

Authors:

John C. McKissick, University of Georgia
Emmit L. Rawls, University of Tennessee
John D. Lawrence, Iowa State University

Pork Producers and the Futures Markets

Originally published as PIH-19.

Reviewers

Derrell Peel, Oklahoma State University
Ronald Plain, University of Missouri

Why Do Pork Producers Hedge?

A pork producer who is not familiar with futures markets and hedging may have many questions regarding how to use this pricing tool. But the most basic question is: why be interested in learning about futures markets? In other words, why do producers hedge? To answer this question, it is first necessary to define futures markets and hedging. A hog futures market establishes prices for hogs that will not be delivered until some time in the future. A producer who uses the futures market to forward-price hogs before delivery is hedging.

There are two basic reasons to forward-price hogs. First, the producer may feel that current futures market prices are higher than cash prices will be when the hogs are ready for delivery. Second, a producer may be unable, or unwilling, to accept the risks of prices lower than the current futures price, even though cash prices may be higher at delivery time.

The producer with the sole objective of getting the highest price will not hedge unless the forward-price offered exceeds cash market price expectations. Thus, the producer must be in a position to accept the risk that the expected price is wrong. It also should be pointed out that a producer with this objective must accurately anticipate future prices to achieve pricing objectives. The producer fails if he/she forward-prices at a price lower than could have been gotten later. A producer fails by not forward-pricing and later having to sell the hogs at a price lower than could have been obtained by forward-pricing.

The producer with the objective of reducing price risk has a much greater chance of achieving that objective through forward-pricing. The producer with a risk-reducing objective will forward-price any time he/she is unwilling or unable to accept the risk of having to take a price lower than the forward-price. For example, they may choose to forward-price to insure a certain return to management or profit. In any case, at some price level the risk of loss associated with a lower price outweighs the value of a potentially larger but uncertain profit that might occur without forward-pricing. Hedgers with this objective have a high probability of satisfaction from using the futures market.

Of course, producers would prefer to get the maximum price and the minimum price risk simultaneously, but this is rarely possible. Producers may consider both objectives to be important; but in any given situation, they must decide which is more important to make sound pricing decisions.

Hedging Compared to Other Price Risk Management Tools

Forward-pricing is not the only alternative to managing price risk. Floor-pricing or minimum-pricing through the options market provides a minimum price while allowing the producer to take advantage of any higher prices. Forward-pricing on the other hand will provide more price protection against lower prices than will floorpricing, but also precludes gains from higher prices. The mechanics of floor-pricing are explained in fact sheet PIG-11-03-02, *Commodity Options as Price Insurance for Pork Producers*.

Many producers can forward-price through either the futures market or forward cash contracts. In many areas, packing plants and buying stations offer forward cash contracts which are a direct result of the futures market. Since they charge for their services, prices offered through cash contracts usually are less than those offered using the futures market at any point in time.

Another advantage of using the futures market to forward-price is added marketing flexibility. It is not necessary to deliver on the futures contract since it can be offset at any time. Cash contracts lock the producer into delivering contracted hogs at the contract's specified price. This can create problems when production fails to meet contracted levels or if hogs do not reach market weight on time.

Futures market forward-pricing offers further marketing flexibility compared to cash contracting by fixing prices without the commitment to deliver at a specific location. This allows the producer to shop around for even higher prices when ready to deliver the hogs. In effect, the producer is able to separate when he prices from where he delivers. The producer maintains ownership of the hogs but has them priced. This may be of particular importance to producers who have few contracts available or have reason to question the financial stability of the cash contractor.

Disadvantages of using the futures market to forwardprice include the necessity of putting up margin money (good faith money required to trade futures), the complexity of the market, and the knowledge required to trade contracts. Another disadvantage is the inability to lock in an exact price (the price relationship between futures and cash markets fluctuate within a small range making a precise determination of forward-prices offered impossible). Also, many producers desire to price less than the minimum standard contract called for in the futures markets. An example of this problem would be the producer with less than 25,000 pounds of hogs (the smallest hog futures contract).

The Arithmetic of Hedging

The method by which forward-pricing is achieved in the futures market may at first seem a bit complicated, but a thorough understanding of the arithmetic of hedging is essential in using the futures market to forward-price. A futures market hedger takes an offsetting position in the futures market from the one he has in the cash market. For instance, a producer wishing to establish a price on hogs to be sold later will initiate a hedge by selling the appropriate number of futures market contracts to establish a forward-price. The hedger sells because this is the opposite of his unpriced inventory position in the cash market. Another, and perhaps simpler, way to keep this straight is to think of hedging as pre-selling in the futures market. Then, when the product is actually ready for delivery in the cash market (the hogs are ready for sale), the hedger buys back the contracts in the futures market to offset or nullify the previous futures sale. He then delivers his product to the local market. Thus, any profits or losses made in the futures market are offset by profits or losses in the cash market. It's similar to a balancing scale—when one goes up the other goes down. In dollars, this puts the hedger back at the price originally desired. In summary, a producer-hedger operates in two markets and the action can be illustrated as follows:

How Hedging Works

An example illustrates how the cash market balances the futures market. Assume a hog producer is interested in hedging a part of the hogs to be marketed in early April.

Cash Market	Futures Market
Commits inputs, etc. to produce	Sells futures contract to establish a price
Sells production in local market	Buys back futures contract

Hog hedgers currently have two futures markets from which to choose. The Chicago Mercantile Exchange's contract is 40,000lb of carcass weight while the MidAmerica futures market exchange (also in Chicago) has a contract of 25,000lb of live weight. The first step of the hedger is to choose the type of futures contract to use. The carcass contract represents approximately 54,054lb of live hogs assuming a hot carcass

yield of 74% (the amount of carcass resulting from the live hog weight). Therefore the carcass contract represents about 216 head of 250lb live market hogs (or 216 head of 185lb carcasses). The live hog futures represent 100 head of 250lb market hogs (or 100 head of 185 lb carcasses)¹. Continuing with the example, we will assume a producer wishes to price roughly 215 head and sell the hogs on a carcass basis. Thus, the carcass contract is appropriate.

The hedger is interested in the futures contract that matures closest to, but not before, the time his hogs will be ready for slaughter. Both the lean hog and live hog futures markets have contracts for February, April, June, July, August, October, and December. The lean hog contracts “mature” during the middle of the months while the live hog futures mature toward the end of these months. Since the example hedger’s hogs are expected to finish in April, he/she selects this futures contract. By checking current Chicago Mercantile Exchange futures quotes, the hedger finds that April lean hog futures are \$70.50/cwt. Assuming the hedger knows how to trade futures contracts and has an account opened at a brokerage office, he/she is now faced with two basic questions:

1. What does the futures quote of \$70.50 mean through a hedge?
2. Once the hedge price is known, how is the price “locked” in?

Let’s look at each of these questions. What does a futures price mean? The \$70.50/cwt. April Chicago Mercantile contract price represents the average value of 51% to 52% lean carcasses reported by USDA during the middle of April. The MidAmerica live hog futures represents the average value of hogs in the Iowa/Southern Minnesota direct live hog market in mid-April. In either case, the price in the hedger’s local market in April likely will not equal these prices since futures market prices represent averages from several different markets. However, the local market price will be related to the futures market price during the delivery month as hog prices (and all commodities for that matter) are determined in a national market. Since open futures contracts are settled based on the USDA reported prices at the futures contract’s maturity, the futures price and cash prices will be the same at the end of the futures contract month.

The Iowa/Southern Minnesota live hog market is the largest reported direct trade market in the U.S. The USDA reported carcass prices are taken from all the major packers across the country, representing almost all the hogs sold on a carcass basis during the day. So we can assume that local hog prices will move with the market prices represented by the futures market. Therefore, if hog prices go up in the carcass market or the Iowa/ Southern Minnesota live market, prices at the local market should go up and vice versa. If the hedger knows the relationship between the local prices and those that the futures market represent, he can determine what the futures market is offering today for hogs sold in his local markets in the future. This relationship is called basis. Basis is the premium or discount used to adjust futures prices to local cash price levels.

For the example, assume that by comparing the historical difference between his local packer’s base carcass prices in April and April futures prices, the hedger finds an average difference of -\$1.50/cwt of carcass. That is, the base carcass price at his local packer in April has averaged \$1.50 less than the April futures prices (or the weighted average 51% to 52% lean carcass price) on the same day.

Now, the hedger can adjust the futures price to reflect delivery in his cash market. If in April the hedger’s local market is \$1.50 under the April futures price, the future price means \$70.50 - \$1.50 or \$69.00/cwt of carcass as a forward price². This is the price the futures market is currently offering through a hedge for hogs delivered at the hedger’s market in April. Let’s put this in terms of the two markets in which the hedger operates - the cash market and the futures market assuming it is currently February 1.

Locking in a Hog Price Through a Hedge

Now that the hedger knows what the futures market is offering, how does he go about locking it in if he likes this price? Recall from the previous discussion, the hedger takes an opposite position in the futures from the one he or she has in the cash. In this case, the hedger would sell the number of contracts needed to cover the number of hogs to be forward-priced. The hedger is in effect “preselling” the hogs in the futures market. Assuming the hedger wishes to price a group of 215 hogs, one Mercantile contract

¹ At the time of printing, the Mid America Exchange was considering a proposal to convert to a 20,000 pound carcass weight futures contract.

² To convert a carcass price to a live price, multiply by the percentage a live hog is expected to yield as a carcass. A commonly used yield is 74%. Using this conversion, the example carcass futures price of \$70.50 is equivalent to \$52.17 ($\$70.50 \times .74$) on a live weight basis. Live hog prices can be converted to a carcass basis by dividing the live price by the yield factor. For example a \$50.00 live price is equivalent to a \$67.57 ($\$50 / .74$) carcass price using a 74% yield factor.

will be sold. By calling a broker and placing an order to sell one contract of April hogs at \$70.50, the hedger has an approximate forward price on the 215 head to be sold in April of \$69.00/cwt of carcass (\$70.50 less the \$1.50 estimated basis). For this example the two major costs of hedging, brokerage commissions and interest on the initial good faith money (margin), are ignored.

Date	Cash	Futures	Expected Basis
Feb. 1	Forward Price = futures price less basis or $\$70.50 - \$1.50 = \$69.00/\text{cwt carcass}$	Target April at \$70.50	futures -\$1.50

Now take the example forward in time. It is April and the hedger's hogs are ready to sell at the XYZ Packer. The producer takes the hogs to the local market and on the same day buys back the futures contract. The broker notifies the producer that he/she has bought a contract at \$75.00 while the base carcass price on the hogs was \$73.50 at the Packer. Now what has happened to the forward-price? Look at the results of the two markets again.

Date	Cash	Futures	Basis
Feb. 1	Target price through hedge: Futures - Basis or $\$70.50 - \$1.50 = \$69.00/\text{cwt}$	Sold 1 April lean hog futures contract at \$70.50/cwt	-\$1.50/cwt (estimate)
Apr. 10	Sold 215 head of hogs at XYZ market, base Carcass price = \$73.50/cwt	Bought 1 April lean hog futures contract at \$75.00/cwt Futures results: Sold \$70.50 Bought \$75.00 resulting in loss of -\$4.50/cwt	-\$1.50/cwt (actual)
Actual price received: Cash price + gain (loss) in futures or $\$73.50 - \$4.50 = \$69.00/\text{cwt}$			

The hedge resulted in a net price of \$69.00/cwt, just what the hedger had planned. The gain in the cash market (\$69.00 vs \$73.50) was just offset by the loss in the futures market, providing the anticipated target price. Of course, had the producer not hedged he/she would have received a higher price, but if that had been known back in February, why forward-price? In fact, if the hedger knows which way prices are going, why grow hogs? Just speculate in the futures and forget about all the production troubles.

What would have happened if prices had fallen between February 1 and April 10? Look at the action in each market.

What has happened? The cash price received at the local auction was actually \$.50/cwt higher relative to April futures than expected, hence the net price is 50 cents greater than the target price (\$69.50 vs \$69.00). Notice, this is the same difference as the estimated -\$1.50 basis on February 1 and the actual basis of -\$1.00 on April 10.

The moral to the story is that hedging locks in a price exactly as long as the estimate of the basis is correct. However, in most practical situations there will be a difference between the actual and estimated basis. The net price and target price will differ by the error in estimating basis. This is why the beginning section stated that by hedging through futures, a price within a small range could be locked in.

Hedging Feed Purchases and Other Types of Hedges

The example illustrated a pork producer's hedge. The hedge works the same way for all commodities that are produced to be sold later. To establish a price, the production hedger "pre-sells," or sells, the number of futures contracts to cover the production he wishes to hedge. When the producer is actually ready to sell, he/she buys back the futures contracts. The hedger will receive the hedge target price plus or minus the amount the actual basis differs from the estimated basis.

Date	Cash	Futures	Basis
Feb. 1	Target price through hedge: Futures - Basis or $\$70.50 - \$1.50 = \$69.00/\text{cwt}$	Sold 1 April lean hog futures contract at \$70.50/cwt	-\$1.50/cwt (estimate)
Apr. 10	Sold 215 head of hogs at XYZ market, base Carcass price = \$64.00/cwt	Bought 1 April lean hog futures contract at \$65.50/cwt Futures results: Sold \$70.50 Bought \$65.50 resulting in gain of \$5.00/cwt	-\$1.50/cwt (actual)
Actual price received: Cash price + gain (loss) in futures or $\$64.00 + \$5.00 = \$69.00/\text{cwt}$			

When hedging an input, or something that will be purchased at a later date, the hedging process is similar with the exception of the hedge's initiation. To hedge something that will be purchased later, for instance corn or soybean meal, a hedge is established by "pre-buying" or buying futures contracts. When the input is actually purchased in the cash market, the futures contracts are sold. In this manner, any gain or loss in the input's futures market will be offset by a gain or loss in the inputs cash market. The actual price paid for the input will miss the original target price of the hedge by the amount the actual basis differs from the estimated basis.

Date	Cash	Futures	Basis
Feb. 1	Target price through hedge: Futures - Basis or \$70.50 - \$1.50 = \$69.00/cwt	Sold 1 April lean hog futures contract at \$70.50/cwt	-\$1.50/cwt (estimate)
Apr. 10	Sold 215 head of hogs at XYZ market at \$63.00/cwt	Bought 1 April lean hog futures contract at \$64.00/cwt Futures results: Sold \$70.50 Bought \$64.00 resulting in gain of \$6.50/cwt	-\$1.50/cwt (actual)
Actual price received: Cash price + gain (loss) in futures or \$63.00 + \$6.50 = \$69.50/cwt			

A June hedge to establish a price for corn to be purchased at harvest is illustrated below. The actual corn price paid is \$.05/bu higher than the target purchase price because the basis at the time the cash corn is purchased is \$.05/bu higher than anticipated.

Hedging and the Hog Basis

Since hedging accuracy is dependent on forecasting basis, the successful hedger must have an understanding of the factors affecting basis. In general, four factors must be taken into account when determining the hedger's basis: time, location, quality, and market.

Date	Cash	Futures	Basis
Feb. 1	Target price through hedge: Futures - Basis or \$2.70 - \$0.10 = \$2.80/cwt	Buy 2 Dec. 5,000Bu corn futures contract at \$2.70/cwt	+\$0.10/Bu (estimate)
Apr. 10	Buy 20,000 bushels of local corn at \$3.20/Bu	Sell 2 Dec. corn futures contracts at \$3.05/Bu Futures results: Buy \$2.70 Sell \$3.05 resulting in gain of \$0.35/Bu	-\$1.50/Bu (actual)
Actual price received: Cash price + gain (loss) in futures or \$3.20 - \$0.35 = \$2.85/Bu			

The time dimension of the basis is usually limited to the time the hedger expects to deliver the hogs at a local cash market and the nearby futures. At the end of the futures contract month, the cash market underlying the futures contract and the futures market price will be equal. Thus, basis differences at the end of the futures contract reflect only location or quality differences. Because hogs are nonstorable, basis differences at times other than the contract's expiration will reflect the general direction expected in prices. For example, the difference between the cash price of hogs in January (for which there is no futures contract) and the February futures contract will depend on the supply of and demand for hogs anticipated by the futures market in February vs the actual supply and demand in January. If the market expects an increase in February marketings as compared to January (and thus a lower hog price in February), the February futures price could be lower than the January cash price. This would result in a positive January basis (January cash price higher than the nearby February futures). The opposite situation could result in a negative basis (cash price lower than futures). As the cashmarketing time approaches the futures contract expiration, the basis becomes more predictable because the element of market direction is absent. Hedgers anticipating hog deliveries at times other than close to the futures contract maturity may need to adjust for anticipated market direction in determining their basis.

Location differences in basis also may exist. Simply put, anything that affects the local supply and demand balance relative to the national supply and demand will affect the local basis. For instance, the opening or closing of a local slaughter plant may have little impact on the national demand for hogs determining the futures price, but can impact the price received locally. Delays in local marketings due to field work demands in the spring, or inclement weather during the winter, also can affect basis. That is, local buyers may be willing to pay more relative to the national market price due to a reduced local supply. Location differences in the basis other than those mentioned above usually are rather predictable over time. Transportation cost involved in moving hogs from one market to another limit all location basis differences. For these reasons, reasonably accurate forecast of location basis differences close to, or during, the contract month can be made using historical average differences of prices between the hedgers local market and the nearby futures price.

Quality is another determinant of basis. The futures market price stands for a specific quality of hog. The hedger's basis estimate should reflect any anticipated discount or premium due to delivery of a differing quality of hog locally. For instance, the basis estimate should reflect any discount associated with heavy or light hogs or carcass grade differences not accounted for in the original basis price comparison. Normally, the use of the current discount, or premium, quality difference will provide the hedger with an adequate forecast of the quality component of his basis.

Several studies have shown that the use of the recent three or five year average of the local basis, adjusted for quality differences, is as accurate a forecast of the basis as more sophisticated forecast techniques. The important information from historical basis studies is the variability in the cash/futures difference. For instance, a hedger who knows that the difference between hogs sold locally and the futures price has averaged \$ -.50/cwt during the last three years but has varied from \$.50/cwt above futures to \$2.00 below, may conclude that he/she would expect to net \$.50/cwt. less than the futures price by hedging. However, the producer would realize there is some chance of receiving a price through a hedge as much as \$2.00/cwt less than the current futures price. Most state Extension services provide historical basis information. Potential hedgers should keep their own basis records by recording on a periodic schedule their local cash prices and the closing nearby futures price for that day.

The Hedging Decision

The decision to hedge or not to hedge is a difficult one. In the final analysis, it will depend on the producer's evaluations of a given market situation relative to his forward-pricing objectives and strategy.

The decision process outlined below is relevant to any true hedge regardless of objective or strategy. The focus is on two questions. First, what price is the futures market offering for my hogs? And second, how much potential profit does that price represent? For any producer using futures markets to forward-price hogs rather than speculate on price changes, these questions are basic.

The first step in any hedging process is to "localize" the futures price. Localizing translates the quoted futures price into a net hedged price for the hedger's hogs delivered to the local market. An important part of this step is adjusting the futures price to account for the "basis" as outlined in the previous section on the arithmetic of hedging.

Another factor in localizing the futures price is to account for hedging cost. Hedgers must trade futures contracts through brokers. The brokerage fee which covers both the sell and buy transaction, usually amounts to about \$.25/cwt of hogs hedged.

The hedger trades futures contracts on margin. This means that the hedger must deposit a portion of the value of the contract (usually 5% to 10%) at the time a contract is sold. If the futures price moves up, the producer must deposit more money to cover the total value of the price change. If the price moves down, he/she may draw out money in the amount of the total value of the change. In this way, the initial margin amount is maintained in the hedger's account and is returned when the hedge is completed. Thus, margin cost is the interest cost on the margin money since it draws no interest while on deposit. (Treasury bills may be used as initial margin, thus avoiding this interest cost.) Assuming that the market is no more likely to move against the hedger than it is to move in his/her favor, the interest cost may be estimated on the initial margin requirement. With an initial requirement of \$1,000/contract and a 12% annual interest rate, margin costs would amount to about \$.13/cwt of hogs hedged for 4 months for example. Total hedging cost might be estimated to amount to about \$.35 to \$.45/cwt, including both brokerage fees and interest on margin money.

The second step in the hedging process is to estimate costs of production. A producer would never intentionally hedge at a price less than the variable or avoidable cost of production regardless of the hedging objective. It would be more profitable simply not to produce the hogs. Thus any hedger should have an estimate of this minimum pricing level. Prices at various levels above variable costs represent varying levels of returns to fixed or unavoidable costs, returns to management, and profit. A producer who has an accurate estimate of both variable and fixed costs and definite objectives with respect to management returns and profit is in a position to evaluate accurately the profitability of any futures price offered, thus facilitating his hedging decision.

Whether the producer will hedge at any localized price level above his variable cost depends on his forwardpricing objective and his pricing strategy. In general, producers are more likely to hedge when futures prices are higher relative to future expected cash prices, when producers have less confidence in their ability to predict cash prices, and when producers are more averse to price risk. Producers who use forward-pricing as a basis for management decisions also are more likely to price and produce when futures prices are higher relative to production costs.

The decision to hedge or not to hedge is an individual decision. However, the producer who has not reached a conclusion regarding his primary hedging objective and has not developed a strategy for achieving that objective has little chance of success.

Do's and Don't's of Hedging

The Do's

- Become thoroughly familiar with the futures markets and how to use them in hedging before attempting to hedge. (This fact sheet is merely a start toward the information you will need to hedge effectively.)
- Try a few hedges "on paper" if you are unconvinced that futures price changes will be offset by local market prices for hogs.
- Know your profit objectives and the probability of achieving them before you hedge.
- Hedge only a small portion of your anticipated production, if possible, until you are convinced that hedging can do what you want it to do for you.
- Hedge by selling futures contracts that mature nearest to but not before you expect to deliver your hogs. Basis is predictable with most accuracy when comparing local market price with futures price for the same month; for example, February futures prices quoted during February compared to local market prices during February.
- Be prepared to meet all calls for additional margin money; otherwise, you cannot be assured of completing the hedge.
- Know your production costs, including feed, labor, medication, buildings, overhead, etc.
- Consider forward-pricing feed cost when you forward-price your hogs to reduce the risk of rising production costs.
- Remember that a hog producer who does not forward-price his hogs or feed inputs is, in a sense, a speculator. He/she commits cost to production and speculates that price will be high enough to cover those costs.
- Buy futures to offset your previous sale at the same time you establish a price for your hogs at the local market. A delay of even one day or possibly even an hour can make a difference in the hedging outcome.
- Find a broker who understands hedging and knows your objectives to handle your hedging account.
- Find a good banker who understands hedging to finance production and hedging activities. Keep the banker informed. Consider using "tri-party" agreements. These agreements formally commit the hedger to only hedging activities, the banker to meet margin calls or receive excess margin funds, and the broker to facilitate the trades and margin exchanges.

The Don't's

- Don't confuse hedging with futures market speculation. Speculators are concerned only with profits or losses in the futures market.
- Don't change pricing objectives in the middle of a hedge.
- Don't lift the hedge by offsetting the futures contract until the hogs are ready for delivery to the local market. Lifting the hedge prior to delivery returns you to a speculative position on the price of your hogs.
- Don't try to outguess the market. Once you have hedged, it makes no difference which way prices move as long as futures prices and local prices are offsetting.
- Don't sell futures in amounts greater than the number of hogs you are confident you can produce. To do so means you are speculating on the difference.
- Don't fail to offset futures commitments when you price your hogs in the local market. This makes you a speculator because you no longer have any hogs to sell.
- Don't hedge unless you have, or have made arrangements to get, enough margin money to complete the hedge. Inability to meet a margin call might force you to lift your hedge at the worst possible time. A \$10/cwt change in the lean hog futures price represents \$4,000 on a 40,000 lb contract.

- Don't let your broker make decisions for you. He doesn't share your profits or losses. Above all, don't let a broker talk you into speculation when you want to hedge.
- Don't let a price that is perfectly acceptable slip away while waiting for futures prices to go a few cents higher.

Hog Futures Contract Specifications

Units of trading. Chicago Mercantile Exchange: 40,000 lbs. of carcass weight. MidAmerica Exchange: 25,000 lbs. of live weight.

Underlying Cash Market. Chicago Mercantile Exchange: two-day, three area weighted average price per pound for packer base weight hogs, 51%-52% lean (.80-.89 inches of backfat at last rib).

MidAmerica Exchange: two-day weighted average USDA No. 1, No. 2, & No. 3 direct trade, Iowa/Southern Minnesota live hog market price. Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may be similar. Persons using such products assume responsibility for their use in accordance with current directions of the manufacturer. The information represented herein is believed to be accurate but is in no way guaranteed. The authors, reviewers, and publishers assume no liability in connection with any use for the products discussed and make no warranty, expressed or implied, in that respect, nor can it be assumed that all safety measures are indicated herein or that additional measures may be required. The user therefore, must assume full responsibility, both as to persons and as to property, for the use of these materials including any which might be covered by patent. This material may be available in alternative formats.

Contract Trading Period. Trading in each contract commences approximately one year prior to the contract's maturity date. The maturity date on both the Chicago Mercantile Exchange Lean Hog contracts and the MidAmerica Exchange Live Hog contracts is the 10th business day of the contract month.

Delivery. Cash hogs or carcasses are not deliverable on the contracts, only the cash value. The cash value of contracts are calculated based on the contract specifications at the contracts maturity. The cash value is used to settle contracts which have not been liquidated prior to the end of each contract's trading period.

Contract Months. February, April, June, July, August, October, and December.

Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may be similar. Persons using such products assume responsibility for their use in accordance with current directions of the manufacturer. The information represented herein is believed to be accurate but is in no way guaranteed. The authors, reviewers, and publishers assume no liability in connection with any use for the products discussed and make no warranty, expressed or implied, in that respect, nor can it be assumed that all safety measures are indicated herein or that additional measures may be required. The user therefore, must assume full responsibility, both as to persons and as to property, for the use of these materials including any which might be covered by patent.

This material may be available in alternative formats.

Information developed for the Pork Information Gateway, a project of the U.S. Pork Center of Excellence supported fully by USDA/Agricultural Research Service, USDA/Cooperative State Research, Education, and Extension Service, Pork Checkoff, NPPC, state pork associations from Iowa, Kentucky, Missouri, Mississippi, Tennessee, Pennsylvania, and Utah, and the Extension Services from several cooperating Land-Grant Institutions including Iowa State University, North Carolina State University, University of Minnesota, University of Illinois, University of Missouri, University of Nebraska, Purdue University, The Ohio State University, South Dakota State University, Kansas State University, Michigan State University, University of Wisconsin, Texas A & M University, Virginia Tech University, University of Tennessee, North Dakota State University, University of Georgia, University of Arkansas, and Colorado State University.