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Feed Price Risk Management Considerations for Catfish Producers

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Record high prices for catfish feed and fuel, coupled with significantly lower live fish prices, are having a significant impact on the financial stability of the U.S. farm-raised catfish industry. In an effort to assist farmers in making informed decisions concerning adjustments to farming operations, Mississippi State University's National Warmwater Aquaculture Center and the Department of Agricultural Economics will publish a series of articles on this subject.

Perhaps the most significant factor affecting the profitability of catfish farming is the dramatic increase in feed prices over the last 6 months. The first article in this series will therefore focus on factors affecting feed prices. We will provide insights into the global economic situation for the major catfish feed ingredients – corn and soybeans – as well as future pricing patterns which can be helpful in understanding how catfish feed prices will react. Subsequent articles will discuss the impact of the Farm Bill on catfish production and methods to decrease production costs.

Corn and Soybean Prices

A continuing concern for U.S. catfish producers will be the increasing price of catfish feed. Higher catfish feed component prices for corn and soybean meal have resulted in higher catfish feed prices in 2007 that are projected to continue into 2008. The price of 32% protein floating catfish feed was $243/ton in January 2006, rose to $276/ton in January 2007, and to $370/ton in January 2008. The associated cost of production for these increasing feed costs are estimated to be $0.74/lb, $0.78/lb, and $0.90/lb respectively.

On July 12, 1996, the price on the July Corn contract hit $5.54 ½ per bushel – a record price for any corn futures contract. These prices were due to low stocks, a result of consecutive years of disappointing production. That was, in the market's view, a short-run situation. In fact, prices on the new crop contract (December 1996 contract) never climbed over $3.90 per bushel, reflecting the market's expectation that the coming 1996 harvest would return corn stocks to adequate levels.

In late February 2008, all contract months from July 2008 to July 2009 traded over the old record of $5.54 ½ per bushel. More significantly, all contracts from March 2008 through December 2010 were well over $5 per bushel and trading within about a $0.40 range. The relatively tight trading range of contracts over a 3-year span is significant because it reflects the market's current expectation that high grain prices are likely to persist for some time. To understand what is behind this expectation, it is instructive to consider the supply and demand balance sheet for corn. Table 1 shows the corn balance sheet for the last four marketing years.

Table 1. Corn Supply and Demand Balance Sheet: 2004/05 – 2007/08

	2004/05	2005/06	2006/07	2007/08F
Planted Acres (mil.)	80.9	81.8	78.3	93.6
Total Production	11.807	11.114	10.535	13.074
Total Supply	12.776	13.237	12.514	14.393
Total Use	10.662	11.270	11.210	12.955
Ending Stocks	2.114	1.967	1.304	1.438
Farm Price	$2.06	$2.00	$3.04	$3.75 - $4.25

Note: Supply and use figures in billion bushels.
Source: USDA World Agricultural Outlook Board.

The data in Table 1 summarize a couple of important features of the corn market. First, the production figures over the last four marketing years are uniformly high. In 2007, due to the historic shift of acreage into corn, the previous production record was shattered, with a crop exceeding the 13 billion bushel mark.

The second notable point is that total use of corn has increased fairly dramatically over the past four years, with the bulk of that increase coming just in the most recent marketing year. Not surprisingly, the primary source of increased demand is for ethanol production. Ethanol use has increased by 12% from the 2004/05 level and is expected to increase almost 5% further by 2008/09. This reflects the effect of higher oil prices, which make ethanol production a profitable proposition, as well as the effect of key energy policies such as the $0.51 per gallon tax credit to blenders and, probably most importantly, renewable fuels standards (RFS) ethanol blending mandates. The share of corn use claimed by feed has fallen by about 12% since 2004 and is expected to drop another 4% or so in 2008/09. This underscores the challenge that livestock producers will continue to face in sourcing feedstuffs in an environment of increasing bio-energy production.

Of course, developments in the corn market have impacts beyond the corn market alone. The large shift in acreage to corn between 2006 and 2007 exerted tremendous influence on other crop markets, especially soybeans. Table 2 presents the supply and demand balance sheet for soybeans.

Table 2. Soybean Supply and Demand Balance Sheet: 2004/05 – 2007/08

	2004/05	2005/06	2006/07	2007/08F
Planted Acres (mil.)	75.2	72.0	75.5	63.6
Total Production	3.124	3.063	3.188	2.585
Total Supply	3.242	3.322	3.647	3.165
Total Use	2.986	2.873	3.073	3.025
Ending Stocks	0.256	0.449	0.574	0.140
Farm Price	$5.74	$5.66	$6.43	$10.00 - $10.80

Note: Supply and use figures in billion bushels.
Source: USDA World Agricultural Outlook Board.

The most interesting aspect of the soybean supply and demand data is the rapid draw-down in ending stocks expected during the current marketing year. Due to the dramatic reduction in soybean plantings in

2007, soybean stocks are expected to decline from a record 574 million bushels to just 140 million bushels (not a record low but certainly low in historical terms) over the course of a single marketing year.

While demand for corn for ethanol production has provided important support for corn (and by extension, other grain) prices, this has not been the only factor in the market. Two consecutive years of disappointing global wheat production have significantly diminished world wheat stocks. Due to greatly diminished production over the last two years in Australia, the former Soviet Union (FSU), western Europe, and Canada, global wheat stocks are at their lowest level in 30 years. Since the US has become the supplier of last resort for many importing countries, US wheat stocks have been pulled down to their lowest level in 60 years. This global shortage of wheat has resulted in record high wheat prices. Moreover, the reduced availability of wheat has provided support for US corn exports to replace short feed wheat supplies in many countries. Foreign buyers have been somewhat insulated from the impact of high corn prices (and wheat prices, for that matter) by the fact that the dollar is at its weakest level in many years against other major foreign currencies.

Grain Production/Supply Outlook

Strong demand for corn, reduced soybean production, and multi-year production problems with wheat provide a good explanation of recent price strength in the grain complex; however, these factors do not fully clarify the market's expectations of persistently high prices. To explain this, one needs to consider the potential for changes in grain stocks from current levels. In the current market environment, all grain stocks are low, and all prices are high. It is difficult to affect the sort of wholesale shift in acreage that the market witnessed with respect to corn in 2007. Prices for all crops are too competitive to allow that. Thus, it is likely that stocks for all crops will only change modestly in the short run. USDA forecasts discussed at the February Outlook Forum actually call for further tightening of corn stocks in 2008/09 along with only a very small increase in soybean stocks. Of course, these projections are based on very little hard data (e.g., with respect to plantings and yields) at this point, so there is tremendous uncertainty as to what will actually happen with grain supplies over the next year.

Current expectations are for corn plantings of around 90 million acres with yields of around 155 bushels per acre. With current beginning stocks and use projections, those values would result in carryover of a little over 1.2 billion bushels at the end of the 2008/09 marketing year – lower than the projected carryover for the current marketing year.

The soybean market is in a similar situation to the corn market with respect to longer-run supply expectations. Current expectations suggest soybean plantings of about 71 million acres with yields of about 42 bushels per acre. This would put 2008/09 carryover at just over 160 million bushels – virtually unchanged from the 160 million bushel carryover projected for 2007/08.

Barring some sort of notable downturn in demand over the remaining few months of the current marketing year, yields significantly above trend will be required to increase grain stocks from the current historically low levels. It is also worth noting that the acreage expectations noted above imply bringing new acreage into production in 2008. In the grain and oilseeds outlook presented at the February Outlook Forum, USDA noted that combined corn, soybean, and wheat acreage is expected to be the largest since 1984 at 225 million acres. Some of this acreage increase reflects increased double-cropping of wheat and soybeans, and some reflects a shift from other crops (notably cotton). Still, for this acreage to be achieved, some ground that has not been in row crop production will have to be brought back in. In some regions this will include land currently in pasture; in others, it will include land recently coming out of Conservation Reserve Program (CRP) contracts.

Risk Management Considerations

The difficulty in assessing how many acres might be pulled back into crop production along with the uncertainty regarding actual yields represents major points of concern for the market. These unknowns account for the persistently high price expectations being reflected in current futures prices. Moving forward, the fundamental support for prices provided by tight grain stocks will remain at least through this production season. However, as uncertainty about this year's crop is resolved, market expectations will adjust and could become less supportive of high prices.

The *Prospective Plantings* report will be released at the end of March 2008. This will be the earliest objective assessment of expected crop acreages. If this report bears out current ideas of the highest corn, soybean, and wheat acreage in twenty-five years, prices could retract some. After that, the market will begin to focus on planting progress and – as the season progresses – yield potential. Even relatively minor setbacks to the crop will likely elicit very strong reactions from the market given the very inadequate buffer provided by current stocks. A major crop failure (e.g., a significant drought in the Midwest) would easily send prices beyond the current record levels.

When to Book Feed

Recently, a producer asked, "When should I book feed?" and the quick response was, "Six months ago!" Although the response was intended to lighten the mood, the question of when to book feed is very relevant. Recently, catfish feed booking price levels have been slightly below "out the door" feed prices. However, only a couple of months ago the reverse was true. Obviously, when "out the door" feed prices are lower they are the better buy, but booking rates are for the future and are not easily anticipated. Thus, the information on futures grains supplies, use and ending stocks provided here can be helpful. There is risk in booking feed under times of uncertainty and this year will certainly be one of those times. But keeping up with the grain markets' futures contract prices and with USDA crop reports can provide some idea of the changes in grain prices and subsequent catfish feed prices.

The present grain situation puts catfish producers in a very uncomfortable position. Prices on feed grains are not likely to be very attractive in the foreseeable future. However, the potential for even less attractive prices at some point in the upcoming production season cannot be ignored. This leaves catfish producers with two alternatives.

- First, one could watch the market between now and the close of planting and try to forward purchase some portion of expected feed needs when any price decrease might occur. As grain acreage uncertainty is resolved and as the wheat market (possibly) settles down, prices across the grain complex could retreat substantially – though not likely to a level that any end user would consider low.
- Second, one could do no forward pricing of feed – essentially purchasing feed hand-to-mouth and hoping for a bin-busting grain crop to take shape this year.

Each of these strategies has a downside. In the first case, the risk is that the producer will purchase feed early and then watch prices decline throughout the crop production season as a record crop takes shape. In the second case, the risk is that the producer will have to purchase all feed at record high prices as drought, flood, hail, fire, brimstone, or some other such pestilence does damage to a significant portion of the crop this year.

The question a producer needs to ask is "Which of these risks can I live with?" The answer won't be the same for everybody, and it should take into account the producer's willingness and financial ability to withstand each worst-case scenario. Some booking of your future feed provides you with a known cost and even with the higher booking feed cost you will know how much your equity will be affected (loss or gain). And, as mentioned above, if growing conditions for grains are favorable in 2008, then booking will look like a bad decision; but if there is some adverse weather event and grain prices go sky high, then having booked a portion of your feed would have made sense. This is a difficult question to answer and a lot of the answer pertains to you and how much risk you want to have involved with this year's crop.

Additional Resources

To find out more detail and to follow the grain situation there is a web site and two email newsletters that you can subscribe to which may help in your understanding of the direction catfish feed prices are likely to go:

- The Chicago Board of Trade website at http://www.cbot.com/ has market data pertaining to grain pricing, futures markets for grains, and pertinent information on ethanol, the economy, and other factors that will influence the direction of commodity prices. These factors can provide an indirect look at future catfish feed prices.
- An email newsletter called "Cattle Market Notes" is a weekly analysis that looks at livestock markets (they are in the same predicament the catfish market is in), and includes information on corn, soybeans and wheat supplies, demand and price changes. Also, Dr. Steve Martin and Dr. John Anderson produce a twice-monthly crop marketing newsletter called the "Commodity Market Update". This newsletter provides more detail on the grain market situation (along with information on cotton and rice). To subscribe to one or both newsletters simply send Dr. Anderson an email at Anderson@agecon.msstate.edu stating that you would like to be placed on his "Cattle Market Notes" and/or the "Commodity Market Update" newsletter email lists. The "Cattle Market Notes" newsletter is usually sent out Friday afternoon. The Commodity Market Update newsletter usually goes out every other Monday.

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