

SheepSense:

an applied research brief

Using the Futures Market to Offset Price Volatility in the Corn Market

The Challenge: Hedging Commodity Prices

Agriculture is an inherently risky business. Sources of risk may stem from weather, production, the environment, financial, institutional, market, and the list goes on. Some risk is out of the control of the producer, while other sources of risk have tools available to help offset at least a portion of the risk. Hedging feed commodity prices is one tool sheep producers have available to help offset market risk to some extent.

Futures contracts for common feed ingredients such as wheat, soybeans and corn are traded through the Chicago Mercantile Exchange Group. Producers can hedge against market volatility by selecting the contract that fits their operation/ration. Contracts are available that represent several livestock species, but unfortunately, there is not a contract for sheep and lambs. Using feeder cattle futures contracts is not recommended for feeder lambs because the price spread between feeder cattle and feeder lambs can be significant. An alternative may be forward contracting lambs or diversifying market channels. So, how can sheep producers utilize futures contracts to offset market risk? Here the focus is on corn as an example because that is likely the most common feed ingredient in finishing rations in Wyoming.

Quick Facts

- Hedging feed costs with futures contracts helps mitigate market risk for producers.
- Sheep producers lack specific futures contracts for lambs and must explore alternatives like forward contracting.
- Corn futures contracts represent standardized agreements to buy or sell 5,000 bushels at a future date.
- Hedging corn is one strategy to help offset rising or falling market prices to reduce financial uncertainty.
- Basis risk and margin calls are potential downsides to using futures contracts.
- Futures markets are a valuable tool for reducing market volatility when included in a broader marketing strategy.



Buying & Selling Corn Futures

Corn futures contract specifications can be found on the [CME group website](#). Each contract represents a standardized agreement to buy or sell 5,000 bushels of a corn at a date and time in the future.

Five thousand bushels of corn is approximately 140 tons assuming 56 pounds per bushel.

Contracts expire on the business day prior to the 15th day of the contract month. Contracts can be settled one of two ways, 1) corn can be delivered at a delivery point, or 2) the contract can be cash settled. Anyone can buy and sell futures contracts, but all transactions must go through a broker.

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Hypothetical Scenario

Here is a hypothetical scenario to put it all together. Let's assume a sheep producer plans to finish their lamb crop for slaughter and they're worried about rising corn prices in the fall. It's currently April, and the September corn futures contract price is \$4.35/bu. Furthermore, the producer will need to purchase 10,000 bushels of corn to feed their lamb crop for slaughter. If the producer wants to hedge 100% of the required amount of corn, the producer will need to purchase two September corn contracts (10,000 bu. needed / 5,000 bu./contract = 2 contracts).

Fast forward to September. The producer purchases the corn in the cash market for \$5.10/bu. But what happened with the futures price? Let's assume the September futures contract price is \$5.05/bu. Remember, the contracts were initially purchased at \$4.35/bu. So, when the producer settles, or "sells" the September corn contracts, the value is \$5.05/ bu. A net gain of \$0.70/bu. off the futures contracts. (\$5.05/bu. (sold price) - \$4.35/bu. (purchased price) = \$0.70/bu.

What is the realized price for the corn in September? In the cash market, the corn price is \$5.10/bu. The difference between the purchased and settled futures price is \$0.70/bu. The realized gain in the futures market in this scenario can be applied to the paid cash price (\$5.10/bu. cash - \$0.70/bu. futures = \$4.40/bu. realized price). If the producer did not hedge the corn price, they would have paid \$5.10/bu. in the cash market, end of story. Because of the favorable shift in the futures corn price, the producer ended up gaining \$0.70/bu. in the futures market which can be applied to the purchase price of the corn. Therefore, the realized corn price is \$4.40/bu.

What would happen if the futures corn price in September went lower than \$4.35? Because of the threat of delivery (one way to settle contracts), it is likely that the September cash price at the local grain elevator also moved lower. The threat of delivery forces the cash market and futures market together. The idea being if the futures price becomes too far from the local cash price, corn producers will arbitrage the market and deliver on the contract which will force the markets together. In that scenario, assume the local cash price in September is \$4.25 and the September futures price is \$4.30/bu. The producer would have lost \$0.05/bu. in the futures market (\$4.35/bu. (purchased) - \$4.30/bu. (sold) = -\$0.05). Now the realized price for the corn is \$4.25 cash price + \$0.05 (loss in futures) = \$4.30/bu.

Conclusion:

In range production systems, hedging feed costs may or may not be applicable. But for a producer that plans to retain ownership or has a feedlot, hedging feed commodities can help reduce market risk. However, producers are still exposed to basis risk, cash price minus futures price, and margin calls while the hedge is in place. The futures market is one tool producers can add to their marketing plan to help mitigate market risk. More information on the futures market is available through *Managing for Today's Cattle Market and Beyond*.

Current Date	Futures Contract Date	Futures (\$/bu)	Cash Price(\$/bu)	Gain/loss (\$/bu)	Realized Price (\$/bu)
April	September	\$4.35			
September (Gain)	September	\$5.05	\$5.10	\$0.70	\$4.40
September (Loss)	September	\$4.30	\$4.25	(\$0.05)	\$4.30

Sources:

Murra, G.E., *Managing for Today's Cattle Market and Beyond*, South Dakota State University. <https://marketing.uwagec.org/MngTCMkt/FutrMrkt.pdf>