CattleFax | THE DECIDING FACTOR

LONG TERM OUTLOOK

Special Edition

WWW.CATTLEFAX.COM

December 2013

Proudly Sponsored by

Elanco

INDU$TRY PROFIT TRACKER

Profits and losses in the beef and cattle industries are rarely universal across sectors. The economic direction for each segment is forecast below with the 2014 opportunities and threats to profitability.

COW-CALF

The majority of the United States found relief from the 2013 drought. That should lead to lower feed costs in 2014. It should also lead to record-high profitability for this segment. Beef cow slaughter was smaller in 2013 but not small enough to create expansion. Heifer retention should reach expansion levels in 2014, but expect expansion numbers to be minimal for at least another year.

STOCKER & BACKGROUNDING

The winter grazing conditions in the Central Plains are adequate. Expect to have solid grazing numbers in 2014. The West could be an exception with Mother Nature being slow to assist. Feed availability is ample in the backgrounding segment, and forecasts call for winter operations to be profitable. Summer operators survived the spring 2013 drought and wound up being profitable. The 2014 outlook suggests positive margins but on a smaller scale.

CATTLE FEEDING

Feeding margins through the first three quarters of 2013 were abysmal, but fourth quarter 2013 was positive. Some feedyard capacity was idled in 2013 but at a slower rate compared to the declining calf crop and feeder imports in 2013. The market structure favors more solid margins in first half 2014, but declining margins in the summer and fall. Risk management has played an important role in 2013, and that will continue in 2014.

PACKING

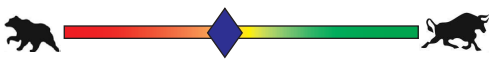
The closing of the Plainview, Texas, packing facility allowed the packing segment to be more profitable in 2013. Transitioning to 2014, the greater risk will be losing a few cow processing plants rather than another fed cattle facility. The contraction could come from any region or size of operation. Packing segment margins will likely be smaller in 2014, but fed cattle facilities will likely maintain a positive margin on average. Cow plants will struggle.

RETAIL

Retail prices made a big shift higher from fall 2012 into winter 2013. Look for retail prices to move seasonally higher this spring and trend higher due to inflation. Higher fed cattle and wholesale values will squeeze retail beef margins. Look for grocery stores to emphasize poultry and pork more often. Both are expected to have increases in production. Poultry will be a value at the retail segment, but beef is still a major draw for consumer traffic and will still find seasonal featuring activity.

Price Expectations	2013	2014	2014 Range Low	2014 Range High
All Fresh Retail Price ($/lb.)	$4.94	$5.12	$4.97	$5.20
Composite Cutout ($/cwt.)	$193	$202	$186	$212
Fed Steer Price ($/cwt.)	$126	$130	$120	$140
750lb Steer Price ($/cwt.)	$148	$165	$150	$178
550lb Steer Price ($/cwt.)	$167	$190	$175	$205
Utility Cow Price ($/cwt.)	$79	$90	$78	$100
Hide & Offal Value ($/cwt.)	$14.20	$14.80	$13.80	$15.70
Spot Corn Futures Price ($/bu.)	$5.81	$4.20	$3.60	$4.90

FOOD SERVICE



Smaller available supplies of lean trimmings due to a smaller non-fed slaughter and a declining fed slaughter will put pressure on fast-food segment margins. High-end steakhouses should gain the most. Middle meat prices will be higher, but the availability of quality product should be less burdensome with more Choice grading cattle in the fed slaughter mix.

SUPPLY: SMALLER AGAIN, EXPANSION AROUND THE CORNER

TOTAL BEEF PRODUCTION TIGHTENS

Per capita net beef supplies are forecast at 54.0 pounds in 2014 – falling 2.3 pounds compared to 2013. Smaller U.S. beef production in 2014 is the main reason for the forecasted drop in per capita net beef supply. The trend of smaller calf crops over the last several years will contribute to a smaller available pool for fed slaughter. Also, CattleFax expects more producers to retain heifers for replacement females as the drought and feed situation continues to improve. Additionally, beef cow slaughter should continue its sharp decline in 2014 as cow-calf producers take advantage of higher expected returns over cash costs.

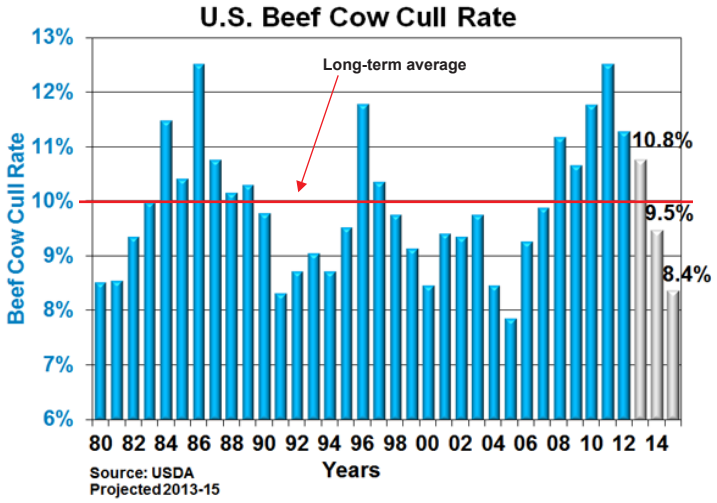
U.S. beef production in 2014 is forecast at 24.8 billion pounds – declining more than 800 million pounds from 2013 and representing the smallest beef production since 2005. Contributing to this decline, fed slaughter is forecast to drop 600,000 head, and cow and bull slaughter is also expected to decline 600,000 head in 2014. Heifer slaughter as a percentage of steer and heifer slaughter has fallen for three-consecutive years, which gives an indication that producers are trying to hold onto replacement heifers. This trend should continue and possibly accelerate over the next two years.

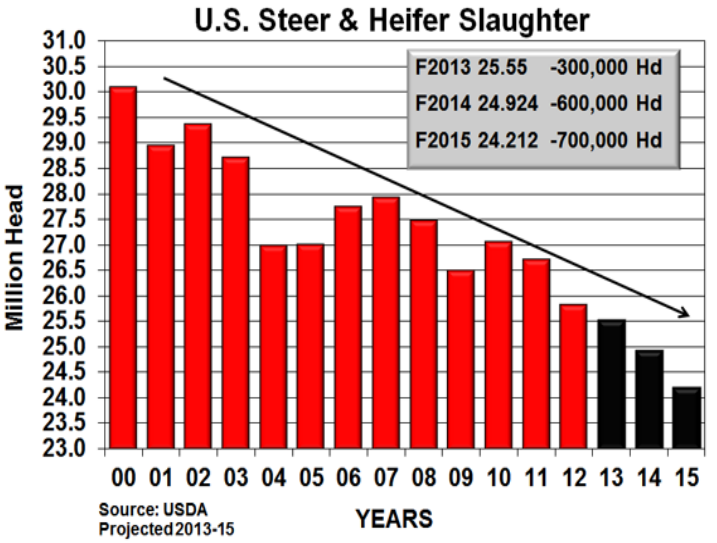
TRANSITIONING TO EXPANSION

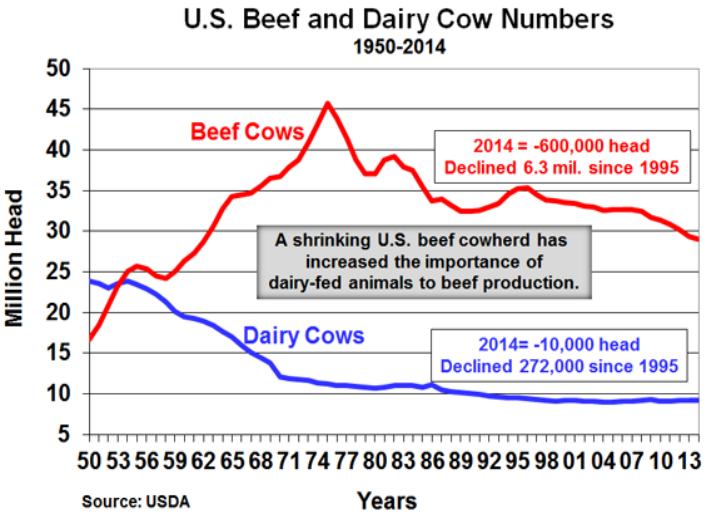
The U.S. beef cowherd on January 1, 2014, is expected to decline 300,000 head – starting the year at 29 million head. Beef cow slaughter was at liquidation pace – at or above a year-ago levels – for more than half of 2013. With beef cow slaughter expected to decline in 2014 and three years of increased replacement heifer numbers, the beef cowherd is set to stabilize by January 1, 2015. It could even be slightly larger than the 2014 herd. A significant increase in the beef cowherd is not expected until 2016 or 2017 as producers can finally act in response to all the discussion about herd expansion thanks in large part to a break from Mother Nature. Even with expansion likely underway, it will take until 2017 or 2018 before a trend of larger fed supplies can even begin.

The dairy cowherd is expected to be down just 10,000 head on January 1, 2014, and total 9.21 million head. Dairy cow slaughter in 2013 was up 40,000 head – the largest since 1986. The turnover rate in the dairy herd has been increasing over the past several years as it appears the older less productive cows are being culled sooner and replaced with younger females. This is how the herd has remained mostly flat in recent years despite larger cow slaughter.

Cattle Slaughter and Beef Production	2013	2014	% Change
Commercial Cattle Slaughter (mil. head)	32.4	31.2	-4%
Fed Slaughter (mil. head)	25.5	24.9	-2%
Cow/Bull Slaughter (mil. head)	6.9	6.3	-9%
Dairy Cows (mil. head)	3.2	3.1	-4%
Beef Cows (mil. head)	6.3	5.8	-8%
Commercial Beef Production (bil. lbs.)	25.7	24.8	-3%







THE BOTTOM LINE

- Expect the beef cowherd to stabilize by 2015 as beef cow slaughter slows and heifer retention continues to increase.
- High returns for cow-calf producers and a break from Mother Nature will fuel producer expansion trends over the next several years.
- Tighter beef supplies will continue to be bullish cattle prices in 2014.

DEMAND: CONSUMER INCOME, ECONOMY BECOME FOCUS

INCOME AND ECONOMY FAIL TO KEEP UP

The consumer is the source of all new dollars shared across the beef industry. Unfortunately, additional income has eluded consumers in recent years. Real personal income – excluding government payments – in 2013 is only 1.3 percent higher than the previous year, while the consumer inflation was up 1.5 percent. Consumers continue to see personal spending out pace available income. Since March, expenses as a percent of personal income rose above 92 percent. Those are levels not seen since the recession and indicate the squeeze consumers feel today. Consumers should see some relief in expenses in second half 2014 as falling energy prices ease transportation and home energy costs, but higher taxes and increased healthcare costs could offset benefits.

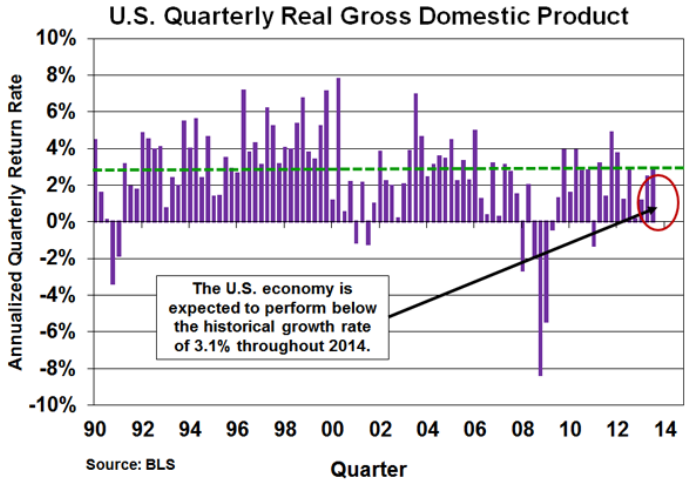
Third quarter 2013 U.S. real gross domestic product is only up 3.1 percent compared to a year ago on an annualized basis – despite major equity market indexes growing 20 percent year-to-date. The economy is certainly improving, but it is doing so at a pace below the historical average. Industry analysts expect the slow recovery in the U.S. economy to continue in 2014, and that will limit consumer income growth. Pressure will remain on grocery and foodservice segments to price beef affordably, despite tighter supplies pushing wholesale beef prices higher.

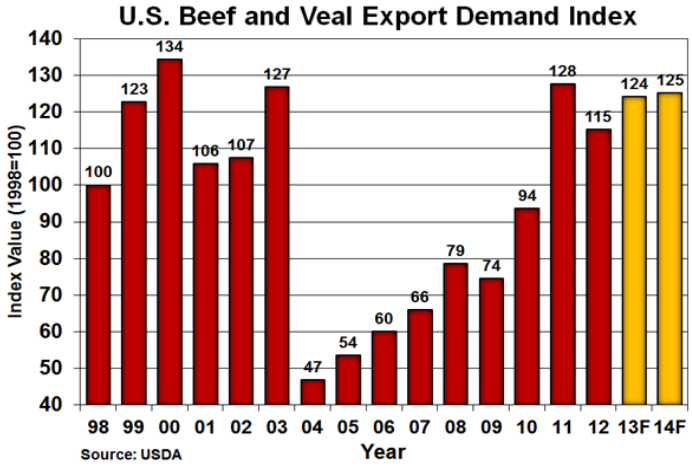
GROCERY, RESTAURANT AND EXPORT PERFORMANCE MIXED

Retail beef prices increased 5 percent to $4.94/lb. in 2013 – reaching record-high levels once again. Ground beef prices led the increase – up 12 percent to nearly $3.40/lb. Roast and steak item increases were more modest around 2 percent. Consumer beef demand improved 1.4 percent through the price increase. CattleFax expects retail prices to increase another 3.5 percent in 2014, but the appreciation will be a reflection of tighter beef supplies rather than increasing demand. Beef will remain grocer's destination item in the meat case. However, the consumer income squeeze, economic uncertainty, and steady to cheaper pork and poultry offerings will suppress retail demand.

Customer traffic and same store sales lagged the previous year by 1 to 2 percent in industry reports, but year-end performance has been better. The outlook is mixed for restaurants in 2014. Quick-service restaurants should thrive again in 2014, but tighter lean trimming supplies and higher wholesale grind prices will challenge margins in hamburger-based restaurants. Casual dining could struggle in 2014. Differentiation through offering unique beef cuts and promotions will be essential for this segment to increase traffic. Expect continued growth in the fine-dining segment to support middle meats, as well as the premium Choice and higher cutout values.

U.S. beef demand from global consumers outpaced expectations in 2013. The indexed demand benefit was 7.5 percent larger than the previous year, and expectations are that global customers will continue to bid aggressively for U.S. beef in 2014. U.S. beef demand in international markets should improve 1 percent in 2014. Developed nations continue to rebuild slowly from the recession, but other countries will have the ability to bid aggressively for beef amid tighter global beef supplies.





Per Capita Consumption (lbs./person)	2013	2014	% Change
Per Capita Net Beef Consumption/Supply	56.3	54.0	-4%
Per Capita Net Pork Consumption/Supply	46.6	46.4	-0%
Per Capita Net Poultry Consumption/Supply	98.3	101.6	+3%
Per Capita Net Meat Consumption/Supply	201.1	202.0	+0%

BOXED BEEF DEMAND WEAKENS

Wholesale beef demand weakened 1.0 percent in 2013 as boxed beef prices increased 2.6 percent and per capita supplies declined 2.1 percent. Demand is expected to decline 3.1 points in 2014 due to demand pullback across the beef complex. However, reduced supplies will still lead to price increases. The Choice-Select spread averaged $11/cwt. in 2013, and it is expected to trade at similar levels in 2014. Winter lows could take the spread to near par on a weekly basis due to extra Choice supplies relative to Select compared to previous years, at least during the first half of 2014, but demand for Choice product – especially middle meats – remains strong.

THE BOTTOM LINE

- The forecast for consumer and wholesale beef demand is weaker in 2014, due mostly to expected weakness in consumer incomes and U.S. economic performance.
- The forecast for grocery and restaurant performance – as it relates to the beef complex – is steady at best.
- Prices will remain in an uptrend due mostly to tighter supplies, but boxed beef spreads should track similar to recent history.

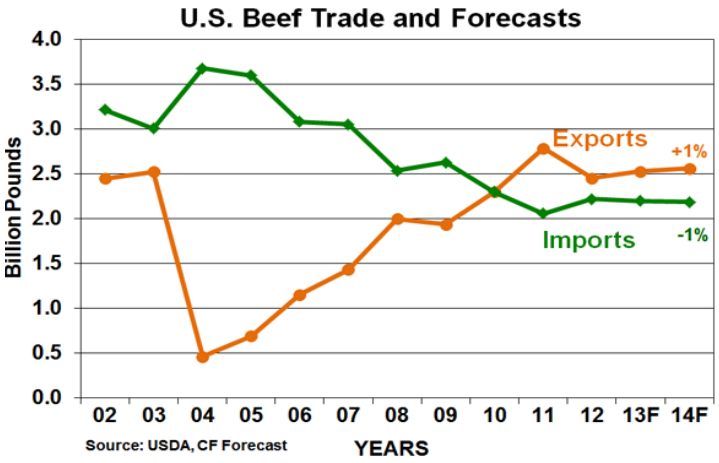
EMERGING TRENDS IN THE GLOBAL MARKET

2014 KEY TREND CHANGES

The global appeal of beef is expanding. Relatively slow global economic growth combined with a rising world population (a rate of more than 78 million people a year) is creating new global demand for livestock protein. The new demand is coming from a variety of markets that are interested in a variety of products. Global protein demand is even evident in less developed countries, such as Angola the No. 3 buyer of U.S. broilers and China the largest beef importing region on the planet.

Another trend has been the continued growth of Indian beef production and exports. India is solidly the No. 2 beef exporter globally and will expand supplies further in 2014. While India beef is exclusively from low-quality dairy buffalo, it fills a large, growing niche into the Greater China region, Malaysia and the Middle East.

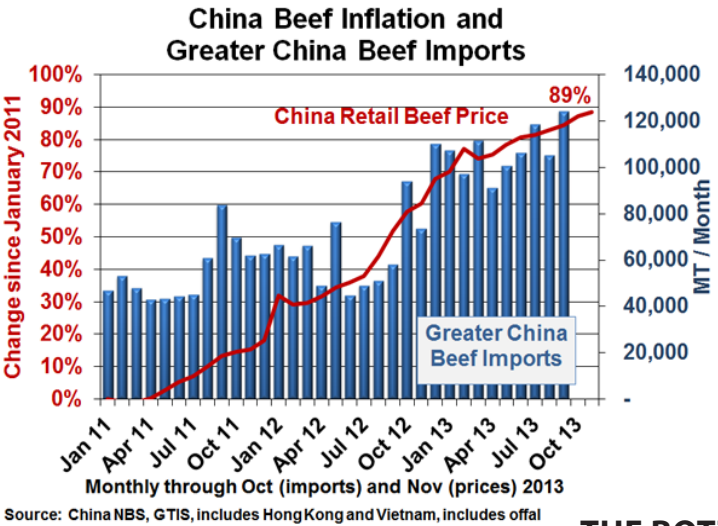
Brazil's cowherd expansion and growth in beef exports will continue to influence world markets. Brazil's heifer retention began in 2009, and production subsequently increased in 2012. A 3 percent annual growth rate is expected in both 2013 and 2014. Brazilian beef exports are forecast to increase 21 percent in 2013 and an additional 8 percent in 2014. Russia, Hong Kong, Venezuela combined purchase 52 percent of Brazil beef exports and remain the country's key growth markets.



International Beef and Cattle Trade	2013	2014	% Change
Total Net Beef Supply (bil. lbs)	25.35	24.47	-3%
Beef Imports (bil. lbs)	2.21	2.22	+0%
Beef Exports (bil. lbs)	2.53	2.60	+3%
Mexican Feeder Imports (mil. head)	0.98	0.95	-3%
Canadian Feeder Imports (mil. head)	0.265	0.325	+23%
Canadian Fed Cattle Imports (mil. head)	0.346	0.275	-21%

INFLUENCE OF GREATER CHINA REGION

China's ascension to the No. 1 beef importer started in late 2012 and grew throughout 2013. The full influence of China can best be seen through the combined beef imports into China, Hong Kong, and Vietnam. Beef and variety meat imports into the greater China region topped 124,000 metric tons in September 2013. The increase of beef into that region since 2011 is the equivalent of 250,000 cattle per month. Chinese retail beef inflation was 15 percent higher than a year ago in November 2013 – reaching a record high US$4.84/lb. The runaway inflation is quickly leading global beef suppliers to meet the region's needs. Beef shipments into the Greater China region are up 84 percent year-to-date, and the United States has an 8 percent market share. Part of the attraction to this region is China's middle class. It represents 300 million people today, and will grow to 640 million by 2020.



Chinese beef demand will build into the Chinese New Year (January 31, 2014) and slow some after that point. However, CattleFax expects Chinese prices to move higher in 2014. Stronger beef imports have become a trend in China that will grow. The additional demand from China will limit U.S. lean grinding beef imports and support domestic 90 percent lean beef trimming prices. The new demand will create an additional need for U.S. beef exports and support U.S. beef export prices. China's demand for variety meats will also support drop credit values.

OUTLOOK FOR U.S. BEEF

U.S. beef exports are forecast to grow by 1.4 percent in 2014 on smaller overall production. This is due to the rising demand and tighter global supplies. Growth will be driven primarily by Asian demand, likely Hong Kong. Japan has been a strong buyer in 2013, but much of that beef has been held as frozen inventory. Tighter global supplies and strong Chinese demand will open opportunities in secondary markets as well. The World Trade Organization is currently reviewing the Mandatory Country of Origin Labeling rule after the U.S. proposed changes to bring the rule into compliance. A negative ruling could lead to retaliatory duties on U.S. meat and poultry going to Canada and Mexico. The WTO response is expected in 2014.

U.S. beef imports are forecast up 1 percent as well, as grinders look to offset tighter domestic supplies due to reduced cow slaughter. These increased imports will come at higher prices.

THE BOTTOM LINE

- The influence of the Greater China region has been profound and will grow into 2014. Demand will pull available supplies from all key beef producing nations.
- India and Brazil will post solid production and export growth due to abundant supplies and larger cowherds. India's buffalo meat will be focused into the Greater China region, Southeast Asia and to a lesser extent the Middle East
- U.S. beef exports and imports will be nearly steady with about 1 percent growth in each category for 2014 as tighter U.S. and global supplies pressure trade.
- The highest bidders chasing a tighter global beef supply will be the countries with rising incomes. Even with declining production, U.S. beef producers should expect export growth.

Beta-agonists — Understanding the Differences

Elanco Optaflexx®

About beta-agonists in U.S. beef production

Cattle feeders incorporate beta-agonists into cattle diets to increase the amount of red meat yield from each animal while using fewer natural resources.[1] Beta-agonists are differentiated by their chemical structure, cell receptor site activity and the tissues they act upon.

In the U.S. beef industry today, there are two beta-agonists used in cattle diets:

1. Ractopamine, marketed by Elanco under the brand name Optaflexx®, is a beta-1 agonist
2. Zilpaterol, marketed by Merck under the brand name Zilmax®, is a beta-2 agonist

Optaflexx is an FDA-approved feed ingredient that increases weight gain in cattle helping to increase the amount of high-quality lean meat rather than fat. Ractopamine has been safely used in livestock production for more than a decade and is made by manufacturing ingredients that can be found in nature, including raspberry ketones.

Key points

- Beta-agonists are differentiated by their chemical structure, receptor site activity and the tissues they act upon
- The half-life of Optaflexx is approximately three-and-a-half times shorter than Zilmax, resulting in a zero-day withdrawal[2,3]
- Optaflexx has minimal impact on meat tenderness and quality[4]
- When Optaflexx is fed according to label directions, cattle fed diets containing Optaflexx are safe and produce safe, high-quality beef

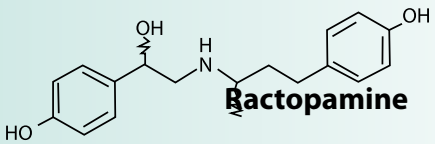
Chemical structure and half-life differences

Structural differences for Optaflexx and Zilmax result in differences in the rate of metabolism and metabolic inactivation. The slower the metabolic inactivation rate, or the longer the half-life, the longer the molecule remains in the tissue.

The rapid metabolic inactivation of Optaflexx leads to a half-life that is approximately three-and-a-half times shorter than Zilmax. This results in a zero-day withdrawal for Optaflexx compared to a three-day withdrawal for Zilmax.

Figure 1. Beta-agonist chemical structures

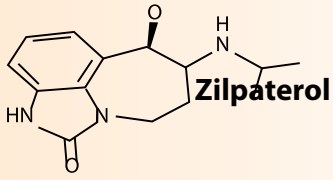
Optaflexx
Rapid metabolic inactivation



Ractopamine

Half-life
$T_{1/2}$ = 4 hours

Zilmax
Slow metabolic inactivation



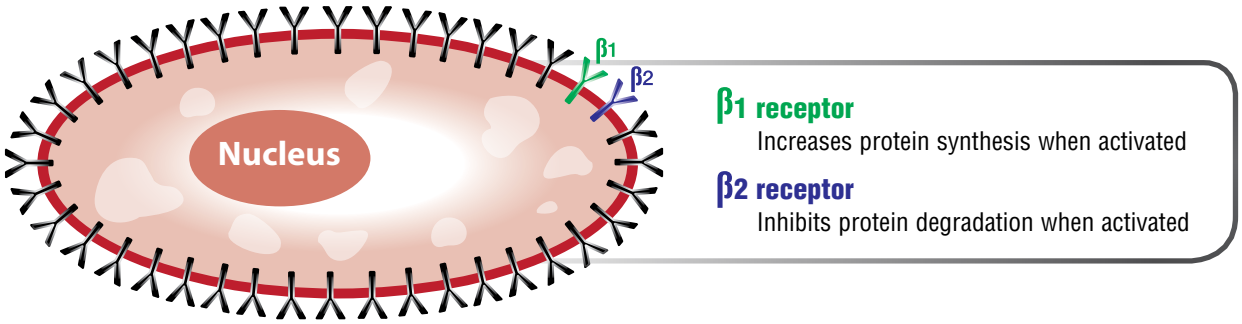
Zilpaterol

Half-life
$T_{1/2}$ = 15.3 hours

How beta-agonists work — mode of action

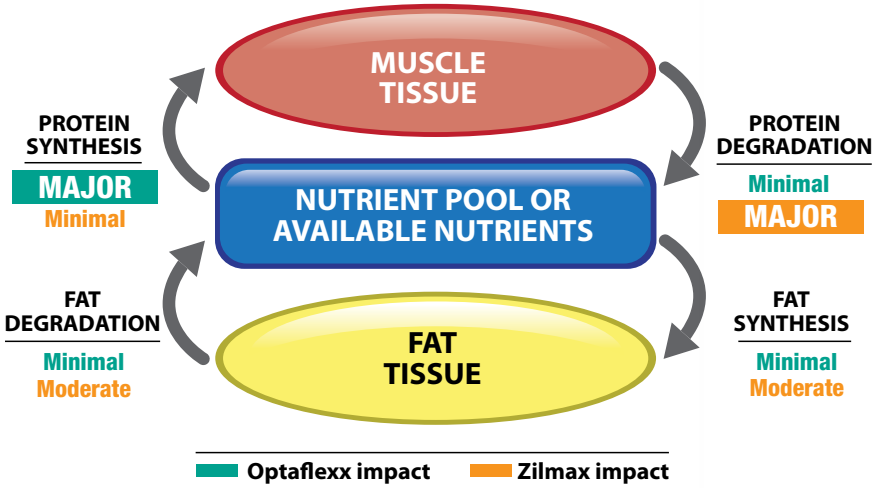
Beta-agonists such as Optaflexx and Zilmax affect beta-adrenergic receptors, which are protein molecules located in the cell membrane in both muscle and fat tissue. Beta receptors can be subdivided into categories based on the response of the activated receptor.

Figure 2. Beta-adrenergic receptor site activity within muscle cell



Through activation of the beta-receptors, Optaflexx and Zilmax direct energy nutrients from fat metabolism to protein metabolism. Optaflexx primarily activates the beta-1 receptor, increasing protein synthesis. Zilmax primarily activates the beta-2 receptor, inhibiting protein degradation.

Figure 3. Beta-agonists direct nutrients to make more muscle tissue

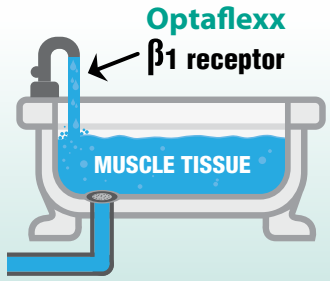


Because Optaflexx is a beta-1 agonist, it increases muscle tissue with minimal impact on the breakdown (degradation) of older muscle protein and little, if any, effect on fat breakdown or synthesis, resulting in minimal effects on the tenderness and quality of meat.[4]

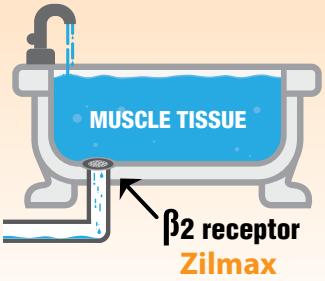
Zilmax, as a beta-2 agonist, primarily slows the rate of protein degradation with moderate effects on fat breakdown and synthesis, negatively affecting meat marbling score.[2,4] Zilmax's greater response in protein accretion is because of:

1. A higher percentage of beta-2 receptors present in beef cattle muscle
2. Its slow metabolic inactivation rate, which means Zilmax takes longer to metabolize and remains active in the tissue longer

Beta-agonists work like filling a bathtub



Optaflexx primarily increases protein synthesis, or "water flow."



Zilmax primarily reduces protein degradation, or "water draining."

Optaflexx is safe for cattle

Elanco is committed to the health, care and well-being of animals. Optaflexx has been rigorously tested for human, animal and environmental safety and is approved safe for use by the U.S. Food and Drug Administration (FDA) when used according to label directions. In addition to safety testing and monitoring, we continue to focus our efforts to ensure our customers are trained to use all Elanco products properly.

Our long-term commitment to helping cattle feeders produce lean, high-quality beef responsibly has never been greater. It starts by conducting research to document a product's safety for animals, people and the environment as part of the process to receive FDA approval. From this research, the FDA's Center for Veterinary Medicine's stringent review concluded:[3]

1. Optaflexx can safely be administered to cattle within the dose range of 70 to 430 mg/hd/d for the last 28 to 42 days on feed
2. No Optaflexx-related adverse events or indications of concern for animal safety occurred during the feedlot phase
3. No animal safety concerns were identified or observed during the livestock hauling or harvest of cattle

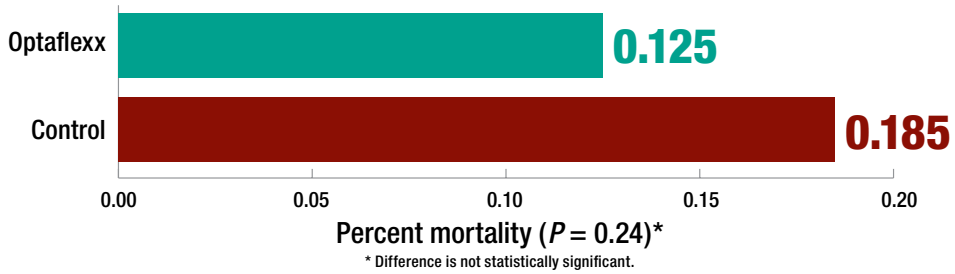
Elanco conducted studies to evaluate the meat and eating quality of beef from Optaflexx-fed cattle, becoming the first animal-health company to submit research to FDA as part of the product-review process. Although Optaflexx is supported by more than 25 years of research involving 140 studies to date, we continue to look for even better ways to optimize feeding cattle to deliver more high-quality lean meat.

Current feeding recommendation

Based on current economic conditions and supporting research, Elanco recommends feeding Optaflexx at 300 mg/hd/d for 28 to 35 days.

Figure 4. Optaflexx and animal mortality in steers[4]

In a review of 32 research trials, encompassing 26,483 hd, the mortality rate for steers fed Optaflexx is lower than the control group's.*



*Summary of 32 post-approval studies in steers fed Optaflexx from 8.2 to 24.6 g/ton (90% DM) for 28-42 days. Control number of head = 7,886; Optaflexx number of head = 15,045.

Beta-agonist differentiation summary

Figure 5. Comparative summary of Optaflexx and Zilmax

	Trait	Optaflexx	Zilmax
Active ingredient		Ractopamine	Zilpaterol
Mode of action	Classification	Beta-1	Beta-2
	Half-life	4 hours	15.3 hours
	Activity	Increases protein synthesis	Inhibits protein degradation
Ease of use	Withdrawal	0 days	3 days
	Dose (mg/hd/d)	70 - 430	60 - 90
	Approved dose (g/ton – 90% DM basis)	8.2 - 24.6	6.8
	Feeding duration (days)	28 - 42	20 - 40
Performance	Projected live weight gain in steers	22 lbs[4]	18 lbs[5]
	Projected hot carcass weight gain in steers	20 lbs[4]	30 lbs[5]
Meat & eating quality	Increase in ribeye area in steers (in^2)	0.47[4]	1.3[2]
	Reduction in marbling score in steers (pts)	9[4]	43[2]

Elanco Optaflexx®

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

Optaflexx: Complete feed
For increased rate of weight gain and improved feed efficiency: Feed 8.2 to 24.6 g/ton of ractopamine hydrochloride (90% DM basis) continuously in a complete feed to provide 70 to 430 mg/hd/d for the last 28 to 42 days on feed.
For increased rate of weight gain, improved feed efficiency and increased carcass leanness: Feed 9.8 to 24.6 g/ton of ractopamine hydrochloride (90% DM basis) continuously in a complete feed to provide 90 to 430 mg/hd/d for the last 28 to 42 days on feed.

Optaflexx: Top dress
For increased rate of weight gain and improved feed efficiency: Feed 70 to 400 mg/hd/d of ractopamine hydrochloride (90% DM basis) continuously in a minimum of 1.0 lb/hd/d top dress Type C medicated feed (maximum 800 g/ton ractopamine hydrochloride) during the last 28 to 42 days on feed.

Combination approvals with MGA® and Heifermax® are not allowed with topdress approval. Carcass leanness effects are not an approved indication for use when feeding Optaflexx by topdress feeding methods.

HeifermaX: Heifers fed in confinement for slaughter
For increased rate of weight gain, improved feed efficiency and suppression of estrus (heat): Feed 0.5 to 2.0 lb/hd/d of melengestrol acetate in a Type C medicated feed to provide 0.25 to 0.5 mg/hd/d.

[1]Capper, J. L., and D. J. Hayes. 2012. The environmental and economic impact of removing growth-enhancing technologies from U.S. beef production. J. Anim. Sci. 90:3527-3537.
[2]Zilmax (zilpaterol hydrochloride) Freedom of Information Summary (NADA 141-258).
[3]Optaflexx (ractopamine hydrochloride) Freedom of Information Summary (NADA 141-221).
[4]Elanco Study No. T4VUS120012.
[5]Zilmax: The Last Word in Performance. Merck Animal Health. Zilmax data is a summary of Intervet/Schering-Plough Animal Health 4 trial steer post-registration data set. Data on file.

0PTA 30481

Elanco

USBBUOPT00066

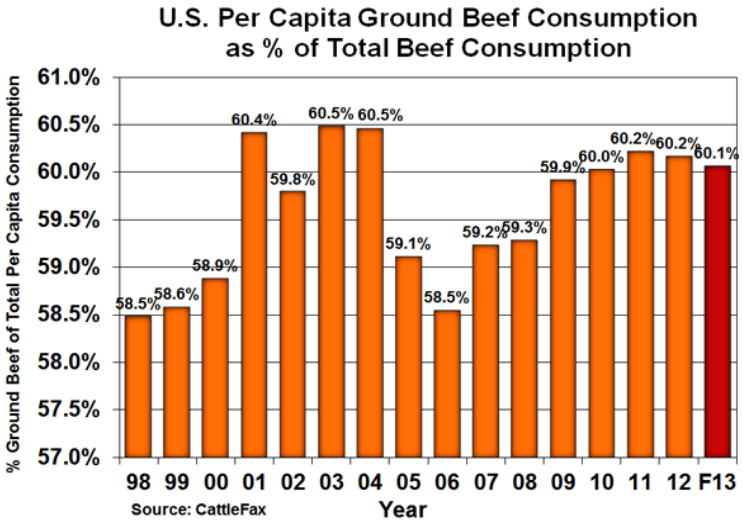
DOMESTIC MARKET INFLUENCES TO WATCH

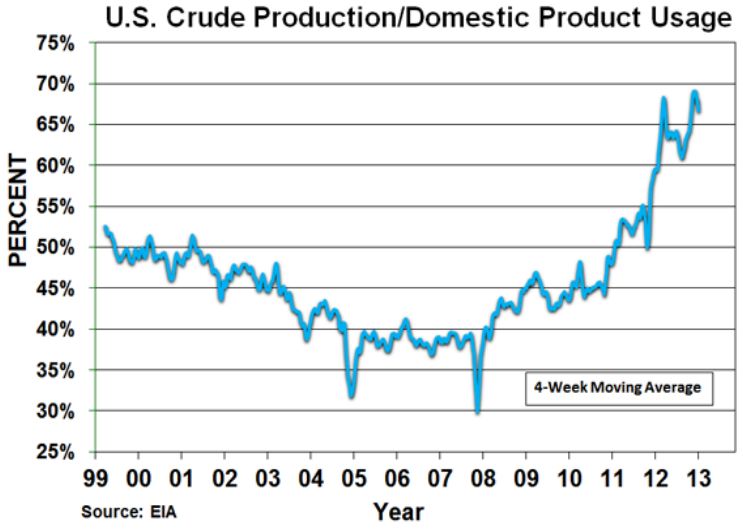
MEETING THE NEED FOR GRINDS

Ground beef is the beef industry's answer to the increasing consumer focus on convenience and value. Demand for course ground 81 percent lean beef reached a record high in 2011 – improving 34 percent since 1998. Since its peak coming out of the recession, wholesale ground beef demand has weakened 4.5 percent. There is concern in the coming year that ground beef demand will continue to struggle as prices rise to ration the tighter supply, and retailers focus on increasing margins through ground beef sales.

U.S. commercial cow and bull slaughter is the main source for lean beef trimmings, which generate the bulk of U.S. ground beef. That production is estimated to be down 600,000 head (8.5 percent) in 2014. Typically, imports from Australia and New Zealand offset declines in U.S. non-fed beef production, but CattleFax expects U.S. beef imports to be nearly steady in 2014 at 2.2 billion pounds due to tighter global beef production and increasing competition in the world market from China.

Per capita consumption of ground beef has declined in the United States more than 6 pounds per person since the early 2000s. This compares to a decline of more than 12 pounds in per capita consumption for all beef. As a result, ground beef continues to be about 60 percent of consumers total beef consumption since 1998. Based on the current CattleFax cattle slaughter and import forecasts, 2014 per capita ground beef consumption would drop to 31.4 pounds per person – equaling 58.3 percent of total beef consumption. Assuming the U.S. maintains ground beef consumption around 60 percent of the CattleFax forecast for per capita beef consumption, means an additional 11.5 pounds of ground beef would need to be generated per fed steer or heifer than is currently being produced from available trim. The possible reintroduction of lean-finely textured beef in 2014 could change these forecasts if consumers welcome the product back.





ENERGY OUTLOOK

The amount of energy the U.S. produces has changed significantly during the last several years. Since the recession, the amount of domestically produced consumption has increased from the recession low around 30 percent to a high near 70 percent in 2013. Increasing domestic production shields the United States – to a certain degree – from daily geo-political issues around the world that can often times influence oil producing regions in the Middle East, Venezuela and East Africa. Growing domestic supplies have come as demand has slowed with U.S. consumers driving more efficient automobiles for fewer miles. There is nothing to suggest these demand trends will not continue into 2014.

There has also been a domestic demand shift in recent years toward an increase in diesel consumption relative to gasoline. The shift has led to larger oil and gasoline supplies since three barrels of oil produce two barrels of gasoline and 1 barrel of diesel. Therefore, diesel demand along with the "crack margin" is incentivizing diesel production, and the net result is growing supplies of gasoline and oil. Production has been large enough in the last few years to limit diesel prices and pressure gasoline prices through the U.S. recovery from the recession.

Crude oil production in 2014 is likely to continue at the same rate as long as the margins remain positive. There are more fields open relative to production, and the expectation is that consumption will remain mostly steady – assuming the economy continues its gradual improvement. There are a few unknowns that could threaten consumer spending and energy demand, including another government shutdown during debt ceiling discussions and the additional influence of Obamacare in 2014. Prices should be seasonal with a stronger undertone in the first quarter and weaker price pattern into the summer for both gas and diesel prices. Fundamental data suggests the crude oil market will be lower in fall 2014 compared to this year on average.

THE BOTTOM LINE

- Extremely lean cuts from the round and chuck would be the first whole muscle cuts ground from fed cattle carcasses. If non-fed production tightens and imports remain steady, these cuts will be well supported in the spring and summer.
- Domestic production has increased – resulting in 70 percent of domestic consumption being produced in the United States. Gasoline and diesel prices should be seasonal in 2014 and prices on average are expected to be lower than 2013. Natural gas prices are expected to be seasonal with the market highs being influenced the most by winter weather.

FEED AND FORAGE: ADDITIONAL CORN SHIFTS MARKET

Several key changes are expected for the feed and forage markets in 2014. Spot corn futures prices have traded below $4.50/bu. in fourth quarter 2013 – marking the first time prices have traded below $4.50/bu. during the fourth quarter since 2009. Improved weather conditions in 2013, especially in the major beef cattle regions, boosted hay and forage supplies. Cheaper energy feeds will support beef, pork and poultry production. However, prices of protein feeds are expected to remain historically high through early 2014.

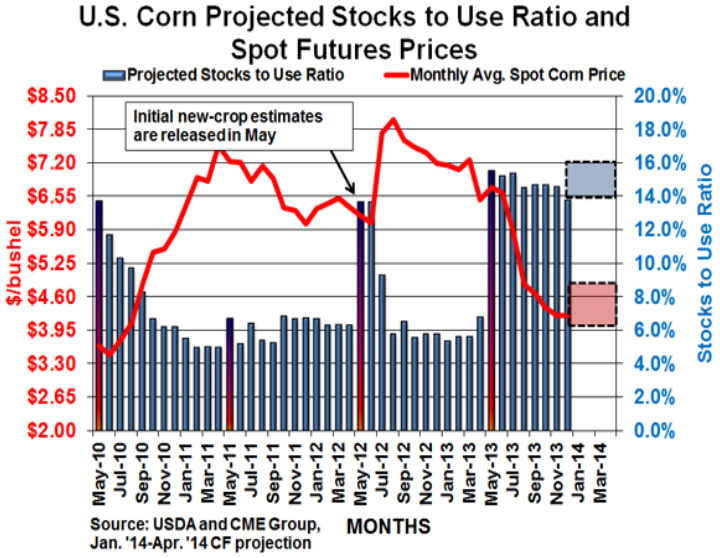
Spot corn futures prices have sustained a lower trend for months. However, since summer 2012, cash soybean meal prices, basis Iowa, have ranged from $400 to $560/ton, holding the value of feed protein at historically high levels between $0.45 and $0.65 per pound on a dry matter basis. Soybean and soybean meal prices are expected to remain elevated into spring 2014 when export demand shifts from tighter U.S. supplies to record-large South American supplies. The higher protein prices will likely remain supportive to high quality alfalfa hay prices and the price of distillers grains relative to corn during this period. Across many regions, the price of premium alfalfa has only declined $20 to $40/ton compared to year-ago levels. Additional declines are likely, but may not occur until the second half 2014. In 2013, hay production increased sharply compared to 2012, but another solid production year, coupled with cheaper protein prices is needed to provide additional price relief. The price per pound of protein in dry distillers grains is cheap relative to soybean meal and is expected to support stronger DDG export demand through first half 2014.

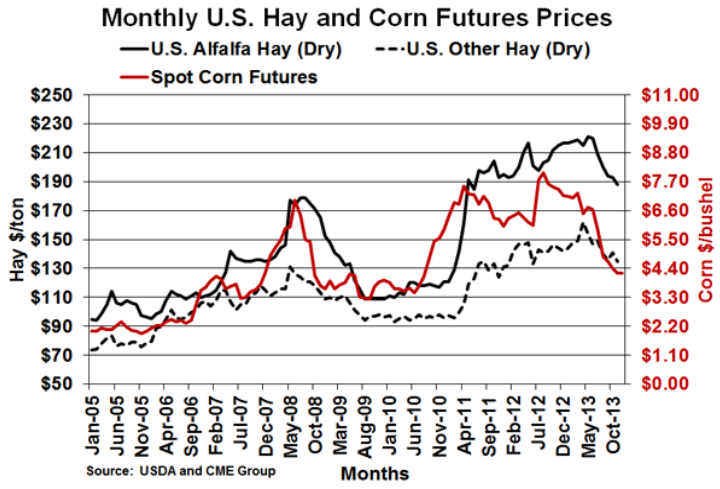
U.S. CORN 2013-2014 MARKETING YEAR

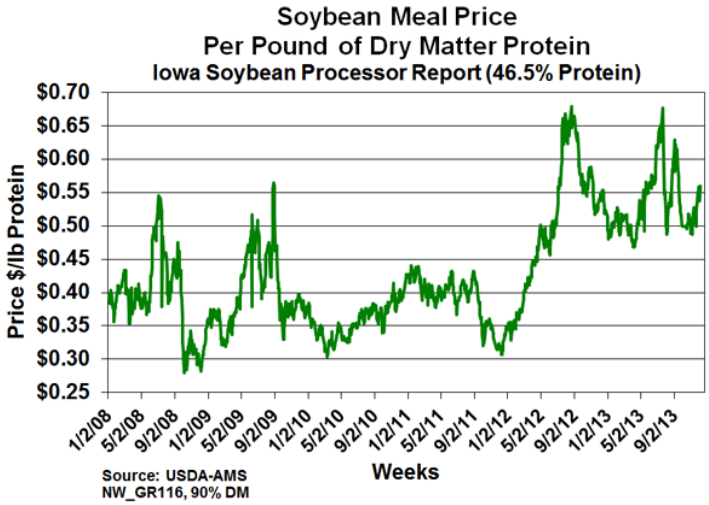
A record-large corn supply and significantly cheaper prices should support considerable usage increases for U.S. exports and feed/residual usage, while moderate increases are expected for corn used for ethanol, as well as food, seed and industrial usage. Projected stocks-to-use levels range from 14 to 16 percent through April 2014, much higher than the 5 to 7 percent range seen during the previous three market years.

U.S. CORN 2014-2015 MARKETING YEAR

With new crop soybean futures prices trading more than 2.5 times the price of new crop corn futures, U.S. soybean acreage is expected to increase relative to corn acreage in 2014. The profitability advantage that corn enjoyed based on new crop futures prices over the past two years has declined sharply. Despite a decline in corn acreage, an average yield consistent with the long-term trend line corn yield since 1975 at 159.1 bu./ac. would still result in corn production of approximately 13.6 billion bushels, and potentially boost stocks-to-use levels for the 2014-2015 market year to 16 to 17 percent.







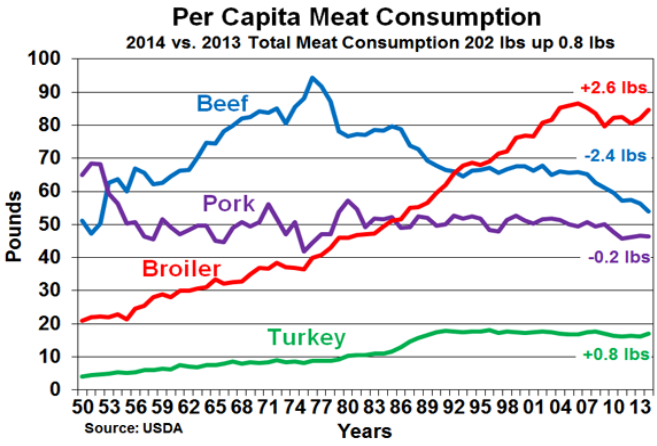
THE BOTTOM LINE

- Expect protein feeds to remain supported from late winter to spring before pressing lower – assuming South American soybean production meets current expectations.
- Lower feed and forage prices are expected to support livestock production over the next two years.
- U.S. corn stocks-to-use levels should be between 14 and 16 percent through April 2014 – supporting spot corn futures prices from $4.10 to $4.20/bu. and finding resistance from $4.75 to $4.90/bu.
- Corn basis levels are expected to strengthen relative to the long-term historical averages throughout early 2014.
- Stocks-to-use levels for 2014-2015 should drive spot corn futures prices down into the $3.60 to $4.10/bu. range during second half 2014.

COMPETING PROTEIN OUTLOOK

PORK SUPPLIES REMAIN MANAGEABLE

Pork production was down 0.2 percent in 2013. Despite the smaller production levels, per capita pork supplies were up 1 percent at 46.6 pounds due to a 6.5 percent decline in exports. Pork demand was up 5 percent at both the wholesale and retail level in 2013 resulting in a 9 percent increase in the pork cutout value. With the higher pork values and substantially lower feed grain costs, hog producers are profitable going into 2014. The effects of the porcine epidemic diarrhea virus may have the largest influence in determining how quickly the pork industry can expand. The 2014 pork production forecast is 1.5 percent higher than 2013, mainly due to an expectation for heavier carcass weights. Pork exports are projected to increase 4 percent – totaling 5.2 billion lbs. The result is a nearly steady per capita pork supply compared to 2013 at 46.6 pounds. Wholesale pork values are expected to be 2 to 3 percent stronger, and retail pork prices will likely improve 3 to 4 percent. The expectation for higher hog values and lower corn prices in 2014 should encourage modest hog industry expansion in 2014 and 2015.



Competing Meats (bil. pounds)	2013	2014	% Change
Commercial Pork Production	23.2	23.5	+1%
Pork Exports	5.0	5.3	+5%
Poultry Production	44.0	45.7	+4%
Poultry Exports	8.3	8.5	+3%

BROILER SUPPLIES INCREASE IN 2014

Significant feed cost reductions compared to fall 2012 has improved the financial position of the poultry industry, and expansion is expected as the industry transitions to next year. The 2014 forecast has supplies increasing 3.8 percent or 1.6 billion pounds in 2014. Expect annual exports to increase 9 percent to a record 7.8 billion pounds. Net per capita supplies should increase 3.2 percent – reaching 85.5 pounds for the year. Whole bird, breast and leg quarter prices are expected to come under pressure due to the increasing supplies. Another strong 2014 corn and soybean harvest could lead to continued poultry supply increases in 2015 as additional feed price reductions spur more production.

THE BOTTOM LINE

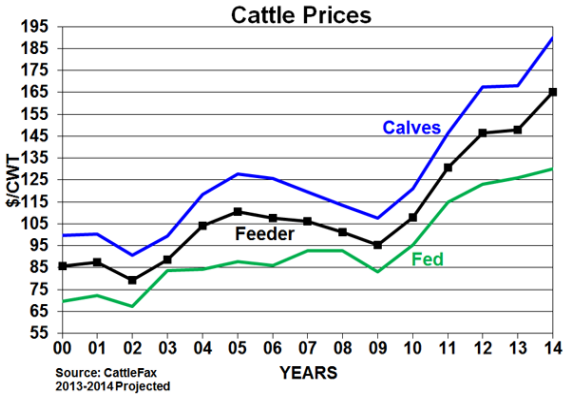
- Reduced production costs and increased profitability will result in increased pork and broiler production in 2014.
- Even net pork supplies coupled with continued gains in demand will support higher live hog, wholesale and retail pork values.
- Increasing poultry supplies will pressure poultry prices relative to 2013 prices, giving retailers and foodservice users a cheaper protein alternative.

PRICE OUTLOOK 2014

ALL FRESH RETAIL: $5.12/lb., +3.6% — Expect another year of record-high retail prices. Competing protein production will increase, but the forecast for beef production is significantly lower compared to 2013.

COMPOSITE CUTOUT: $202/CWT., +4.7% — A sluggish domestic economy will force wholesale demand 2 to 3 percent lower. Steady-to-cheaper competing meats will be price- limiting for beef. Expect the cutout to increase $7/cwt. with a smaller beef supply.

FED CATTLE: $130/CWT., +3.2% — Fed cattle prices are expected to increase for a fifth-consecutive year – increasing more than 50 percent since 1990. Smaller per capita supplies and exports have been driving forces. The normal price range suggests 2014 lows near $120 and highs near $140/cwt.



750-LB. STEERS: $165/CWT., +11.7% — Lower feed prices will bolster feeder cattle values in 2014. If realized, 750-pound steer prices will have increased $520/head since 2009. Profitability in this segment will be tested the next several years with lower feed values allowing feedyards to compete with stocker operators on purchases. Tighter supplies, excess feeding capacity and lower feed values will support prices.

550-LB. STEERS: $190/CWT., +13.8% — Declining cowherd numbers and tighter calf supplies will allow cow-calf producers to maintain market leverage. Record-high fed and feeder cattle prices will fuel record-high calf values. Replacement quality heifers will see prices above steer mates. Steer calves are expected to sell above $210/cwt. during peak grass demand in early spring. Seasonal lows are projected in the fall.

CULL COWS: $90/CWT., +13.9% — Improving pasture and forage availability has limited cull cow supplies. Expect this to continue due to the younger U.S. cowherd. Salvage values on cull cows will be record high again in 2014 – supporting the cost to improve herd genetics.

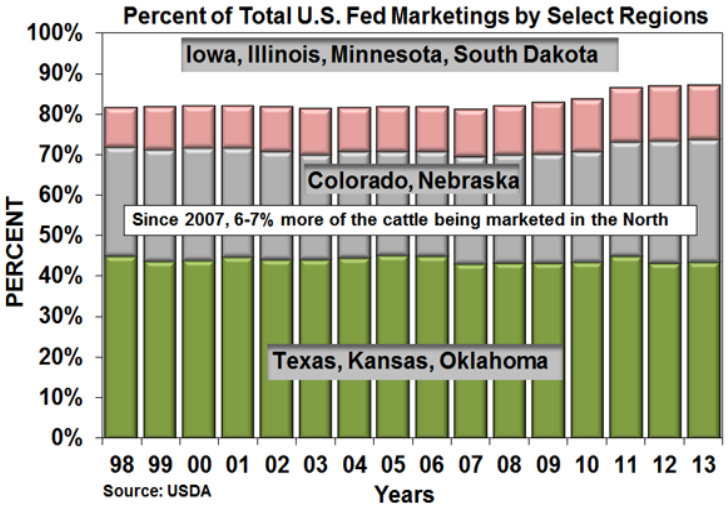
BRED FEMALES: $1,550/HEAD, +10.7% — Mother Nature in conjunction with record-high calf values and profits will encourage herd expansion. Average values will be record high in 2014. Demand will remain strong, provided moisture conditions are adequate. Expect female values to increase at least $150/head.

CORN: $4.20/BU., -27.7%—Spot corn futures should decline to levels not realized since 2010–averaging near $4.20/bu. in 2014 based on stocks-to-use levels near 14 to 17 percent. Lower prices will likely reduce corn acres in favor of soybeans and wheat.

STRUCTURAL CHALLENGES IN A GLOBAL MARKET

The U.S. meat and poultry industries are right in the middle of what is becoming an increasingly global market. The United States is in a position to meet the global demands for more protein in the years ahead, with the best infrastructure and most efficient production system in the world. At the same time, the U.S. beef industry continues to evolve. More competitive feed costs shifted additional cattle feeding to Nebraska, South Dakota and Iowa in recent years relative to the Southern Plains. The market share of fed marketings by region indicates the North has seen its share of fed cattle marketings increase 6 to 7 percent over the past eight years.

As regional shifts in cattle feeding have occurred, total feeding capacity in general is declining with several feedyards closing in 2013 and more long-fed Holsteins occupying capacity for the equivalent of two turns of typical beef cattle. The one-time feedyard capacity equivalent of 350,000 head has been closed in 2013, and this trend will continue – especially with the risk of another fed packing plant closing sometime in the next two years, with continued fed slaughter declines forecast through that period.



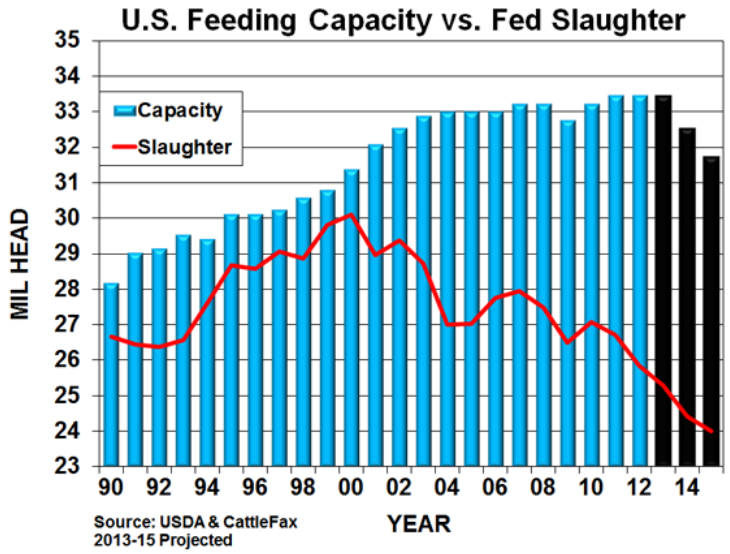
2020 BEEF INDUSTRY VISION

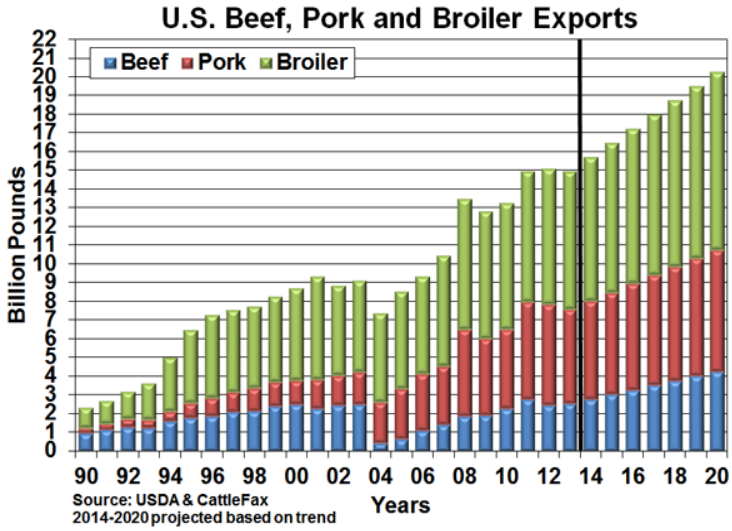
While the U.S. beef industry continues to face many structural challenges, the rest of the world is seeing an explosion in demand for meat and poultry due to growing incomes and economies. Specifically, China is leading the charge in global protein demand growth. With a middle class population expected to grow from 300 million to 640 million people in the next seven years, China's expected middle class growth is as big as the entire population of the United States. While pork dominates China meat imports today, beef imports have increased from less than 5 percent of China's total meat and poultry imports to more than 25 percent in just the last two years. The United States is the largest global meat and poultry exporter with 60 percent of beef exports going to developing or emerging economies compared to just 25 percent in the early 1990s.

Based on recent trends, U.S. beef exports are on pace to reach more than 4 billion pounds by 2020 – compared to 2.5 billion in 2013. What is the significance of this? The value of U.S. beef exports plus beef variety meats was worth nearly $8 billion in 2013. Based on the potential increase in export tonnage by 2020, beef and beef variety meat exports could be worth more than $13 billion. That is roughly $200 per head more than today based on fed slaughter at 26 million head.

U.S. pork and poultry exports also have the potential to share in export growth if the current trends continue. Pork exports could reach nearly 6.5 billion pounds by 2020 compared to 5 billion pounds in 2013, and broiler exports could increase from 7.4 billion pounds to 9.5 billion pounds by 2020. Furthermore, the additional beef tonnage needed to reach more than 4 billion pounds of beef exports by 2020 would require an additional 2 to 3 million cows be added to the U.S. beef cowherd by 2020.

Assuming these export trends continue – and U.S. consumption is flat – beef exports as a percent of production will be 18 percent by 2020, compared to 10 percent in 2013. Pork and broiler exports would represent more than 25 percent of U.S. production by 2020. Trade has become an important piece of the puzzle in putting added value back into producer's pockets and it's only going to become even more important in the years ahead.





Cattle Inventory (mil. head)	2013	2014	% Change
Total Cattle	89.3	87.5	-2%
Beef Cows	29.3	29.0	-1%
Dairy Cows	9.2	9.2	-0%
Total Cows	38.5	38.2	-1%
Calf Crop	33.8	33.6	-1%
Feeder & Calf Supply Outside Feedlots	25.5	25.0	-2%