



MORE RISK LESS FLEXIBILITY

However the ethanol dilemma plays out, the stakes of betting wrong will increase.

WES ISHMAEL

As the government continues its ethanol push, the effort is having a significant impact on the cattle feeding business. The negative effects—almost certainly unintended and most likely unanticipated by ethanol enthusiasts—are serving to reshape the way feedyards do business.

The consequences have heightened the risks for cattlemen in various ways. Be it locking up feed prices further out, securing more ground to accommodate the nutrient management required by distillers grains (DGs), or figuring out how to maintain yard occupancy with fewer days on feed per head; each encourages long-term commitments to supply. Committing to input supply also implies a commitment to the demand side—yard occupancy—meaning there may be less procurement flexibility.

Sure, as margin operators cattle feeders can pass some added costs along. But, Barry Dunn, Ph.D., Executive Director of the King Ranch Institute for Ranch Management, emphasizes, “I think anyone would be naïve to assume cattle feeders will be able to pass along all of the added costs and risks due

to the changing economic dynamics associated with ethanol.”

“Cattle feeders still have a chance, buying feeder cattle right and watching their rations, as long as beef demand remains strong,” believes Dunn. “When basic relationships change, as they have recently in the corn market with the exploding demand in the industrial usage for corn, trends change. The result is that the past may no longer be a good predictor of the future.”

“One of the difficult challenges the cattle industry faces is that multiple and critical price relationships have changed and are in the process of re-establishing themselves, all within a relatively short period of time. These would include: consumer demand, fed cattle prices, transportation costs based on crude oil prices, interest rates, and feed grains,” explains Derrell Peel, Ph.D., extension livestock marketing specialist at Oklahoma State University.

That’s why it’s so tough to predict the ultimate consequences of federally subsidized ethanol on the cattle business. The best anyone has currently are rational assumptions, supported by credible research.

Get Used to High Grain Prices

“In my opinion, corn and sorghum prices are reaching a new plateau and will remain higher for at least the next decade, if not longer, given the anticipated increases in ethanol production,” says Steve Amosson, Ph.D., a Regents Fellow and extension agricultural economist for Texas A&M University. “I expect corn prices FOB the feedlot to typically range between \$3.50 and \$4.50 per bushel for the next couple of years.

“Because of tight supplies, I expect the difference between sorghum and corn prices to narrow. Prices will be more volatile with short or long crops sending prices outside of the range I have stated... Wheat prices will move to a somewhat higher price plateau compared to the long term average price since it can be used as a feed source in rations.”

The Food and Agricultural Policy Research Institute (FAPRI) continues to project higher grain prices. In March, the organization explained, “The world corn price increased dramatically in 2006-07, to \$159.44 per metric ton (\$4.05/bushel), because of demand from ethanol and livestock sectors and sustained exports. FAPRI expects this increase in demand and price to continue until 2009-10, after which production growth catches up with growth in utilization.”

For the record, Amosson explains a bushel of corn produces about 2.7 gallons of ethanol, with technology increasing conversion incrementally. So, it takes about 357 million bushels of corn to produce 1 billion gallons of ethanol.

According to the Renewable Fuels Association (RFA), there are currently 114 ethanol bio-refineries nationwide with the capacity to produce more than 5.6 billion gallons annually. Another 78 ethanol refineries plus seven expansion projects under construction would add a combined annual capacity of more than 6 billion gallons. So more than double 4.86 billion gallons of production in 2006. Ethanol production last year was 26.4% larger than the 3.90 billion gallons churned out in 2005, according to RFA statistics.

“Modest forecasts suggest that ethanol production could increase to a total of 10-12 billion gallons in the next three to five years,” says Peel. “This would require roughly 17 million more acres of corn production or more imported corn if other uses of corn remain at current levels.”

Based on USDA numbers, Peel explains U.S. corn acreage has averaged 72 million acres for the past decade, roughly 23% of total

crop acreage. Add soybeans, wheat and hay and you’re talking 85% of all planted acres. Cotton and grain sorghum account for another 9%.

“This suggests that most, if not all, of the increased corn acreage will have to come from acreage currently used for production of one of the major crops,” says Peel. “The most likely source of additional corn acres is from soybeans. Both crops are grown in the same areas and usually in a 1:1 corn to soybean crop rotation. The simplest way to increase corn acreage is to utilize a 2:1 corn to soybean crop rotation. This could allow up to 95 million acres to be used for corn while reducing soybean acreage to less than 50 million acres.”

As it is, USDA’s latest estimate for 2007 corn acres is 90.5 million acres—12.1 million acres more than last year—the most since 1946, for projected production of 12.2 billion bushels. There were about 78 million acres of corn planted last year producing 10.5

billion bushels. USDA estimated soybean acres 8.4 million acres lower than 2006 at 67.1 million, the lowest since 1997. Wheat acreage was projected at 60 million acres, up 2.7 million acres from 2006.

Incidentally, Peel points out some of the 36 million acres currently enrolled in the CRP program could go into crop production. These acres would most likely shift to wheat or some other crop, replacing more fertile ground that has been switched to corn.

Even with the predicted expansion and the corresponding

increase in corn production, the U.S. will be hard-pressed to produce the 35 billion gallons it would take to meet President Bush’s goal for alternative liquid fuel production by 2017.

“Over the next few years, it’s not out of the question that we could see corn priced at \$4, \$5 or even \$7 per bushel.” Dunn said the old stand by rule is that a 1% increase in demand for a commodity results in a 5 to 8% increase in price. “If that holds true, the price of feed grains could be higher than most anticipate,” says Dunn.

Closer to home, Dunn says the roller-coaster of feed cost and availability means figuring rations will be dynamic, to say the least.

Distillers Grains are neither Cheap nor Reliable

Though Distillers Grains (DGs)—dry (DDGs) and wet (WDGs)—will presumably be plentiful, at least for a while, they obviously have limits as a corn substitute.

“In general, the impact of increased ethanol production is to increase the relative supply of protein feeds and reduce the relative



supply of energy feeds for animals,” explains Peel. “Thus, byproduct feeds will compete more with protein feeds, usually derived from oilseeds such as soybeans and cottonseed than with energy feeds. Availability of distillers grains may help offset potential reductions in soy meal production if corn replaces soybeans in the total crop mix. Although the net impact on protein feed supplies and prices is uncertain, there is clearly a relative deficit of energy feeds which implies an increased demand for other energy feeds such as grain sorghum and possibly wheat, barley and oats. It is also true that generally higher feed grain prices will increase the value of forage and will favor production of cattle using more forage and less feed grains.”

That’s aside from the way the availability of DGs is regionalizing the feed market, increasing nutrient management challenges, and the unknowns about their impact on cattle performance and carcass quality past certain ration levels. For that matter, Dunn echoes what feedyard managers have had reaffirmed: there’s a huge difference between plants in the nutritional value of the DGs they produce.

Amosson suggests cattle feeders consider forging agreements with ethanol plants that require consistent quality in DGs. To this point he says the ethanol industry largely regards DGs the same way a feedyard might consider manure—a necessary byproduct of production that has to be dealt with, rather than a component of production that can lower overall costs or increase value.

Furthermore, though the run-up in corn prices resulted in what Amosson believes might be a permanent shift in corn basis for folks in the southern High Plains, he does expect feeders in this neck of the woods to begin seeing DGs prices more reflective of their energy value than protein, as is already occurring in the Midwest.

In the short-term, Dunn says logic would have other supplements such as soybean meal and cottonseed meal becoming more available in areas that aren’t located near ethanol production. But when the next wave of ethanol production—cellulosic conversion—comes on line in a few years there is liable to be a scarcity of DGs, too.

“The initial cellulosic production of ethanol won’t be from switch grass or forest trash, it will be from distillers grains,” says Dunn. He’s basing that prediction based on conversations with researchers from the Agricultural Research Service who are scurrying to find enzymes to digest DGs.

Still, Amosson says if there is any one thing a cattle feeder

should learn during this industry transition, it’s how to successfully feed DGs. “That may determine the absolute length of time you can afford to feed them,” he says.

As cattle feeders begin examining the possibilities, Amosson is visiting with more who are considering feeding DGs to cattle while they’re still on pasture, trying to get them started on grading potential, while pushing them to heavier weights ahead of the feedlot. To an extent, this strategy may also counteract the occupancy-depressing effect of feeding cattle for fewer days.

Higher Costs Will Increase Beef Prices

Depending on how you polish your crystal ball, the net effect of all of this could be record high cattle prices and a competitive advantage for beef.

On the supply side of the equation, more than one bead-pusher was surprised at just how much support declining carcass weights provided to fed cattle prices this spring.

As for the demand side, Amosson explains, “A rule of thumb is that calf prices have to fall \$1.50 per hundredweight for every dime corn prices increase to leave the forward-linked sectors (cattle feeders and stocker operators) with the same relative profitability.

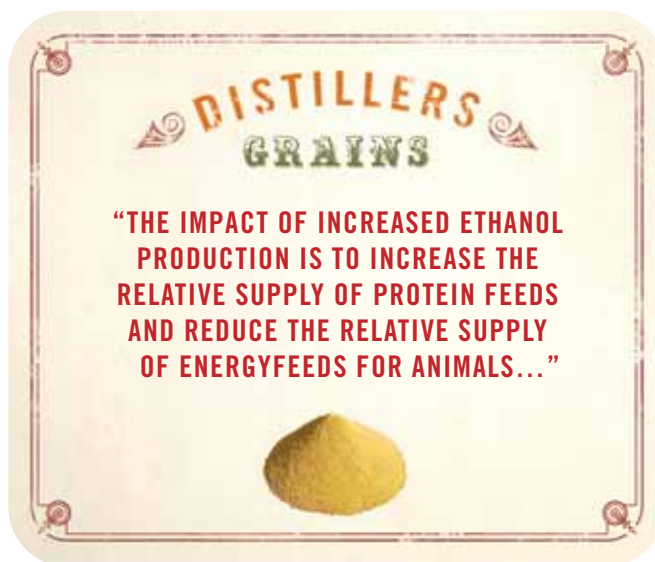
“Feedlot operators are reducing the price of feeders in response to the increased feed cost resulting in stocker operators lowering the amount they are willing to pay for calves.

Therefore, a \$1.50 or \$2.00 per bushel increase in corn prices could result in a decrease in calf prices of \$22.50 or \$30.00 per hundredweight. Cow-calf operators facing these dramatically lower prices will reduce production, ending one of the shortest build-up phases of the cattle cycle in history. The resultant shorter supplies will lead to higher cattle prices in all sectors of the cattle industry. In fact, I anticipate record prices being reached within 2-3 years.”

Spun differently, this scenario assumes industry contraction. Think back to 1996 when calf prices dropped below 60 cents, and that’s not farfetched. Back then, short corn supplies were behind high grain prices, rather than demand, so sustained pressure on prices heading into the feedlot this time around seem likely.

As you ponder all of that, hear what Amosson has to say about the potential impact on beef market share. Since neither pork nor poultry can utilize DGs to the degree that cattle can, Amosson believes the resulting comparative added advantage in ration costs could help beef expand its share of the protein market.

There’s no question that the beef industry has proven the value of consumer demand the past couple of years.



“In the last 15 years the annual carcass cutout price for beef has averaged approximately \$116 but has ranged from approximately \$95 in 1998 to approximately \$142.50 in 2006,” explains Dunn. “In eight short years the average carcass cutout value has increased by approximately 50%. When put in context of increasing supplies, disease concerns, and issues of access to foreign markets, this bullish demand is even more remarkable.”

As long as the industry continues to focus on the consumer, Dunn sees no reason to assume faltering consumer beef demand will further complicate the new math fostered by ethanol.

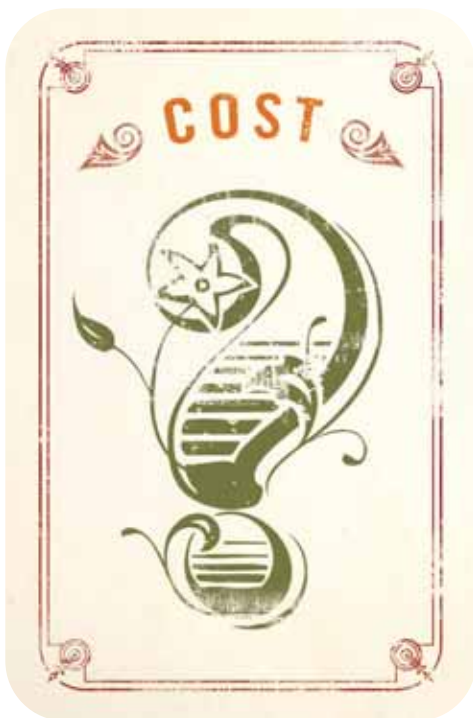
“Ultimately, the changes in consumer demand, fed cattle prices, transportation costs, interest rates, and feed grains will collectively determine the retail price of beef,” says Dunn. “The new price equilibrium achieved amongst and between these variables is difficult if not impossible to predict, but it will ultimately impact the inventory of cattle and the profitability of all segments of the industry.”

Potentially, some industry observers have suggested that ethanol could also change the geographic location of the cattle feeding business. Visit with folks in or near the Corn Belt and they say feedlot capacity is growing, especially in Nebraska and Iowa.

According to Dunn, “In 1970, 17% of the fed cattle in the United States were in Iowa compared to 7% in 2006 (National Agricultural Statistics Service, 2006). This dramatic change occurred because of regional advantages in the costs of production and the following realignment of other production sectors. Realignment of the core production of beef has been and will always be driven by economics, not sentimentality.”

Neither history nor economics favor a new wholesale migration of the cattle feeding business, though. Climatic differences and the increased cost of compliance with environmental regulations suggest limited growth. And legislation passed in the Corn Belt in recent years suggests elected officials and voters in that region are not receptive to an expansion of feeding operations.

As Amosson points out, “The same conditions that attracted cattle feeding to the Panhandle and to the High Plains continue to exist.”



All That We Don't Know

Even with rational assumptions, however, there is still plenty we're sure that we don't know.

For instance, the entire ethanol industry is being built on the supposition that crude oil prices will remain high enough over the long run to make ethanol an economically viable alternative.

Even if ethanol and other bio-fuels are the wave of the future, producing enough raw material is only the first challenge. Specifically, there are sound reasons to doubt that ethanol production can expand as fast as predicted simply because of the infrastructure necessary to store and haul materials around the country.

(continued on page 140)

PRODUCT INFORMATION

NADA #141-063, Approved by FDA.

Nuflor®
(FLORFENICOL)

Injectable Solution
300 mg/mL

For Intramuscular and Subcutaneous Use in Cattle Only.

BRIEF SUMMARY (For full Prescribing Information, see package insert.)

INDICATIONS NUFLOR Injectable Solution is indicated for treatment of bovine respiratory disease (BRD), associated with *Mannheimia haemolytica*, *Pasteurella multocida*, and *Histophilus somni* (*Haemophilus somnus*), and for the treatment of bovine interdigital phlegmon (foot rot), acute interdigital necrobacillosis, infectious pododermatitis associated with *Fusobacterium necrophorum* and *Bacteroides melanogenicus*. Also, it is indicated for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida*, and *Histophilus somni* (*Haemophilus somnus*).

RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 28 days of the last intramuscular treatment. Animals intended for human consumption must not be slaughtered within 38 days of subcutaneous treatment. Do not use in female dairy cattle 20 months of age or older. Use of florfenicol in this class of cattle may cause milk residues. A withdrawal period has not been established in prurinating calves. Do not use in calves to be processed for veal.

WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains materials that can be irritating to skin and eyes. Avoid direct contact with skin, eyes, and clothing. In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. Consult a physician if irritation persists. Accidental injection of this product may cause local irritation. Consult a physician immediately. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information.

For customer service, adverse effects reporting, and/or a copy of the MSDS, call 1-800-211-3573.

CAUTION Not for use in cattle of breeding age. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Intramuscular injection may result in local tissue reaction which persists beyond 28 days. This may result in trim loss of edible tissue at slaughter. Tissue reaction at injection sites other than the neck is likely to be more severe.

ADVERSE EFFECTS Inappetence, decreased water consumption, or diarrhea may occur transiently following treatment.

Made in Germany

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24823148-JBS Rev. 2/07

Last fall, Roger Ginder, an economics professor at Iowa State University analyzed the impact of shifting more soybean acres to corn in that state. He figures an acre of soybeans equates to the need for 60 bushels of storage capacity; another 120-160 bushels worth is needed for each acre of corn. Projected increased corn production in Iowa by 2010 means just the extra storage capacity needed is larger than all of the storage capacity that currently exists in the state. Other dominos lined up with equally exponential challenges include grain drying capacity, rail cars and truck hoppers.

Ginder concludes, “The rapid increases in ethanol production capacity will put heavy pressure on existing grain transportation and storage infrastructure. Little has been done to add to the existing storage and transportation infrastructure to accommodate the planned expansions in ethanol production capacity. Significant additional investment in infrastructure is needed for the planned expansion in capacity to be economically viable. Low margins in the grain elevator sector will make it difficult to expand commercial storage as rapidly as the ethanol production sector is expanding. Lag times to manufacture and build the infrastructure also are a barrier. Planned increases in production could easily outstrip the capacity to manufacture and build the rail cars and storage facilities needed to accommodate the growth. If not addressed, these infrastructure limitations can be expected to slow the rate at which ethanol production can grow.”

If you go by projections from FAPRI, ethanol production, or at least the rate of expansion, may be self-limiting to a degree, anyway.

FAPRI analysts told Congress in March, “Despite high crude oil prices and various policy incentives, profit margins in bio-energy are expected to deteriorate...this decline is the result of high feedstock prices and progressive elimination of unmet demand following a large expansion in capacity in renewable fuels.”


Specifically, FAPRI expects the world ethanol price to fall to \$1.50 per gallon in 2007, largely in response to a 2.4 percent decline in the price of crude oil. According to FAPRI analysts, “Projections show the ethanol price continuing to fall throughout the decade, dropping to \$1.35 per gallon by 2016 as production growth outpaces growth consumption.”

Then there’s that whole policy thing.

“The growing demand for corn for ethanol represents a fundamentally new direction for U.S. agriculture. Use of agricultural resources for energy production is pitted against traditional food and fiber production resulting in a complex and sweeping set of changes and trade-offs in agricultural input and output markets,” says Peel. “Little can be said with certainty about the net impacts, both short and long run, except that markets will be dynamic and risky during the transition.

“Agricultural producers will see new opportunities (especially in the crop sector) and new threats (especially in the livestock sector). Producers will need to be increasingly nimble and vigilant in order to take advantage of opportunities or mitigate the threats in volatile markets. Many fundamental price and value relationships are likely to change and must be constantly evaluated to manage risk and increase the odds of financial success.”

Dunn likens the ethanol boom to a freight train barreling down the tracks, with new track being laid for it as it goes, and the track behind being pulled up just as quickly. “We’re not going back,” he says.

Amosson is sure of one thing: “Cattle feeders will figure all of this out; they’re too innovative not to.” 

Baytril® 100

(enrofloxacin)

100 mg/mL Antimicrobial Injectable Solution
For Subcutaneous Use In Cattle Only

Not For Use In Cattle Intended For Dairy Production Or
In Calves To Be Processed For Veal

BRIEF SUMMARY:

Before using Baytril® 100, please consult the product insert, a summary of which follows:

CAUTION:

Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.
Federal (U.S.A.) law prohibits the extra-label use of this drug in food producing animals.

INDICATIONS:

Baytril® 100 (enrofloxacin) injectable solution is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Haemophilus somnus*.

ADVERSE REACTIONS:

No adverse reactions were observed during clinical trials. For medical emergencies or to report adverse reactions, call 1-800-422-9874.

ANIMAL SAFETY:

Safety studies were conducted in feeder calves using single doses of 5, 15, and 25 mg/kg for 15 consecutive days and 50 mg/kg for 5 consecutive days. No clinical signs of toxicity were observed when a dose of 5 mg/kg was administered for 15 days. Clinical signs of depression, incoordination, and muscle fasciculation were observed in calves when doses of 15 or 25 mg/kg were administered for 10 to 15 days. Clinical signs of depression, inappetence, and incoordination were observed when a dose of 50 mg/kg had been administered for 3 days. No drug-related abnormalities in clinical pathology parameters were identified. No articular cartilage lesions were observed after examination of stifle joints from animals administered 25 mg/kg for 15 days.

A safety study was conducted in 23-day-old calves using doses of 5, 15, and 25 mg/kg for 15 consecutive days. No clinical signs of toxicity or changes in clinical pathology parameters were observed. No articular cartilage lesions were observed in the stifle joints at any dose level at 2 days and 9 days following 15 days of drug administration.

An injection site study conducted in feeder calves demonstrated that the formulation may induce transient reaction in the subcutaneous tissue and underlying muscle. No painful responses to administration were observed.

WARNING:

Animals intended for human consumption must not be slaughtered within 28 days from the last treatment. Do not use in cattle intended for dairy production. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

HUMAN WARNINGS:

For use in animals only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with copious amounts of water for 15 minutes. In case of dermal contact, wash skin with soap and water. Consult a physician if irritation persists following ocular or dermal exposures. Individuals with a history of hypersensitivity to quinolones should avoid this product. In humans, there is a risk of user photosensitization within a few hours after excessive exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight. For customer service or to obtain product information, including a Material Safety Data Sheet, call 1-800-633-3796. For medical emergencies or to report adverse reactions, call 1-800-422-9874.

PRECAUTIONS:

The effects of enrofloxacin on bovine reproductive performance, pregnancy, and lactation have not been adequately determined. Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

Baytril® 100 contains different excipients than other Baytril® products. The safety and efficacy of this formulation in species other than cattle have not been determined.

Quinolone-class drugs should be used with caution in animals with known or suspected Central Nervous System (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation which may lead to convulsive seizures.

Quinolone-class drugs have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species. No articular cartilage lesions were observed in the stifle joints of 23-day-old calves at 2 days and 9 days following treatment with enrofloxacin at doses up to 25 mg/kg for 15 consecutive days.

NADA # 141-068, Approved by FDA

Bayer HealthCare LLC
Animal Health Division
Shawnee Mission, Kansas 66201 U.S.A.



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