



CATTLEMAN'S CORNER



Division of Agriculture Sciences and Natural Resources * Oklahoma State University

Oct/Nov 2018

Beef consumption and growing beef imports in China

Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

Total beef consumption in China in 2018 is estimated at 8.5 million metric tons, second only to the U.S., according to the USDA Foreign Agricultural Service. On a per capita basis, this is just over 6 kilograms (carcass basis) or about 9.4 pounds per person (retail basis). This level is 16 percent of projected 2018 U.S. retail beef consumption of 57.7 pounds per capita. In China, beef consumption is about 11 percent of total meat consumption behind poultry (15 percent) and pork, which is hugely popular and represents 74 percent of meat consumption. These values do not include fish and seafood, which are very popular in China.

Beef consumption in China is low but rising. Despite being a major beef producing and consuming country for many years, China never participated much in global beef markets until recently. Since 2014, beef consumption has outstripped domestic production and Chinese beef imports have risen sharply. By 2016, China exceeded Japan as the number two beef importing country behind the U.S. Chinese beef imports in 2018 are projected to be just 13 percent smaller than U.S. beef imports. At the current pace, China could be the largest beef importing country in the world in another year or two. Over 95 percent of Chinese beef imports are sourced from Brazil, Uruguay, Australia, New Zealand and Argentina. In Shanghai I saw large billboards advertising Argentine beef. U.S. beef exports to China resumed in 2017 after a nearly 14 year absence and are developing very slowly. In the past 12 months, exports to China have amounted to 0.6 percent of total U.S. beef exports.

What is the future potential for U.S. beef in China? Beyond the additional obstacles due to the current trade war, building markets for U.S. beef in China will face several challenges. Price is one of those challenges. Beef is expensive in China relative to other meats, even more so than in the U.S. Although growing beef demand in China is the result of a rapidly growing urban middle-class population, beef remains expensive for many consumers. Imported beef from the U.S. is especially expensive.

The bigger challenge for U.S. beef is the role of beef in Chinese cuisine. China is not a land of steakhouses, although western-style steak restaurants are growing in popularity and represent the most immediate demand for U.S. beef. This specialized restaurant and business hotel demand is small but expanding. In an example of this, I met with staff of the U.S. Meat Export Federation and a beef importer at a new, upscale steak restaurant in Shanghai which features both U.S. and Australian beef. We discussed the opportunities and challenges for U.S. beef in China. The reality is that, for the majority of Chinese consumers, beef, especially muscle cuts, are only infrequently a part of the diet.

Chinese cuisine is characterized by hot pot, stir fry dishes and Chinese barbeque that use small amounts of beef in pieces or thinly sliced rather than large cuts of beef. Beef offals are very popular and more affordable for many consumers. For example, Chinese barbeque is not large quantities of brisket or other beef cuts but is various meat products prepared on skewers. The beef barbeque that I ate in China was beef tendons rather than muscle meat. Beef entrees are typically a minor part of most menus. One exception to this was in the Muslim sections of Xian where beef is popular in place of pork. There I enjoyed beef in sandwiches, soups and dried as a type of jerky.

In all markets, meat quality is defined by the preferences of the consumer and the way the product is used. Highly marbled U.S. beef does not necessarily represent additional quality in many Chinese dishes. This makes U.S. fed beef even more expensive relative to domestic Chinese beef and most other imported beef. This is not to say that there isn't potential for U.S. beef in China. However, it does illustrate that accessing the larger Chinese market is not simply a matter of shipping U.S. steaks to China. U.S. Meat Export Federation staff in China are pursuing an

innovative and dedicated effort to build market share for U.S. beef. There is considerable potential for U.S. beef in China but it will take time, patience and persistence.

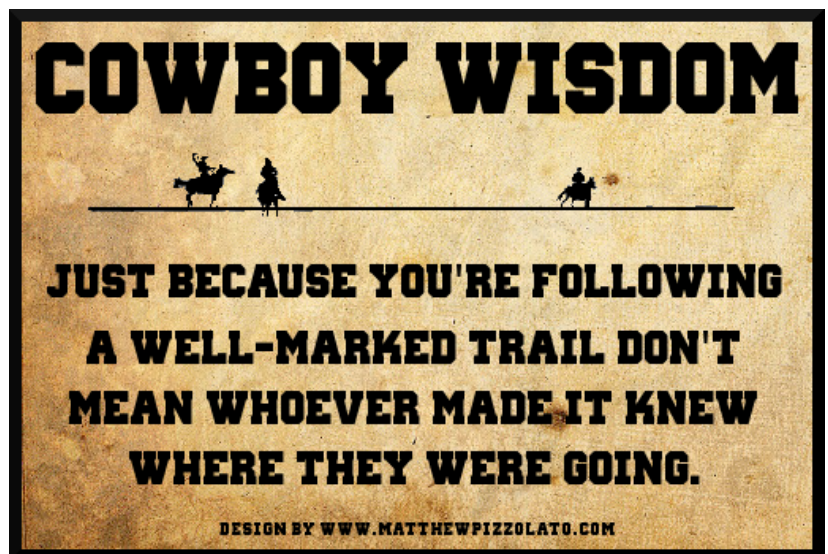
"Preg" check and cull "open" replacement heifers

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

Many Oklahoma ranchers choose to breed the replacement heifers about a month ahead of the mature cows in the herd. In addition, they like to use a shortened 30 to 60-day breeding season for the replacement heifers. The next logical step is to determine which of these heifers failed to conceive in their first breeding season. This is more important today than ever before.

The bulls were removed from the replacement heifers about 60 days ago, therefore, this would be an ideal time to call and make arrangements with your local large animal veterinarian to have those heifers evaluated for pregnancy. After two months of gestation, experienced palpators should have no difficulty identifying which heifers are pregnant and which heifers are not pregnant (open). Those heifers that are determined to be "open" after this breeding season, should be strong candidates for culling. Culling these heifers immediately after pregnancy checking serves three very economically valuable purposes.

- 1) Identifying and culling open heifers early will **remove sub-fertile females from the herd.** Lifetime cow studies from Montana indicated that properly developed heifers that were exposed to fertile bulls, but DID NOT become pregnant were often sub-fertile compared to the heifers that did conceive. In fact, when the heifers that failed to breed in the first breeding season were followed throughout their lifetimes, they averaged a 55% yearly calf crop. Despite the fact that reproduction is not a highly heritable trait, it also makes sense to remove this genetic material from the herd so as to not proliferate females that are difficult to get bred.
- 2) Culling open heifers early **will reduce summer forage and winter costs.** If the rancher waits until next spring to find out which heifers do not calve, the pasture use and winter feed expense will still be lost and there will be no calf to eventually help pay the bills. This is money that can better be spent in properly feeding cows that are pregnant and will be producing a salable product the following fall.
- 3) Identifying the open heifers shortly after (60 days) the breeding season is over will **allow for marketing the heifers while still young** enough to go to a feedlot and be fed for the choice beef market. "B" maturity carcasses (those estimated to be 30 months of age or older) are very unlikely to be graded Choice and cannot be graded Select. In addition, they may not be eligible for some international beef markets. As a result, the heifers that are close to two years of age will suffer a price discount. If we wait until next spring to identify which two year-olds did not get bred, then we will be culling a female that will be marketed at a noticeable discount compared to the price/pound that she would have brought this summer as a much younger



animal. Last week non-pregnant 866 pound heifers brought \$1.28/lb. or \$1108.48 per head in Oklahoma City. Using a very optimistic guess for next spring, a two-year old 1000 pound open cow may bring \$0.90/lb. or \$900 per head. This calculates to a \$208 per head loss plus the expense of keeping her through the winter. In reality, the loss in value probably will be even greater.

Certainly the percentage of open heifers will vary from ranch to ranch. Do not be overly concerned, if after a good heifer development program and adequate breeding season, that you find that 10% of the heifers still are not bred. Resist the temptation to keep these open heifers and “roll them over” to a fall-calving herd. These are the very heifers that you want to identify early and remove from the herd. It just makes good economic business sense to identify and cull non-pregnant replacement heifers as soon as possible.

Fall feeder markets and stocker prospects

Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

Oklahoma feeder cattle prices averaged nearly four percent above one year ago in the first week of August with calf prices increasing from the previous week. Feeder prices are holding strong despite continued growth in feeder cattle supplies. Combined Oklahoma feeder auction totals have averaged 13 percent higher year over year since early July. National data for feeder and stocker cattle sales in the month of July were seven percent over last year. The July Cattle report estimated the 2018 calf crop nearly two percent higher than 2017. Estimated feeder supplies on July 1 were 0.5 percent higher than one year ago. All indications are that fall feeder markets will feature a calf run larger than last year and abundant feeder supplies.

Prices for feeder cattle typically decline seasonally for all weight classes after August. Calf and stockers up to 600 pounds (which peak in March) typically have a seasonal low price in October while heavier feeder cattle decline from an August peak lower through the end of the year. On average, feeder cattle prices decline four to five percent from August to lows in the fourth quarter.

Will feeder markets follow seasonal patterns this fall? With the ample supplies described above, there is plenty of supply pressure to expect seasonal price declines or more this fall. However, feeder cattle demand will be the key. Stocker demand will be the key to calf prices and that will largely be determined by forage conditions. In the Southern Plains, stocker cattle demand for winter wheat grazing plays a big role in seasonal demand to offset large seasonal supplies of calves in the fall. The current Drought Monitor shows widespread moderate to extreme drought conditions in western Oklahoma. However, an unseasonal cool, wet weather pattern is in place in Oklahoma with more rain expected in coming days. In general, moisture conditions are quite variable across most of the wheat belt in Oklahoma. Cooler than average temperatures is resulting in cooler soil temperatures which may support early wheat planting after Labor Day.

Forage conditions will determine the ability of stocker producers to demand stocker cattle but it is economic conditions that will determine the willingness of producers to purchase stockers for winter grazing. Current markets may suggest opportunities for stockers or backgrounding this fall. For example, combined Oklahoma feeder auction prices in the first week of August for 465 pound steers (Medium/Large Number 1) were \$171.59/cwt. and price of 774 pound steers at \$150.65/cwt. This results in a value of gain of \$1.19/pound on 309 pounds of gain, calculated as $[(7.74 \times 150.65 - 4.65 \times 171.59)/(774-465)]$. Value of gain for added feeder cattle weight is largely a reflection of feedlot demand for feeder cattle of various weights. A value of gain at this level indicates relatively less feedlot demand for lightweight feeders and is an economic signal for increased stocker production. If feeder cattle prices maintain a similar price relationship into the fall and forage conditions are good, fall feeder markets may follow seasonal price patterns rather closely.

When do we intervene and assist a cow or heifer in labor?

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

Before the fall calving season commences, now is the time to put together and post a protocol for family members and hired employees to follow when they find a cow or heifer starting in the process of calving. An issue facing the rancher at calving time, is the amount of time heifers or cows are allowed to be in labor before assistance is given. Formerly, traditional text books, fact sheets and magazine articles stated that “Stage II” of labor lasted from 2 to 4 hours. “Stage II” is defined as that portion of the birthing process from the first appearance of the water bag until the baby calf is delivered. Research data from Oklahoma State University and the USDA experiment station at Miles City, Montana clearly show that Stage II is much shorter, lasting approximately 60 minutes in first calf heifers, and 30 minutes or less in mature cows.

Table 1. Research Results of Length of Stage II of Parturition

Source	No. of Animals	Length of Stage II
USDA (Doornbos, et al.1984. JAS:59:1)	24 mature cows	22.5 min.
USDA (Doornbos, et al.1984. JAS:59:1)	32 first calf heifers	54.1 min.
Oklahoma State Univ. (Putnam, et al. 1985. Therio:24:385)	32 first calf heifers	55.0 min.

In these studies, heifers that were in stage II of labor much more than one hour or cows that were in stage II much more than 30 minutes definitely needed assistance. Research information also shows that calves from prolonged deliveries are weaker and more disease prone, even if born alive. **In addition, cows or heifers with prolonged deliveries return to heat later and are less likely to be bred for the next calf crop.** Consequently a good rule of thumb: “If the heifer is not making significant progress 1 hour after the water bag or feet appear, examine the heifer to see if you can provide assistance. Mature cows should be watched for only 30 minutes before a rectal examine is conducted.” **Make certain the cervix is completely dilated before pulling on the chains. If you cannot safely deliver the calf yourself at this time, call your local large animal veterinarian immediately.**

Most ranches develop heifers fully, and use calving ease bulls to prevent calving difficulties. However, a few difficult births are going to occur each calving season. Giving assistance in a timely manner will save a few more calves, and result in healthier more productive two-year old cows to rebreed next year.

Why is 45 day weaning important to feeder calf health??

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

The “Value-Added” calf sales will begin in October. Therefore some of the required weaning dates are only a few days away. Most of the “Value-Added” calf sales require that the calves are weaned at least 45 days prior to sale date. Some cow calf producers may wonder why the post-weaning period needs to be so lengthy.

Data from Iowa from over a nine year period in a couple of their feedout tests compared the health status of calves weaned less than 30 days to calves weaned longer than 30 days. Data from over 2000 calves were summarized. Calves that had been sent to a feedlot at a time less than 30 days had a higher incidence of bovine respiratory disease (28%) compared to calves weaned longer than 30 days (13%). The percentage of calves that required 3 or more treatments also was significantly different (6% versus 1%) in favor of calves that had been

weaned more than 30 days. In fact the calves weaned less than 30 days were not different in health attributes than calves that were weaned on the way to the feedlot.

A summary of this lengthy study can be found on line at <http://www.extension.iastate.edu/Pages/ansci/beefreports/asl-1648.pdf>. Vac-45 calves apparently have a real advantage in terms of health compared to calves weaned for less than a month or those weaned on the way to the livestock market for sale date. Certainly part of the “value” in value-added calves can be attributed to properly applied vaccinations. However, there is little doubt that a portion of the improved health is due to the length of time between weaning and the movement of calves to the next owner.

A listing of the 2018-2019 Oklahoma Quality Beef Network (OQBN) value added calf sales can be found on the [OQBN website](http://oqbn.okstate.edu). The appropriate weaning dates and contact information for verification and sale information can be found at that address as well. The weaning dates are coming up very soon for the October sales. Therefore producers with calves that meet those guidelines should make the appropriate contacts soon. The OQBN website is <http://oqbn.okstate.edu>.

Plan now for OQBN pre-conditioned feeder sales

Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

Oklahoma Quality Beef Network (OQBN) sales provide an opportunity for cattle producers to add value to 2018 calves. Weaning dates are fast approaching for fall sales. Below is a summary of 2018/2019 OQBN sales, locations and corresponding weaning dates.

<u>Sale Date</u>	<u>Location</u>	<u>Weaning Date</u>
Oct. 25	Woodward	Sep. 10
Nov. 6	OKC West, El Reno	Sep. 22
Nov. 7	Cherokee	Sep. 23
Nov. 13	McAlester	Sep. 29
Nov. 17	Blackwell	Oct. 3
Nov. 29	Woodward	Oct. 15
Dec. 4	OKC West, El Reno	Oct. 20
Feb. 19	McAlester	Jan. 5
Apr. 16	McAlester	Mar. 2
Jun. 11	McAlester	Apr. 27



For more information on OQBN sales; vac-45 protocol; enrollment and certification process and forms; and sale representatives, visit <http://oqbn.okstate.edu/>.

Early weaning provides boost for young, thin cows

Glenn Selk, OSU Extension Cattle Reproduction Specialist

The common tradition for weaning spring-born calves is to wait until late October and even early November. Most mature cows that have been feeding on adequate summer forages will be in very good body condition, despite the pressure of nursing a rapidly growing calf. These cows will usually be in a body condition score of about 5 to 6 at weaning time each fall. However, very often two-year-old cows and even some three-year-old cows will be in marginal body condition at the end of summer. They have a nutrient requirement for continued growth and in the case of the two-year-old, they are replacing baby teeth with adult teeth and are not as effective at harvesting forage. Therefore many of these young cows go into the fall season in a body condition score of 4 to 5 or less.

If the rancher chooses to wait until late October to wean the calves from these marginal young cows, there is very little time between weaning and the first killing frost. This is a time when a young cow could recover considerable body condition, if she has access to a plentiful supply of late summer, warm season grass. Without the nutrient drain of producing and delivering milk, she can use this pre-frost period to great advantage and replenish her own body stores.

South Dakota State examined this scenario (using mature cows) by comparing the effect of weaning date on performance of the beef cows. They weaned half of the cows at the time of the first real cool spell (September 14). The other half of the cows had their calves weaned at a traditional time (October 23). The scientists then monitored body condition and rebreeding performance of the cows. We should note that this study included two different nutritional levels: a low group to mimic an early winter or a dry summer; a moderate group to mimic more ideal summer and early winter seasons. Only the data for those cows exposed to the low nutritional group are presented here. They more nearly reflect what may happen for 2 and 3 year olds than will the moderately fed mature cows.

Table 1. South Dakota study of earlier weaning on mature cows (source: Pruitt and Momont; 1994 South Dakota Beef Report)

Weaning time	September 14	October 23
December body condition	+.5	-----
% cycling 1st 21 days of breeding	83	74
% pregnant to 21 day AI	70	35
Average conception date	June 26	July 3

This data indicates that the 40 days earlier weaning allow the cows to regain 1/2 of a body condition score going into winter. More of the early weaned cows were cycling at the start of the breeding season, conceived early in the breeding season and should wean heavier older calves the following year. In addition a small amount of high protein supplement (i.e. cottonseed meal or soybean meal) will enhance the cow's ability to utilize the declining quality of the late summer forage. Therefore this protein supplement can add more body condition to the young cows before frost arrives. This combination of management techniques should be a cost effective way to increase re-breeding rates of young spring calving cows.

The data from the cows that were in the “moderate” group indicate that middle-aged (4 to 7 years of age) in excellent body condition in the fall did not significantly benefit from the earlier weaning.

Feedlots place more and lighter cattle

Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

The latest Cattle on Feed report showed a September 1 feedlot inventory of 11.125 million head, a record for the month since the current data series began in 1996. The September 1 inventory was 105.9 percent of one year ago. A twelve month moving average of monthly feedlot inventories shows that, over the last year, feedlots have had the

largest average feedlot total since 2007. August marketings were even with year earlier levels, and equal to pre-report estimates.

August placements were larger than average pre-report estimates at 107.4 percent of last year. However, some analysts anticipated a placement total this large. Increased August placements largely consisted of cattle under 700 pounds, with the under 600 pound category up 19.4 percent year over year and cattle placed weighing 600-700 pounds were up 17.5 percent compared to last year. In fact, lightweight placements have dominated total feedlot placements since May. In the last four months, placements of cattle under 700 pounds has been up 13.2 percent year over year, while placements weighing over 700 pounds were down 1.0 percent year over year. Lightweight feedlot placements likely include lighter weight steer placements as well as continued high proportions of heifers in the feedlot total. Heifers are typically placed 50-100 pounds lighter in weight compared to steers. Lightweight placements since May will result in lighter and later fed marketings and may contribute to relatively tighter fed cattle supplies for the remainder of the year.

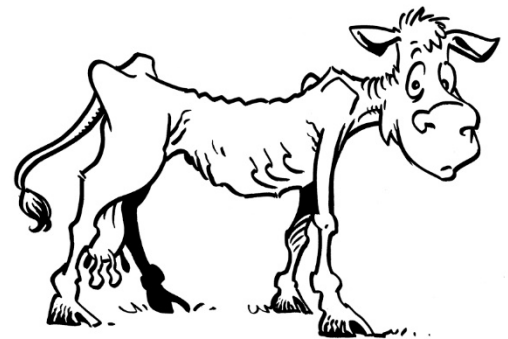
Total cattle slaughter is up 3.2 percent for the year to date, led by aggressive female slaughter. Heifer slaughter is up 8.3 percent year over year for the year to date. However, heifer slaughter is expected to show much smaller year over year increases in the fourth quarter, thereby moderating the annual increase. Beef cow slaughter is 11.4 percent larger year over year so far this year. Dairy cow slaughter continues to inch higher and is up 4.5 percent so far this year. Steer slaughter continues below year ago levels and is down 0.8 percent year over year for the year to date. Steer slaughter will likely increase some relative to last year and result in an annual total slightly larger than last year.

In the most recent weekly slaughter data, steer carcass weight was 896 pounds, equal to one year ago while heifer carcasses were 3.0 pounds heavier year over year at 819 pounds and cow carcass weights were 639 pounds, 4.0 pounds lighter than the same time last year. For the year to date, steer carcass weights are averaging 4.8 pounds higher year over year; heifers are 8.2 pounds heavier and cow carcasses are 5.4 pounds heavier than last year. Beef production is on track to reach a record level of 27.1 billion pounds in 2018, up 3.6 percent year over year. For the year to date, beef production is up 3.0 percent year over year but is expected to be about four percent larger in the fourth quarter compared to last year.

Cow age and cow productivity (When is she too old?)

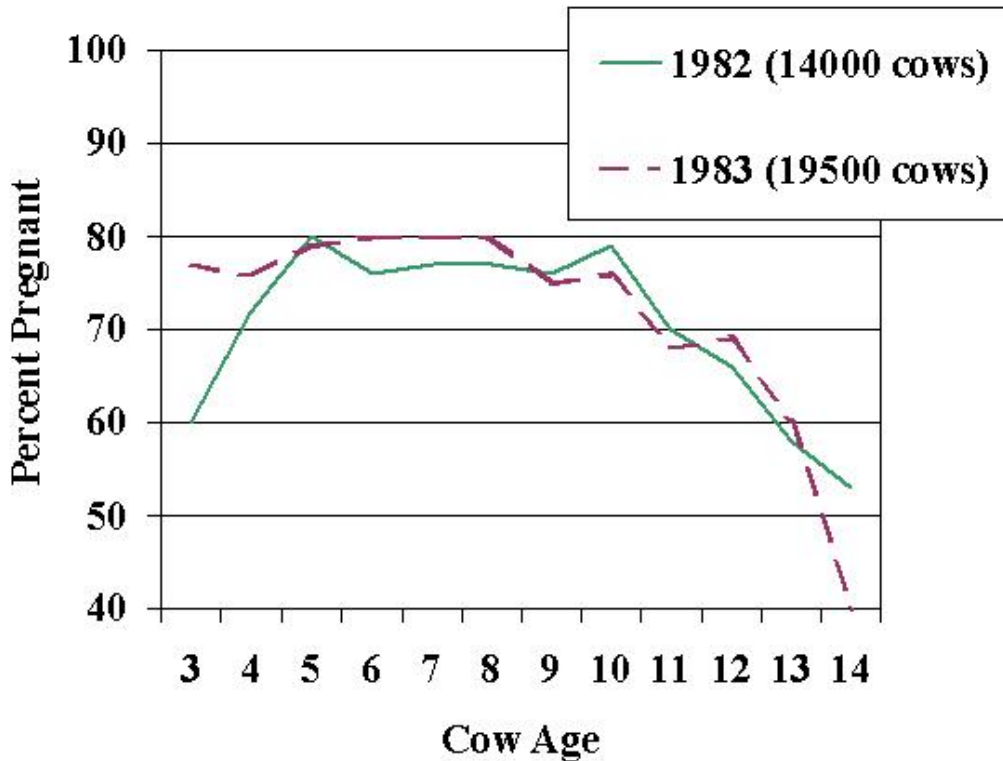
Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

October is traditionally calf weaning and cow culling month for spring calving operations. At cow culling time, producers often face some tough decisions. Optimum culling of the herd often seems to require a sharp crystal ball that could see into the future. If rainfall allows forage growth to be adequate, keeping an older cow to have another calf to wean next year is tempting. Is she good for another year? Will she keep enough body condition through the winter to rebreed next year? Is her mouth sound so that she can harvest forage and be nutritionally strong enough to reproduce and raise a big calf? At what age do cows usually start to become less productive?



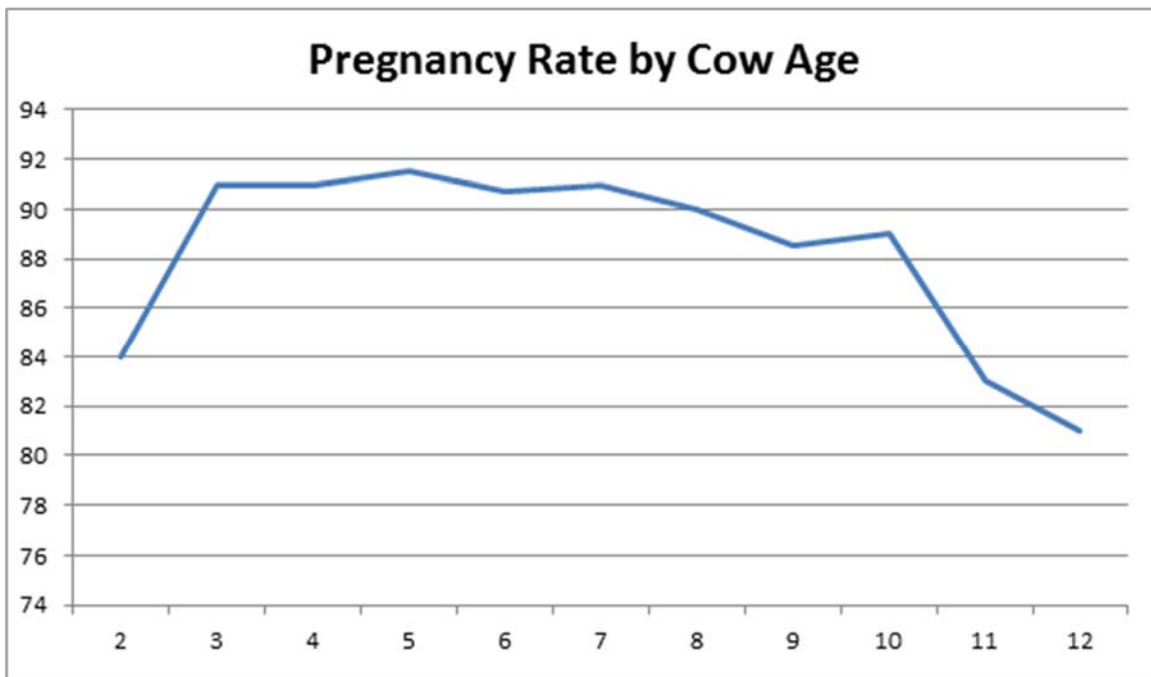
There is great variability in the longevity of beef cows. Breed may have some influence. Region of the country and soil type may affect how long the teeth remain sound and allow the cow to consume roughages such as pasture and hay.

Records kept by a very large ranch in Florida in the 1980's and published in the 33rd Annual Proceedings of the Beef Cattle Short Course by the University of Florida Animal Science Department show how productivity changes over the life of the beef cows. These large data sets, (19500 cows, and 14000 cows in two separate years) are plotted below. They indicate the average percentage of cow determined to be pregnant based on their age in years. These cows were not pampered but expected to produce in the environment in which they were kept.



This data, collected in Florida on cows with some Brahman influence, represents one of the largest data sets on this subject. (Source:Genho, 1984 Proceedings of the Beef Cattle Short Course. Animal Science Department, University of Florida.)

More recently data from the USDA Meat Animal Research Station at Clay Center, Nebraska revealed a very similar pattern. Although pregnancy rates were somewhat higher, the slope of the line after age 10 was consistent with the Florida data set.



USDA Meat Animal Research Center, Clay Center, Nebraska (26,000 records)

These data would indicate that cows are consistent in the rebreeding performance through about 8 years of age. A small decline was noted as cows aged from 8 to 10 years of age. However the most consistent decline in reproductive performance was noted after cows were 10 years of age. A steeper decline in reproductive performance was found as they became 12 years of age. In other words, start to watch for reasons to cull a cow at about age 8. By the time she is 10, look at her very closely and consider culling; as she reaches her 12th year, plan to cull her before she gets health problems or in very poor body condition.

The *Cattleman's Corner* newsletter is distributed bi-monthly by the following:

Oklahoma Cooperative Extension Service
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www.oces.okstate.edu/pittsburg

This Newsletter is one way of communicating cattle information to those interested.

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