U.S. PREMIUM BEEF® UPDATE

VOLUME 28, ISSUE 4 USPB.COM 866.877.2525 NOVEMBER 2024

UNDERSTANDING "OVER 30 MONTH" CARCASSES

"Over 30 Month" (OTM) carcasses are discounted on USPB grids. This is a physiological estimate of age determined by dentition (teeth) of every carcass processed in packing plants. To meet USDA Food Safety Inspection Service (FSIS) regulations, carcasses with three or more permanent incisors breaking the gumline are identified as 30 Months of Age or Older.

Producers who raise their cattle from birth occasionally get carcasses marked as OTM. This can be frustrating when they know the true age of the animal is less than 30 months. One producer commented, "They shouldn't call it OTM, they should call it more than two permanent incisors."

In reality, cattle older than 20-24 months have an increased risk of being classified as OTM by dentition. Dentition is a physiological indicator that can be used for all carcasses.

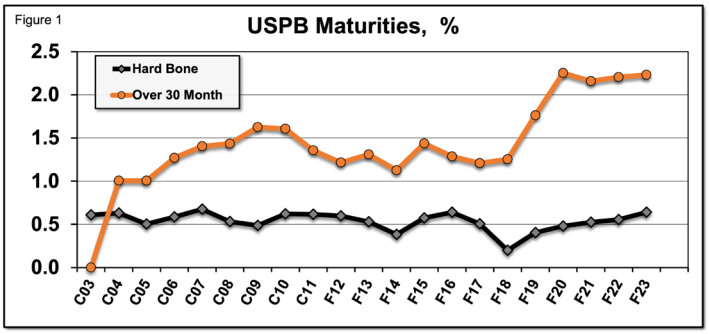
Age is an issue because some countries that buy U.S. beef do not allow any product from older animals. This is still a remnant of Bovine Spongiform Encephalopathy (BSE) detected in December 2003. Initially, exports came to a halt. As borders began to open, many countries restricted exports to only younger cattle. This was because BSE takes so long to develop.

The FSIS put in place the system of determining age via dentition to protect the public and help resume international trade. Traditionally, animals begin to erupt their second pair of incisors at 24 through 30 months of age.

The bottom line is, cattle that are approaching 24 months of age can be marked OTM if one or both of the second pair of permanent incisors is poking through the gumline. Variability between animals exists. Like humans, not all cattle get their permanent teeth at the same chronological age.

After BSE, when age and source verification programs were in place, producers were able to avoid some OTM discounts on cattle that were verified to be younger. However, packing plants no longer have these USDA verified programs in place. Even if they did, the process

Figure 1



of approving and tracking the few groups that could be verified would be too cumbersome and would only apply to a small number of OTM carcasses.

USDA FSIS and some importing countries still require control and removal of Specified Risk Materials (SRM). These are primarily nervous tissue. Some SRMs are only related to cattle that are determined to be OTM. That means additional actions must be taken with OTM carcasses.

The dentition check is initially done on the slaughter floor by a plant employee that is trained and monitored by plant management with an ongoing review of USDA. If a carcass is determined to be OTM, it is physically marked to ensure it will be segregated and excluded from export programs.

Soon after, the head is removed and proceeds to the head inspection line. Here, trained FSIS inspectors look at the head for signs of disease or poor health. They also check dentition of every carcass as part of the plant's USDA Food Safety and Export Verification Program (EVP). Heads are marked with a temporary tag to match the same sequential number of the carcass.

Because of the hassle of segregating, removing and managing SRMs and the loss of exports, packers like National Beef (NBP) would like as few OTMs as possible. If the plant did not mark OTM animals that should be, it would be at risk of violating its EVP and the packer could potentially lose the ability to export any product to

those countries, and in some cases could have operations interrupted by FSIS for not identifying and managing OTM carcasses and SRMs.

Another challenge is OTM carcasses must be fabricated as separate groups at the end of the production day to be excluded from exports. This must be done to ensure no OTM product ends up in an export box.

Fortunately, OTM carcasses only represent about 3% of cattle harvested. However, that creates another challenge — size of fabrication groups. If a large plant can harvest 6,000 head per day, around 180 would be classified as OTM. Harvest groups are also divided by quality grade — so all product coming off fabrication can go into boxes for the same grade. Dividing those OTMs into Prime, Choice, Select and No Roll categories can end up with volumes that are just not feasible.

For example, if 10% of those 180 OTM carcasses are Prime, that is a mere 18 Prime OTM carcasses per day. As a result, the Prime carcasses are processed with the Choice carcasses. This is not a USDA restriction. This is a feasibility and through-put issue for NBP.

Therefore, on the USPB Kansas grid, OTM carcasses are not paid a Prime premium since they are marketed as Choice. The same applies for the USPB Iowa grid. Additionally, the Tama plant, being much smaller, also combines Select and No Roll within OTM carcasses. So, all OTM carcasses on the Iowa grid are either paid at Choice or No Roll price.

In addition, specifications for *Certified Angus Beef*® (CAB) do not allow for carcasses to be OTM. As such, OTM carcasses are not eligible for CAB premiums.

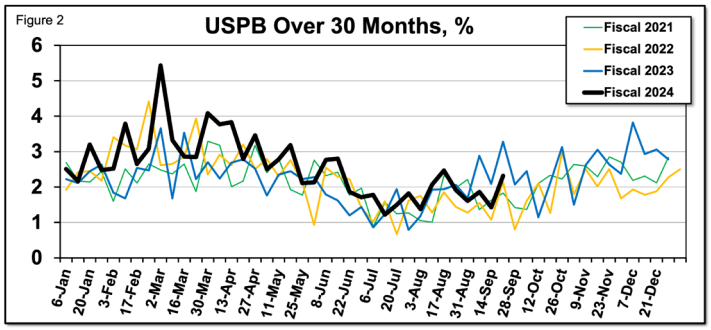
Figure 2 shows how OTM percentage has increased during recent years, within USPB carcasses. This now represents more than 17,000 USPB carcasses each year.

There is a seasonality to OTM carcasses. Early in the year, concentration is higher. Then, as new-crop calves are harvested, they decrease to a seasonal low in July and August. Then the increase resumes.

To-date in fiscal year 2024, Kansas grid cattle have averaged 2.52% OTM. At the same time period last year, it was at 2.13%. This year, Iowa grid cattle are 0.75% points higher than the same period last year.

The industry is encouraging heavier weights. It's logical we've been allowing cattle to grow in backgrounding programs longer to allow for increased harvest weights. In addition, the industry is feeding cattle more days in the feedyard. Altogether, this leads to bigger, older cattle.

Figure 2



Research has documented a relationship between carcasses of advanced maturity and two different DNA markers. So, there is a genetic component to those animals that have OTM dentition, but true chronological age that is less.

Estrogenic hormone implants have been shown to increase bone maturity to a small degree. Researchers have commented it is likely to have similar effect on dentition. USPB cattle on the NatureSource program receive no hormone implants. In fiscal year 2023, natural cattle had only 0.26% OTM. The average of all USPB lots was 2.23% OTM. Looking only at USPB lots originating from Mexico, their average was 3.75%. By comparison, the 2022 National Beef Quality Audit documented 2.60% OTM within the carcasses sampled.

There is also suspicion that consuming hard, coarse forage could potentially cause teeth to erupt earlier — backgrounding on cornstalks or winter grazing stockpiled, lower quality (coarser) grass for example. It's also common to observe cattle chewing on wooden boards/fencing or even a metal neck-rail at the feed bunk. This is similar to giving a teething baby something to chew on to help teeth come in and relieve the pressure on the gums.

Research shows periods of an animal's life with low growth rate increases the maturity of collagen and advance bone maturity more rapidly. Grazing during a drought would not only include coarse forages, but also, slow growth rate.

Some researchers speculate that selection for earlier reproductive maturity could be related to the increase in physiological maturity.

Several research reports have noted heifer carcasses have a higher percentage OTM and skeletal maturity than steers. Yet, there are plenty of USPB lots of all steers that show higher levels of OTM.

Table 1 summarizes USPB lots harvested during fiscal year 2023 in Kansas plants. Natural lots and those of Mexican origin have been excluded. This table compares lots as they

were described on Form B when feedyards submitted them for the showlist. A typical assumption is heifers are the main culprit of age-related discounts. Compared to steers, heifers did have slightly more OTM and Hard Bone (HB) which are also older by skeletal bone maturity. However, what is surprising is how high the mixed sex lots were in both OTM and HB. They were also lighter, but fed less days and were harvested in smaller groups/lots at harvest.

Table 2 summarizes individual USPB carcasses on the Kansas grid. It compares all individuals that are not OTM to those that are OTM. Those with advanced dentition had heavier carcass weight, with less black cattle, and only slightly more heifers. HB percentage was significantly higher indicating that both dentition and bone maturity were advanced. The OTM carcasses had a little less backfat but less muscling and resulted in a small increase in yield grade 4 and 5 percentage. Marbling score was higher, but final quality grades were lower due to the advanced maturity. Also, remember OTM carcasses did not have any that were paid as Prime or CAB. In total, OTM carcasses were valued $153 per head less total dollars last year.

Table 3 summarizes groups or lots that had zero OTM, 5% to 10% OTM, or greater than 10% OTM carcasses. Feedlot in-weights increased, and days fed decreased as OTM increased. Carcass weight also increased. The Choice or better percentage was lower, and CAB decreased due to less black hides and OTM carcasses are excluded from the brand. Lots with 5% to 10% OTM had significantly lower premium but remained solid at $57 per head. However, those with more than 10% OTM had a discount compared to the cash market, on average.

Some producers call if they had OTM carcasses on cattle known to be younger than 30 months by chronological age. However, other producers have delivered "replacement heifer rejects" — those that did not breed and are then finished. These are usually about 21-23 months of age at harvest. Some groups certainly have problems with age-related discounts. Yet, other groups have none.

One ranch from New Mexico has marketed their home-raised calves for years on the USPB grid with almost no maturity problems. Then, last year, saw substantial levels of both OTM and HB. This suggests the animals' environment is a factor. If any other ranches experience this, it might create some research opportunities to learn more.

It is unlikely OTM carcasses will be eliminated. However, with better understanding comes opportunity. Please call Brian at 866-877-2525 if you have questions. ◆

Table 1. USPB lots harvested in fiscal year 2023, Kansas plants.

Table 1	OTM %	HB %	In weight	DOF	Head/ lot	HCW	Yield	Ch & Pr %	Avg YG	Premium, $/hd
Steers	1.85	0.3	767	181	111	914	63.9	84.4	2.64	80.5
Heifers	2.18	0.8	719	174	120	822	63.8	87.6	2.65	67.2
Mixed	5.16	1.5	648	173	57	858	63.6	86.8	2.63	60.4

Table 2. USPB individual carcass summary for fiscal year 2023, Kansas plants.

Table 2	HCW	HB %	Ch/Pr %	No Roll %	BF	a-rREA	% YG 4&5	Marbling Score	Steer %	Black %	$/cwt	$/ head
Not OTM	862	0.0	87.0	0.2	0.61	0.65	14.8	516	44.1	76.4	$279.6	$2411
OTM	892	19.6	72.4	21.0	0.56	0.28	18.4	549	41.3	71.9	$252.9	$2258

Table 3. USPB lots harvested in Fiscal Year 2023, Kansas plants.

Table 3	OTM %	In weight	DOF	% steer	% black	HCW	Yield	Ch & Pr %	CAB	Avg YG	Cond. liver %	Premium, $/hd
No OTM	0.0	717	181	44.3	78.9	858	63.8	87.4	30.0	2.7	32.7	$80.4
5% to 10% OTM	7.0	755	173	46.8	70.4	878	63.8	84.8	22.3	2.6	26.9	$57.4
>10% OTM	23.7	779	164	43.3	67.9	887	63.4	80.3	16.8	2.6	20.8	-$9.0