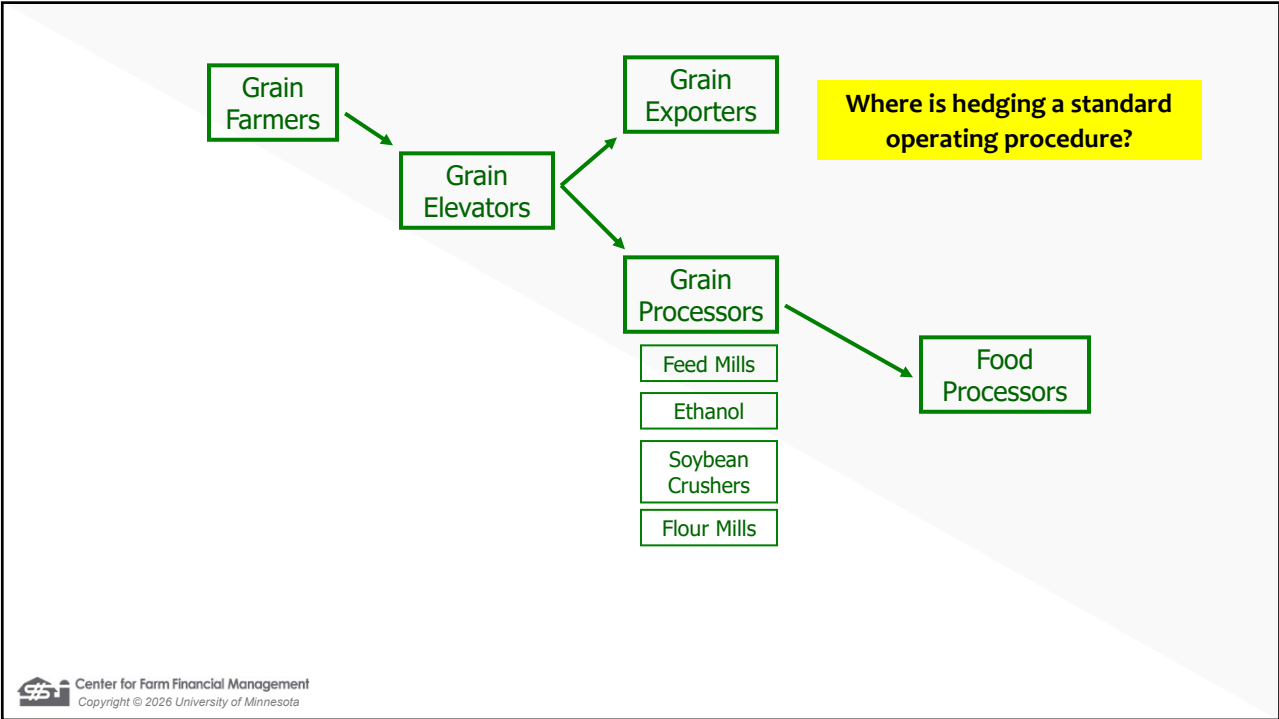
- **short hedge**: the sales of futures against cash ownership, either inventory or forward purchases
- protects against falling prices

WHO ARE THE SHORT HEDGERS?

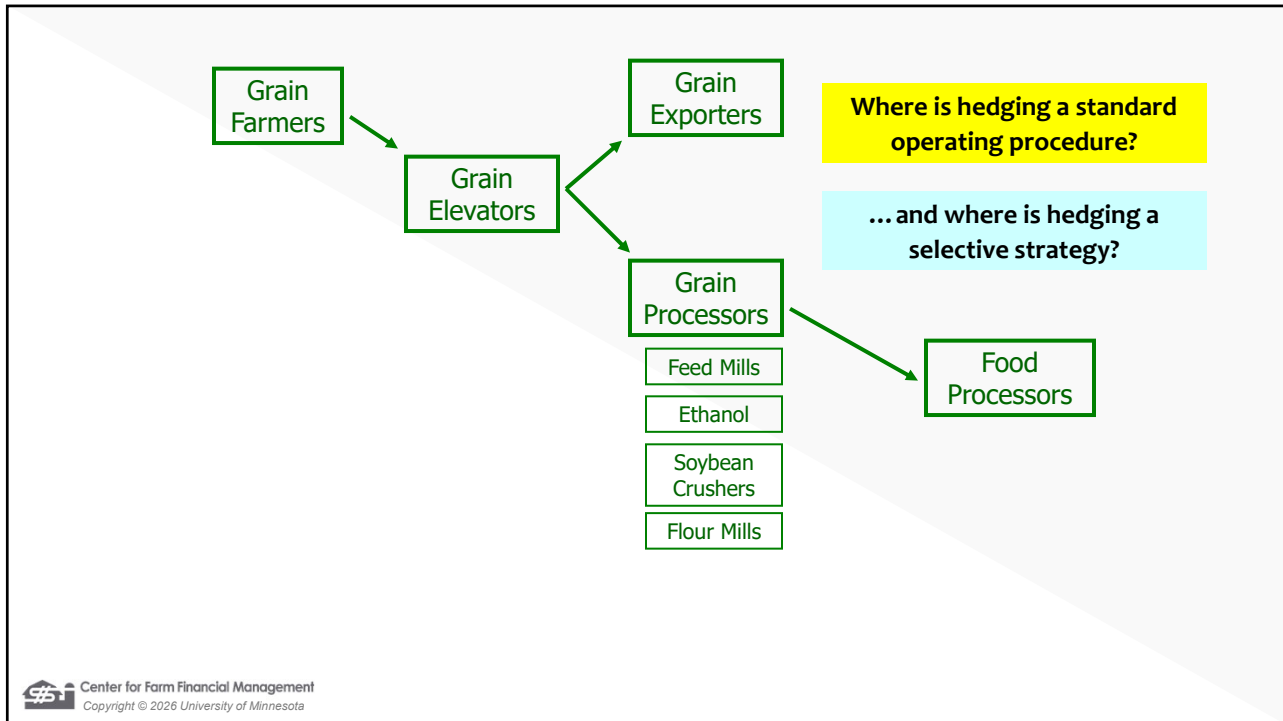
- grain producers
- livestock producers
- dairy producers
- grain elevators
- processors



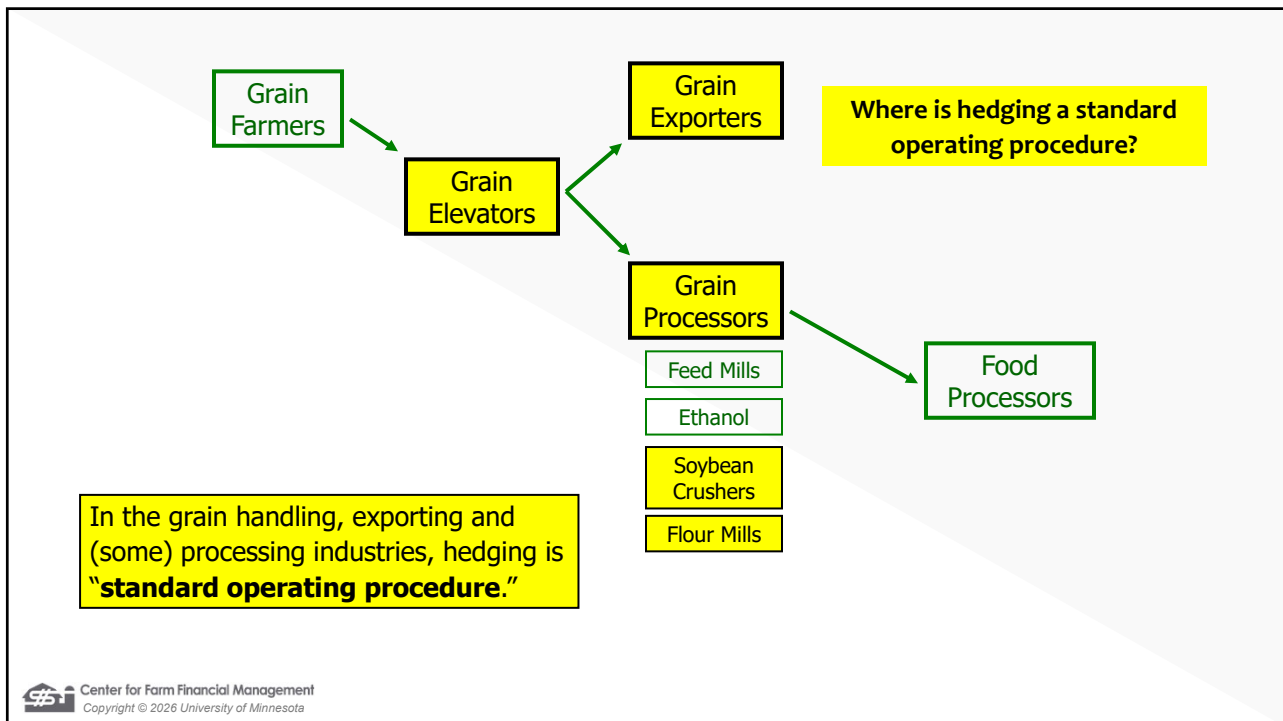
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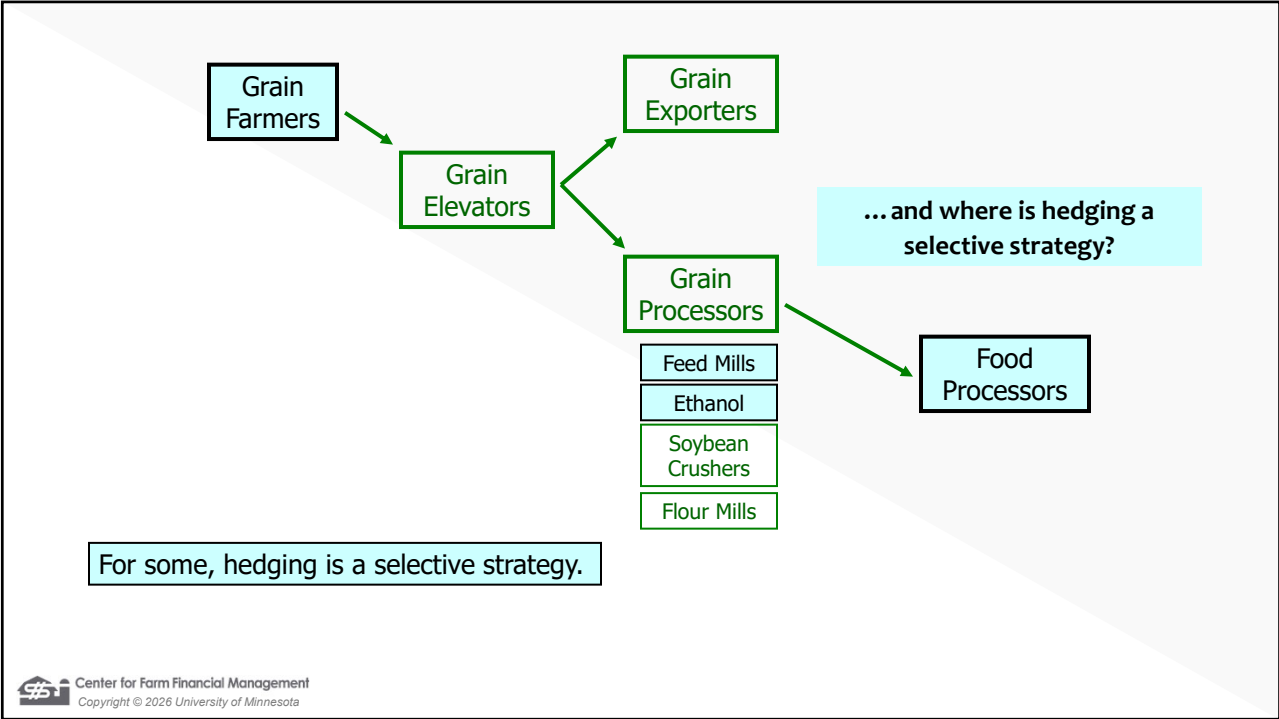
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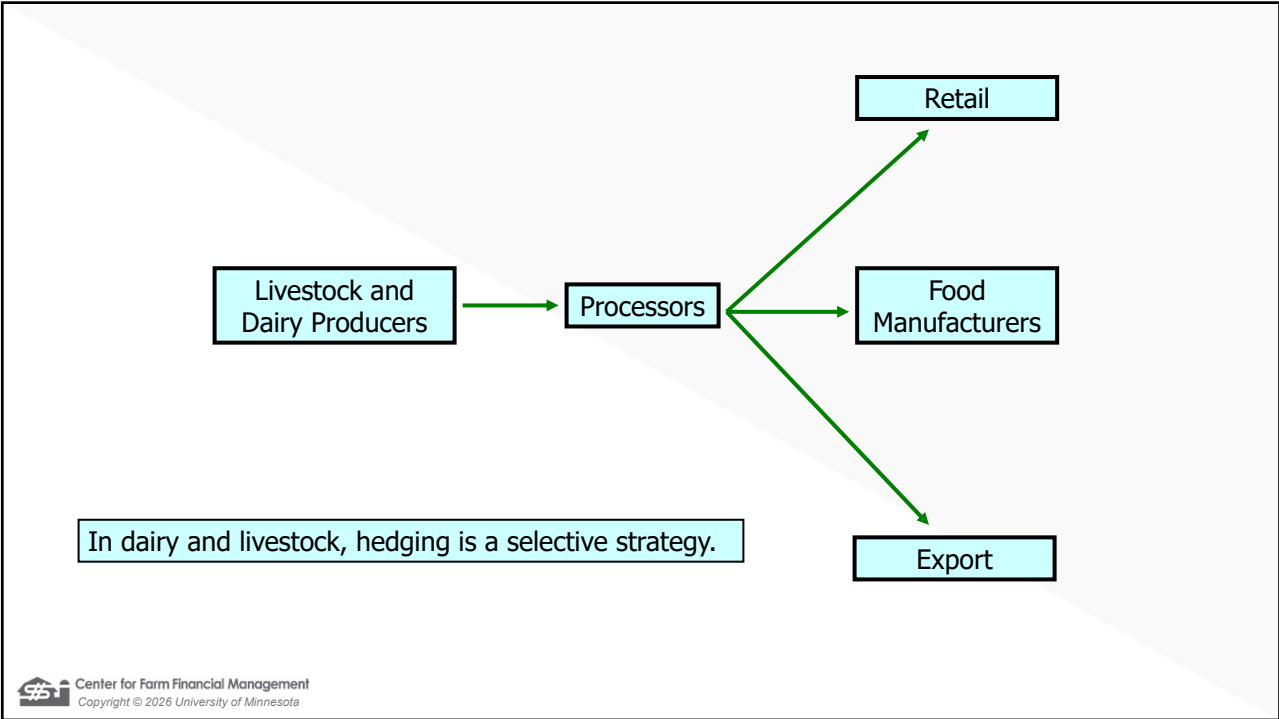
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SELLING FUTURES

- + price often higher than forward contract
- + not locked into delivery
- 5,000 bushel units
- margin account and margin risk
- basis risk

SELLING FUTURES

- + **price often higher than forward contract**
- + **not locked into delivery**
- 5,000 bushel units
- margin account and margin risk
- basis risk

Why?

SLEEPY EYE, MN NEW CROP CORN BASIS, 2016-2025

- Comparing new crop basis bids in early May and early October (harvest)
- 8 years (80%) the basis improved
- 1 year (10%) basis was steady
- **1 year** (10%) the basis weakened

Year	Early May	Early Oct	Basis Improvement
2016	(0.56)	(0.46)	0.10
2017	(0.58)	(0.66)	(0.08)
2018	(0.62)	(0.55)	0.07
2019	(0.55)	(0.30)	0.25
2020	(0.50)	(0.50)	0.00
2021	(0.45)	(0.15)	0.30
2022	(0.40)	(0.25)	0.15
2023	(0.45)	(0.35)	0.10
2024	(0.50)	(0.35)	0.15
2025	(0.50)	(0.48)	0.02
2026	(0.60)		
average	(0.51)	(0.41)	0.11

All figures are in \$/bushel.
 Early May figures represent the new crop corn bid in early May, less December futures.
 Early October figures represent the harvest price of corn, less December futures.

SLEEPY EYE, MN NEW CROP SOYBEAN BASIS, 2016-2025

- Comparing new crop basis bids in early May and early October (harvest)
- 5 years (50%) the basis improved
- 3 years (30%) basis was steady
- **2 years** (20%) the basis weakened

Year	Early May	Early Oct	Basis Improvement
2016	(0.75)	(0.70)	0.05
2017	(0.80)	(0.80)	0.00
2018	(0.80)	(1.00)	(0.20)
2019	(0.90)	(0.90)	0.00
2020	(0.80)	(0.70)	0.10
2021	(0.65)	(0.30)	0.35
2022	(0.50)	(0.38)	0.12
2023	(0.65)	(0.65)	0.00
2024	(0.70)	(0.50)	0.20
2025	(0.65)	(0.85)	(0.20)
2026	(0.85)		
average	(0.72)	(0.68)	0.04

All figures are in \$/bushel.
 Early May figures represent the new crop soybean bid in early May, less November futures.
 Early October figures represent the harvest price of soybeans, less November futures.

ASSIGNMENT #2 (SENT MAY 26)

Make **FUTURES** sales...

- Four contracts Dec'26 futures (25,000 bushels of corn) (I sold at \$4.85)
- One contract Nov'26 futures (10,000 bushels of soybeans) (I sold at \$11.85)

SELLING FUTURES TO ESTABLISH A PRICE

$$\frac{5.05^*}{\text{fut. price (when sold)}} + \frac{(-0.45)}{\text{expected basis}} - \frac{.01}{\text{fees}} = \frac{4.59}{\text{expected price}}$$

* Based on May 4 market prices

SELLING FUTURES TO ESTABLISH A PRICE

$$\frac{5.05}{\text{fut. price (when sold)}} + \frac{(-0.45)}{\text{expected basis}} - \frac{.01}{\text{fees}} = \frac{4.59}{\text{expected price}}$$

Your customer sold futures, and higher prices will lead to margin calls.

Between now and harvest, do you want higher or lower prices?

Are margin calls good?

MARGINS – THE BANKER'S CHALLENGE!

1. All traders—including hedgers—must post margin, a guarantee of performance
2. Gains and losses on futures positions are “marked-to-market” daily
3. Established by exchanges (~5-10% of contract value)



Forward contracting and/or selling futures in May.

Is there value in pricing grain early?



Meet Barney Binless and Terry Timer



Barney Binless

Barney has no marketing plan, no storage and no interest in early pricing. He is our benchmark. His price is the harvest price each year.

Terry Timer



Terry knows that seasonal highs in new crop futures often occur in the spring. For corn and soybeans, she prices 20% increments, March-June. For wheat, Feb-May. Prices must be above production costs.

CBOT DECEMBER CORN FUTURES, 2000-2025

- ✓ 20 years (77%) the market declined
- ✓ 6 years (23%) the market improved

Year	1-May	1-Oct	Change
2000	2.62	1.99	(0.63)
2001	2.27	2.11	(0.16)
2002	2.20	2.56	0.36
2003	2.33	2.20	(0.13)
2004	3.17	2.06	(1.11)
2005	2.27	2.06	(0.21)
2006	2.72	2.68	(0.04)
2007	3.79	3.69	(0.10)
2008	6.32	4.84	(1.48)
2009	4.33	3.41	(0.93)
2010	3.92	4.66	0.74
2011	6.61	5.93	(0.69)
2012	5.39	7.57	2.18
2013	5.51	4.39	(1.12)
2014	5.00	3.21	(1.78)
2015	3.80	3.89	0.09
2016	3.97	3.37	(0.60)
2017	3.95	3.52	(0.43)
2018	4.20	3.66	(0.54)
2019	3.86	3.93	0.06
2020	3.37	3.83	0.46
2021	5.64	5.42	(0.22)
2022	7.42	6.78	(0.65)
2023	5.25	4.89	(0.37)
2024	4.73	4.29	(0.44)
2025	4.47	4.17	(0.31)
2026	4.99		
Average	4.20	3.89	(0.31)

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IOWA AVERAGE CORN PRICES, 1989-2025

Barney Binless harvest price the Friday between Oct 12-18.

Terry is only willing to price insured bushels (80%), if the price is above production costs.

Terry made no pre-harvest sales in 8 corn years.



27 "active" years			
	Terry	Barney	Terry's advantage
corn	3.46	3.23	0.23
years >Barney	22 (81%)		
years >10%	14	3	

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CBOT NOVEMBER SOYBEAN FUTURES, 2000-2025

- ✓ 16 years (62%) the market declined
- ✓ 10 years (38%) the market improved

Year	1-May	1-Oct	Change
2000	5.80	4.90	(0.90)
2001	4.34	4.52	0.18
2002	4.56	5.42	0.86
2003	5.53	6.87	1.34
2004	7.45	5.35	(2.10)
2005	6.22	5.73	(0.49)
2006	6.26	5.45	(0.81)
2007	7.84	9.92	2.08
2008	11.93	10.53	(1.40)
2009	9.71	9.18	(0.53)
2010	9.76	10.57	0.81
2011	13.74	11.79	(1.95)
2012	13.93	15.60	1.68
2013	12.09	12.68	0.59
2014	12.26	9.17	(3.09)
2015	9.41	8.77	(0.64)
2016	10.18	9.54	(0.64)
2017	9.65	9.57	(0.07)
2018	10.51	8.58	(1.93)
2019	8.73	9.20	0.47
2020	8.55	10.24	1.69
2021	13.40	12.47	(0.93)
2022	14.91	13.65	(1.26)
2023	12.75	12.77	0.02
2024	11.65	10.57	(1.08)
2025	10.24	10.13	(0.11)
2026	11.83		
average	9.67	9.35	(0.32)

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PRICING TARGETS

Soybeans show the need for a minimum price!

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CBOT NOVEMBER SOYBEAN FUTURES, 2000-2025

- ✓ Soybeans needs a minimum price!
- ✓ Exclude 7 years when the selling price on May 1 was less than production costs.

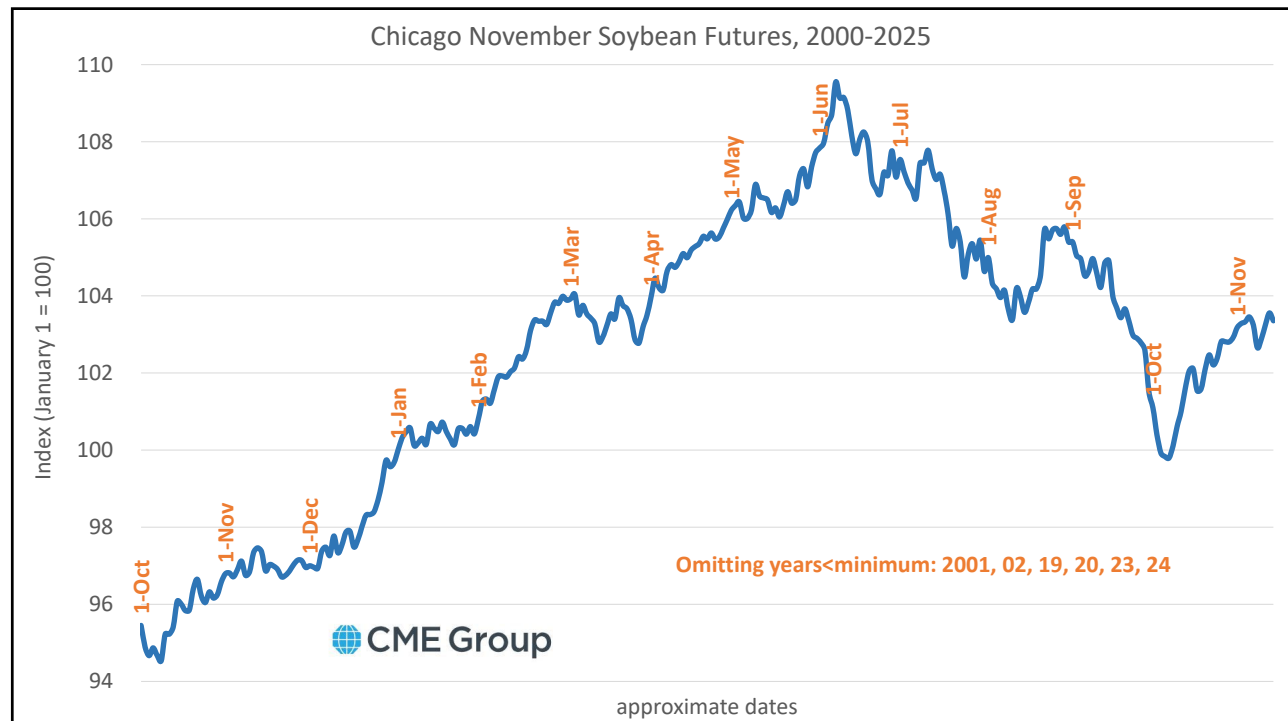
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average	9.67	9.35	(0.32)

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CBOT NOVEMBER SOYBEAN FUTURES, 2000-2025

- ✓ 14 years (74%) the market declined
- ✓ 5 years (26%) the market improved



Year	1-May	1-Oct	Change
2000	5.80	4.90	(0.90)
2003	5.53	6.87	1.34
2004	7.45	5.35	(2.10)
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2026	11.83		
average	10.06	9.53	(0.53)



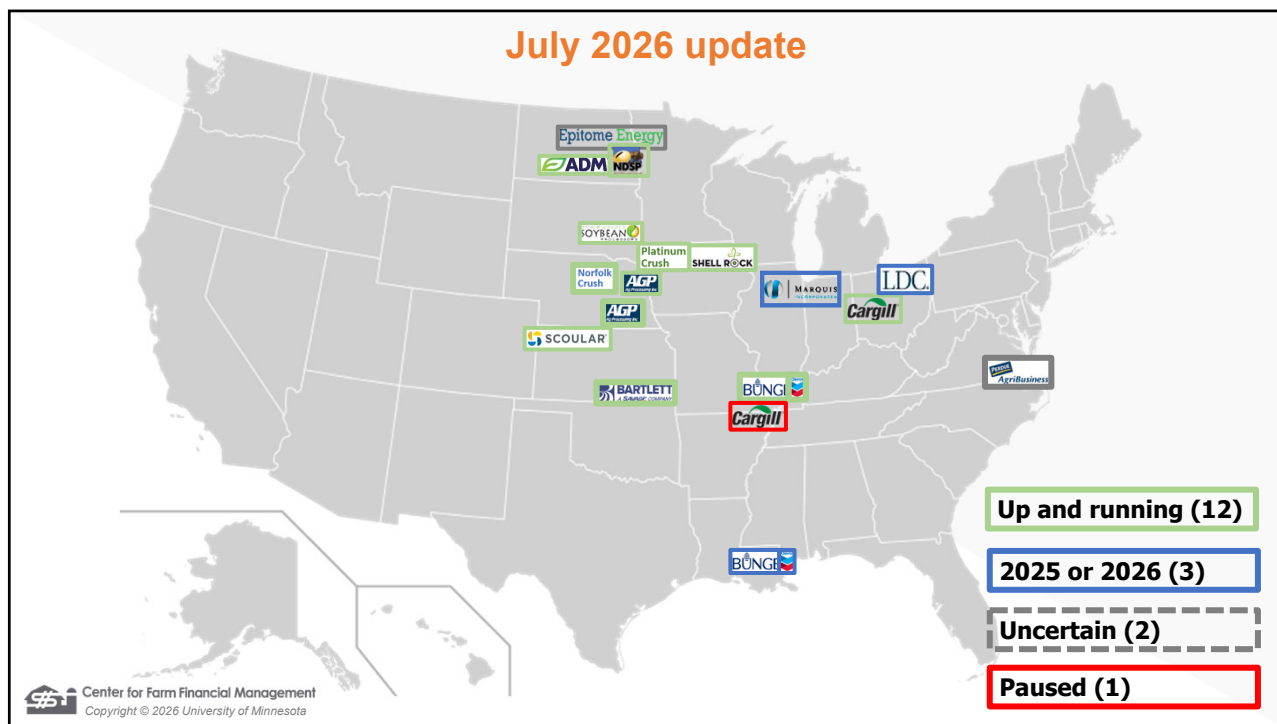
IOWA AVERAGE SOYBEAN PRICES, 1989-2025

Barney Binless harvest price the Friday between Oct 5-11.
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 Terry made no pre-harvest sales in 7 soybean years.

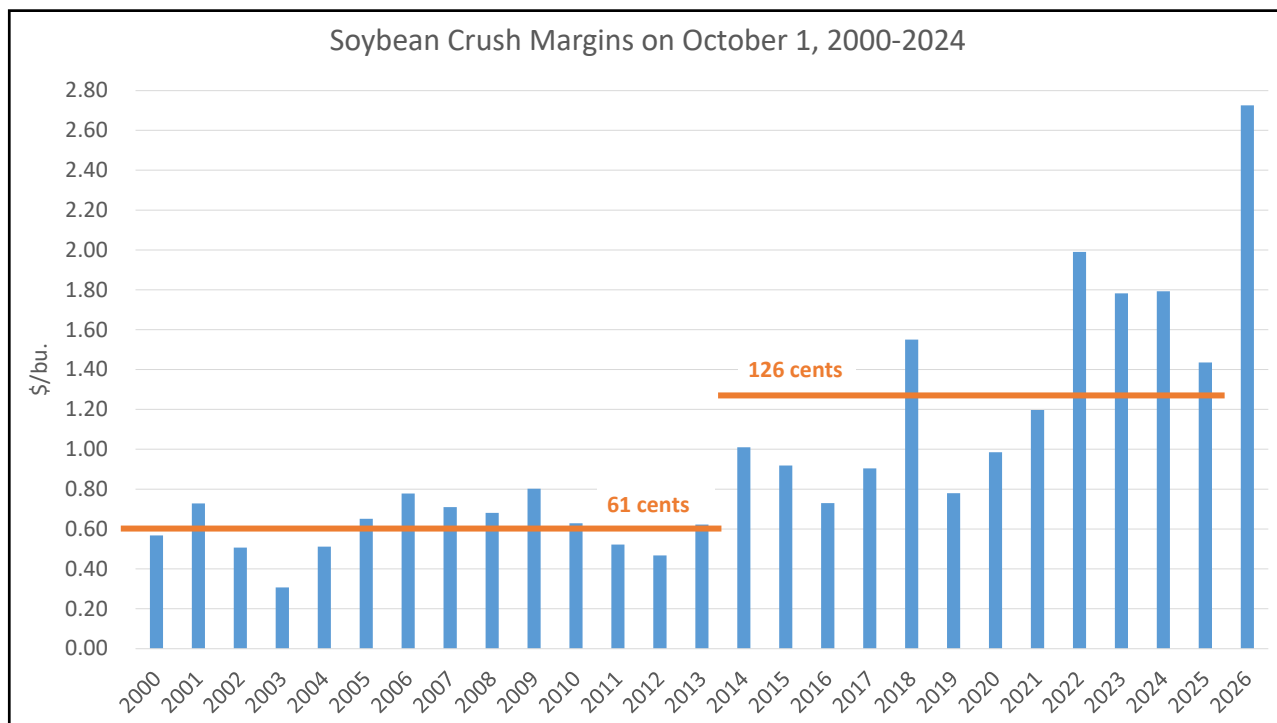


28 "active" years			
	Terry	Barney	Terry's advantage
soybeans	8.26	7.81	0.45
years >Barney	19 (68%)		
years >10%	11	4	

Other thoughts
 soybeans, corn and wheat



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NOPA* CRUSH REPORTS (99% of U.S. soybeans processed)



NOPA January US soy crush tops most estimates at 222 million bushels.

*National Oilseed Processors Association



THE WHEAT MARKET

Since year 2000...

the U.S. population has grown by 22%

THE WHEAT MARKET

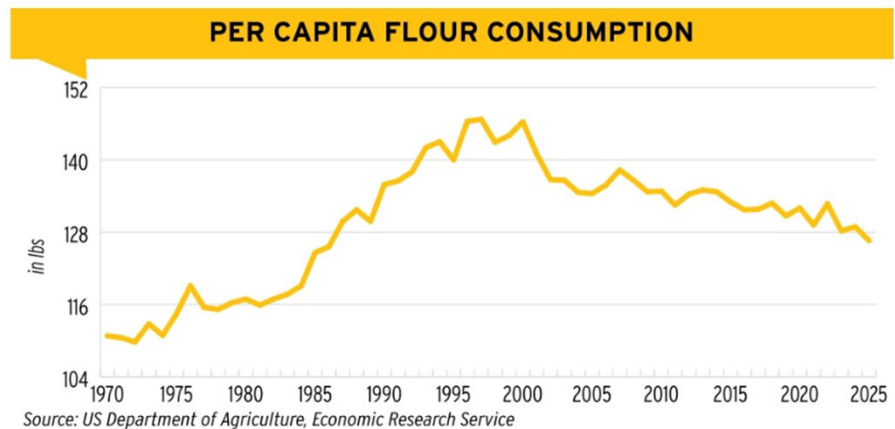
Since year 2000...

the U.S. population has grown by 22%

food use of wheat is up just over 2%

Per capita flour consumption slides to new 39-year low mark in 2025

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PRICING TOOLS FOR THE SELLER

- 1. Forward contract **\$4.42 and no upside**
- 2. Selling futures contracts (short hedge) **\$4.59 and no upside**
- 3. Buy put options to establish a minimum price
- 4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming")

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How can we use puts in place of
futures to establish a new crop price?

THE OPTIONS ALTERNATIVE IN HEDGING

- Short hedge with futures, or...
- Buy a put option to set a minimum price

- Long hedge with futures, or...
- Buy a call option to set a maximum price

PRICING TOOLS FOR THE SELLER

1. Forward contract
2. Selling futures contracts (short hedge)
3. **Buy put options** to establish a minimum price
4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming")

OPTIONS

An option is the right, but not the obligation, to buy or sell a futures contract at some predetermined price at anytime within a specified time.

OPTIONS

The appeal? Buying options protects against an unfavorable price move but still offers the opportunity to benefit from a favorable move.

Also, option buyers pay premiums but are not exposed to margin issues.

OPTIONS TERMS

- A call option is the right to buy futures
- A **put** option is the **right to sell** futures

OPTIONS

Commodity **sellers** (e.g., producers) generally **buy put options**; offering limited risk and unlimited potential.

Selling options is a trading strategy—generally not used to manage risk.

BUY PUT OPTIONS

- + the right to sell futures
- + establish (nearly) a minimum price
- + no margin calls
- + not locked into delivery
- + basis opportunity
- basis risk
- 5,000 bushel units
- **high cost!**

ASSIGNMENT #3 (SENT JUNE 1)

Buy PUT options...

- I bought two Dec XXX put contracts (10,000 bushels of corn) for XX cents/bushel

BUY PUT OPTIONS

$$\frac{5.00^*}{\text{strike price}} + \frac{-0.45}{\text{expected basis}} - \frac{0.35^*}{\text{premium}} - \frac{.01}{\text{fees}} = \frac{4.19}{\text{minimum price}}$$

* Based on May 4 market prices

BUY PUT OPTIONS

$$\text{5.00} + \text{-0.45} - \text{0.35} - \text{.01} = \text{4.19}$$

strike price + expected basis – premium – fees = minimum price

Put options increase in value as prices decline.
Between now and harvest, do you want higher or lower prices?

Pro Farmer

March 31, 2026

Advice Alerts

Corn producers: Hedge anticipated 2026 production... December corn futures have recently stalled on the daily bar chart. **We advise corn hedgers to buy \$4.80 December puts on 40% of anticipated 2026 production, bringing total hedges to 50% (10% sale with a forward contract).** Our fill was 32¢ on today's close.



April 13, 2026

NEW HEDGE - CORN NEW-CROP 2026 - Hedging another 10% by purchasing the DEC26 \$4.60 puts and selling the \$5.00 calls for even-money to a slight credit. This provides a floor at \$4.60 but kicks us out at \$5.00. In total, this now gives us a floor on about 50% of our estimated new-crop production at just above \$4.60 per bushel.

PRICING TOOLS FOR THE SELLER

- 1. Forward contract **\$4.42 and no upside**
- 2. Selling futures contracts (short hedge) **\$4.59 and no upside**
- 3. Buy put options to establish a minimum price **\$4.19 and unlimited upside**
- 4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming")

PRICING TOOLS FOR THE SELLER

1. Forward contract
2. Selling futures contracts (short hedge)
3. Buy put options to establish a minimum price
4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming")

FORWARD CONT.AND BUY CALL OPTIONS

- + establish a firm minimum price (basis is fixed)
- + no possibility of margin calls
- ends in delivery
- institutional risk on the forward contract
- sometimes difficult to get a fair basis
- **high cost!**

ASSIGNMENT #4 (FINAL TASK SENT JUNE 8)

Forward contract and buy call options...

- I sold 10,000 bushels of corn for harvest delivery at $\$X.XX/\text{bu.}$ and bought two Dec XXX call contracts for $XX \text{ cents/bushel}$
- I sold 5,000 bushels of soybeans for harvest delivery at $\$XX.XX/\text{bu.}$ and bought one Nov XXXX call contract for $XX \text{ cents/bushel}$

FORWARD CONT.AND BUY CALL OPTIONS

$$\frac{4.42^*}{\text{forward sales price}} - \frac{0.35^*}{\text{premium}} - \frac{.01}{\text{fees}} = \frac{4.06}{\text{minimum price}}$$

* Based on May 4 market prices

PRICING TOOLS FOR THE SELLER

1. Forward contract **\$4.42 and no upside**
2. Selling futures contracts (short hedge) **\$4.59 and no upside**
3. Buy put options to establish a minimum price **\$4.19 and unlimited upside**
4. Cash sale/forward contract and buy call options to establish a minimum price ("paperfarming") **\$4.06 and unlimited upside**



From my May 18 email...

In the **SDBA Ag School OLD crop 2026** game, you are holding 50,000 bushels of corn and 20,000 bushels of old crop soybeans from last year's harvest. Use cash sales to get this grain sold **before the end of June**.



From my May 18 email...

“When we meet in Spearfish, I will explain why I think this grain should be priced *before the end of June.*”



Meet May Sellers and Hank Holder

May Sellers



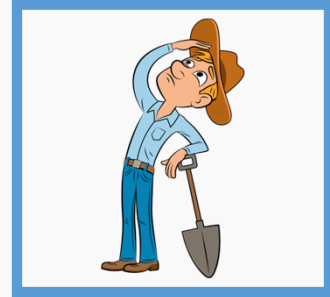
May has on-farm storage. She holds her crop in the bin to sell in late spring. Her price is the cash price in the last week of May, less variable storage costs (interest and shrink).

May Sellers



Corn and soybeans: Mays stores 80% of her harvested grain until spring, selling on the Friday between May 25-31. 20% is sold at harvest.

Hank Holder

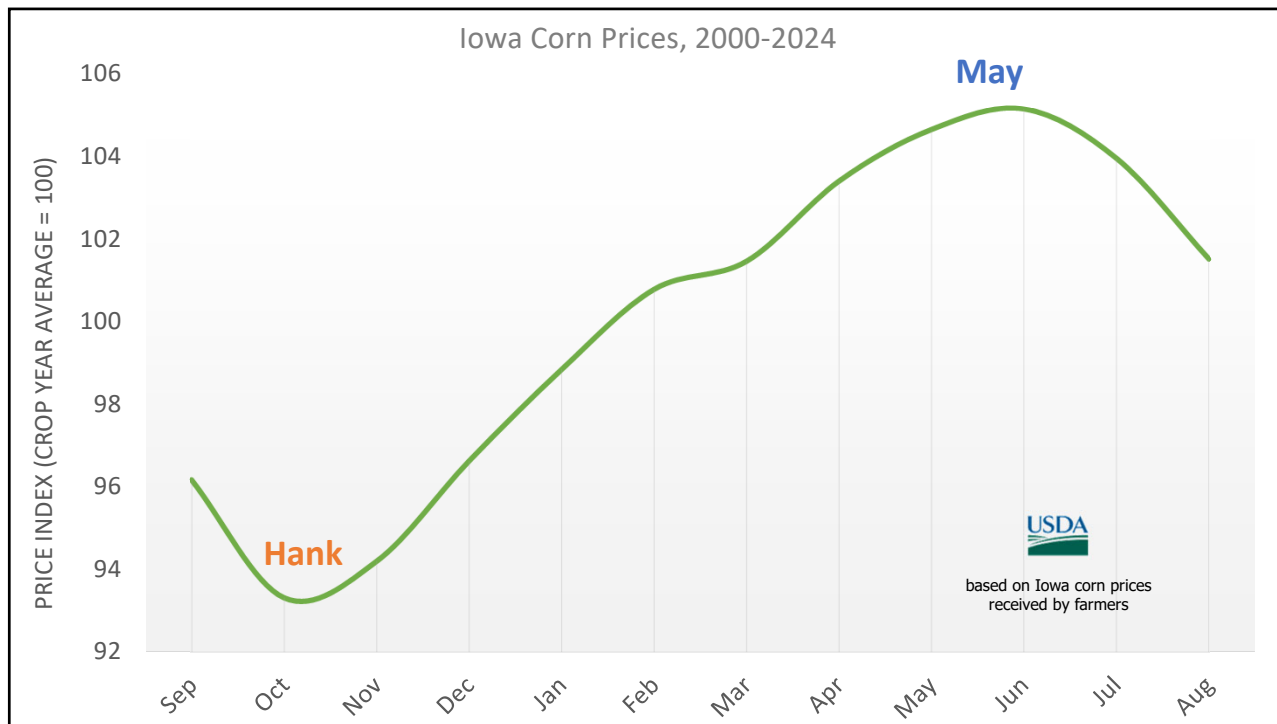


Hank is our perennial bull, always convinced that prices are about to surge higher. But Hank only has enough storage for one crop, so each year he is forced to sell right before harvest, to make room for the new crop. His price is the following harvest price, less storage costs.

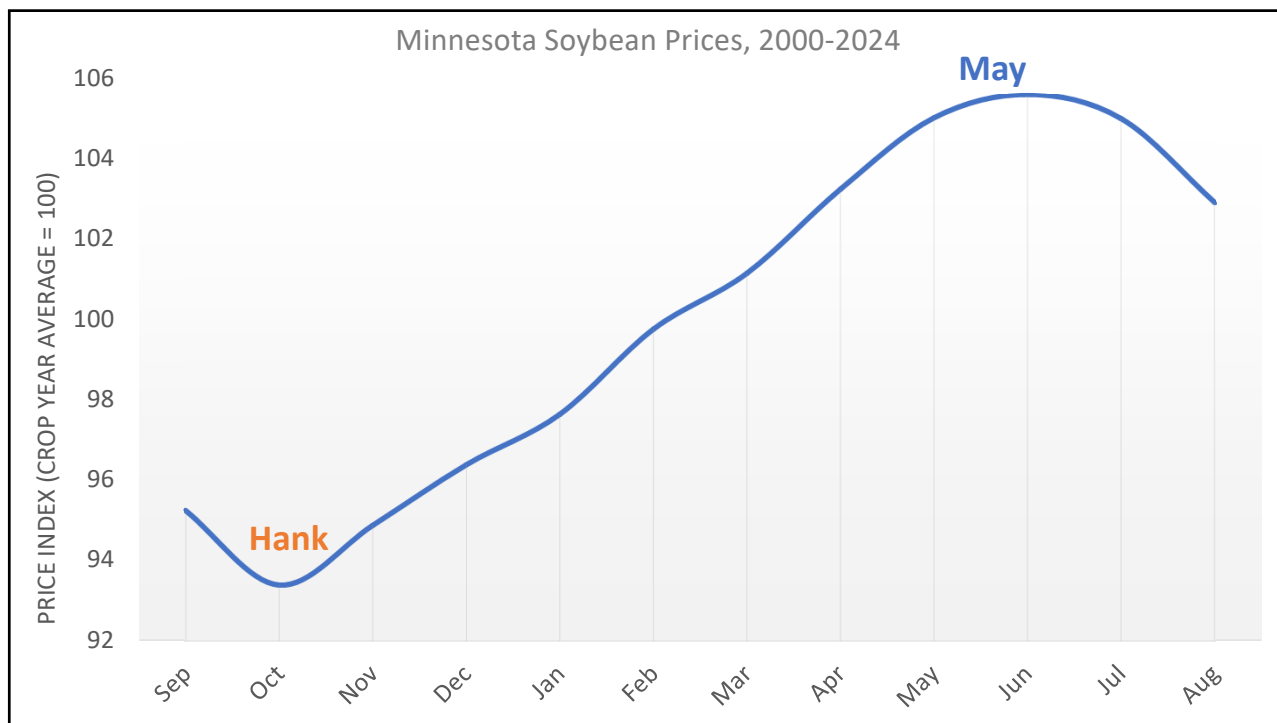
Hank Holder



Hank sells 20% of his **corn** at harvest, and stores 80% until the following harvest, selling on the Friday between October 1-7.
Hank sells 20% of his **soybeans** at harvest, and stores 80% until the following harvest, selling on the Friday between Sep 28-Oct 4.





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IOWA AVERAGE CORN PRICES, 1989-2024

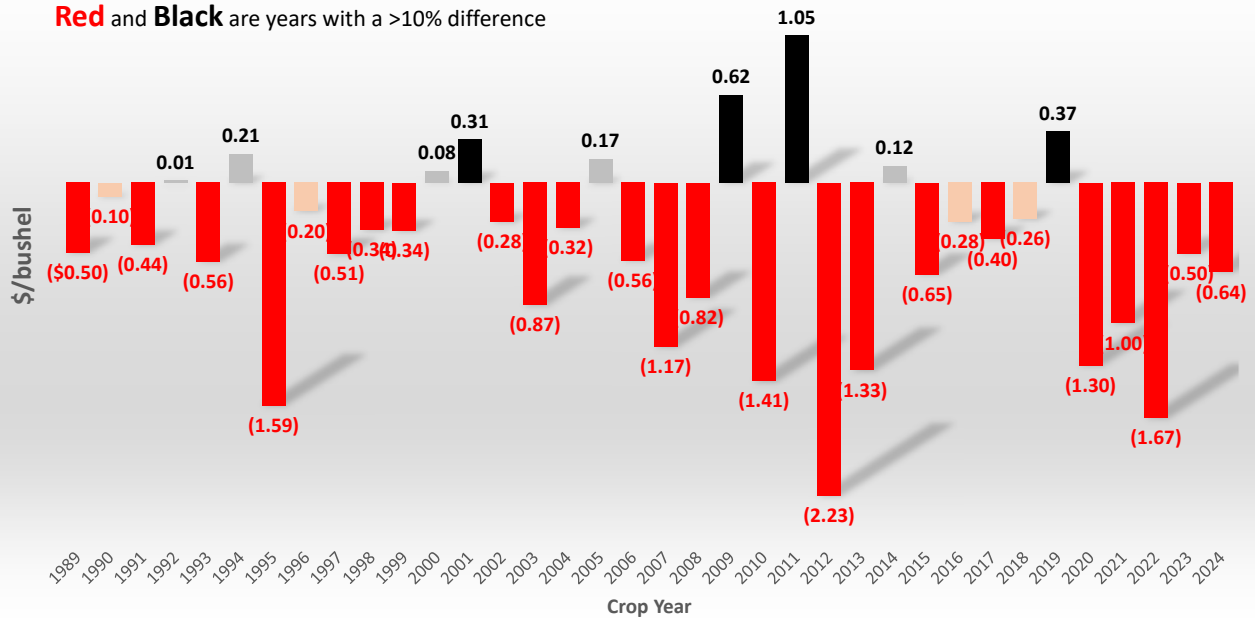
			
	May	Hank	May's advantage
corn	3.39	2.91	0.48
years >Hank	27 (75%)		
years >10%	23	4	

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Corn: Hank Holder vs May Sellers, 1989-2024

Red and Black are years with a >10% difference



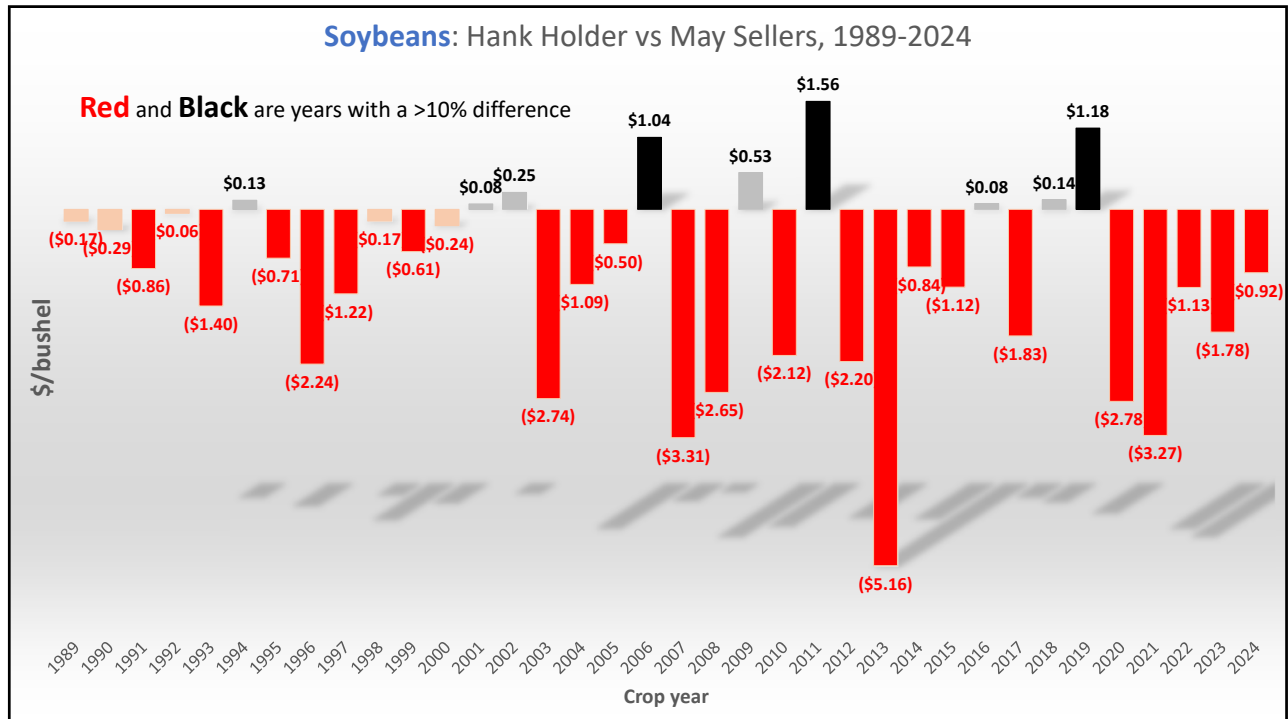
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IOWA AVERAGE SOYBEAN PRICES, 1989-2024

			
	May	Hank	May's advantage
soybeans	8.30	7.29	1.01
years >Hank	26 (72%)		
years >10%	20	3	



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RED RIVER VALLEY WHEAT PRICES, 1989-2024

			
	May	Hank	May's advantage
wheat	5.05	4.65	0.40
years >Hank	26 (72%)		
years >10%	23	5	

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Hank Holder

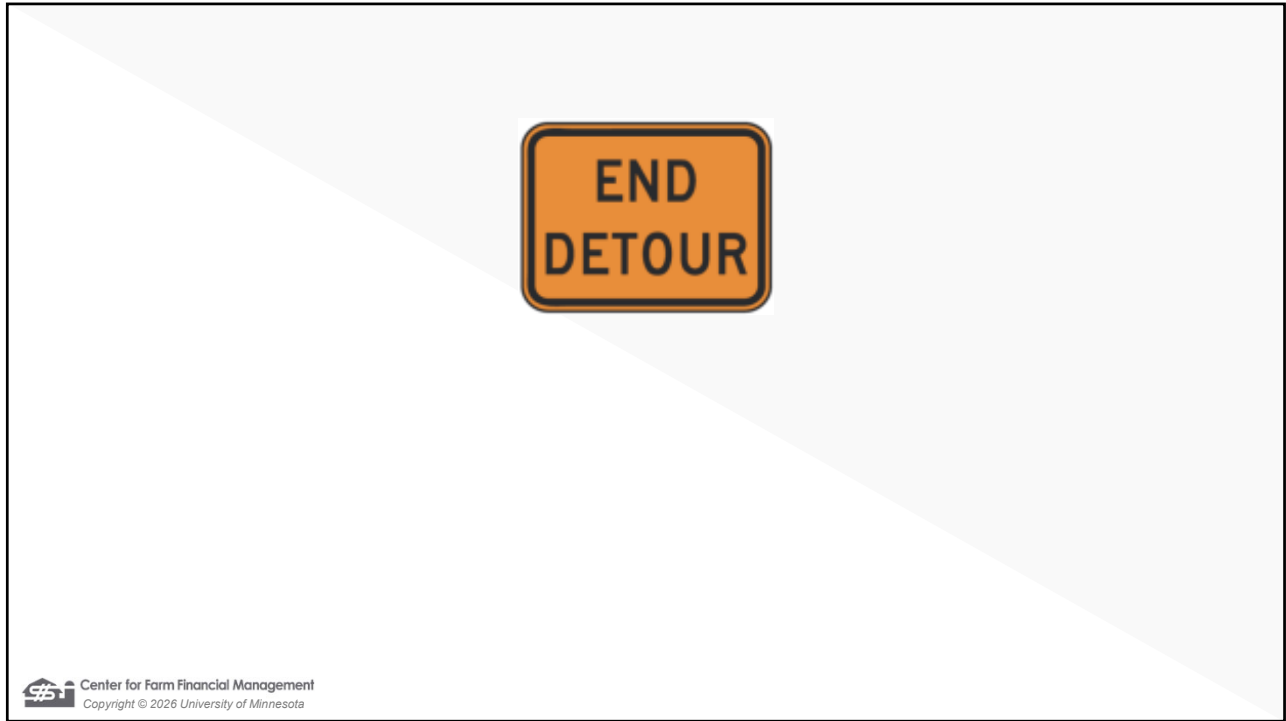


Hank breaks The 11th Commandment of Grain Marketing

"Thou shall not hold unpriced corn or soybeans in the bin beyond July 1"

("Thou shall not hold unpriced **wheat** in the bin beyond **May 15**")

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**Grain
Marketing
is Simple***
**it's just not easy*

Edward Usset

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