

Kansas Livestock Industry's COVID19 Economic Damage Assessment

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As the COVID19 (coronavirus) situation continues to evolve, so do impacts on the Kansas livestock sector. To provide some context on economic impacts involved, this article presents a broad assessment of damages incurred across the Kansas beef-cattle and pork-swine sectors. While the current situation seems very likely to change, the goal of this report is to provide big-picture guidance on the extent of economic damage. The bottom-line estimate is a damage of \$1.6 billion dollars as shown in the following table.

Broad Approximation of COVID19 Impact on KS Livestock Margins, by Sector			
<i>Sector</i>	<i>\$ Head Damage Estimate</i>	<i>KS Inventory Impacted</i>	<i>KS Aggregate Damage Estimate</i>
Beef, Cow-Calf	\$ 247.15	1,433,000	\$ 354,165,950
Beef, Background/Stocker	\$ 159.98	3,095,620	\$ 495,237,288
Beef, Feedlot	\$ 205.96	2,944,869	\$ 606,525,264
Pork, Hogs	\$ 48.16	3,660,588	\$ 176,293,927
			\$ 1,632,222,428

Damage estimates per market animal (\$/hd) are combined with Kansas inventory estimates leveraging existing resources from several sources. The \$/head estimates are obtained from two primary sources. Cattle sector estimates for the cow-calf, background/stocker, and feedlot industries are sourced from an early April, national study led by Oklahoma State University (OSU) which Dr. Tonsor co-authored.^{1,2} Hog sector estimates are sourced from an early April study published by the Center for Agricultural and Rural Development at Iowa State University.³ Dr. Tonsor has worked extensively with Dr. Schulz, on multiple aspects of the COVID19 situation and deems these estimates reasonable for use here.

USDA's January Cattle Inventory report indicates that Kansas began 2020 with 1.4 million beef cows providing a cow-calf sector inventory estimate.⁴ The OSU study estimates 15.5 million head in the background/stocker segment have been impacted COVID19. Unfortunately, state-level estimates for the background/stocker segment are not readily available. In their absence, an assumption that 20% of this total (3.1 million head) occurs within

¹ <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-11783/CR-630web.pdf>

² These feedlot estimates are cross-affirmed by Dr. Tonsor's April 13th Tweet noting that comparing February 8th and April 9th based assessment of the Kansas feedlot industry suggests an average projected margin decline of \$210/head for animals sold over the March-October time period. This series is available on AgManager.info at:

<https://www.agmanager.info/livestock-meat/cattle-finishing-historical-and-projected-returns>

³ <https://www.card.iastate.edu/products/publications/pdf/20pb28.pdf>

⁴ <https://usda.library.cornell.edu/concern/publications/h702q636h?locale=en>

Kansas is made to reflect the situation of nationally dispersed post-weaning efforts yet Kansas being core to this segment given predominant Flint Hills grass and wheat grazing practices. The monthly Cattle on Feed report USDA releases suggests that on February 1st 20% of the country's feedlot inventory was in Kansas.⁵ Combined with the OSU study estimate of 14.6 million head nationally being impacted suggests Kansas feedlot inventory involved of 2.9 million head.

The Kansas Pork Association notes that in 2019, 2.7% of the national hog inventory was in Kansas.⁶ Similarly, the most recent USDA estimates of Breeding, Market, and Total Inventory suggest Kansas had 2.7% of the country's inventory on March 1, 2020.⁷ The Livestock Marketing Information Center (LMIC) projects, as of April 30, 2020 federally inspected hog slaughter will be 135.3 million in 2020. Combined with Kansas having a 2.7% share indicates an estimated Kansas inventory impacted to be 3.7 million hogs.

Summary

The meat-livestock sector has been one of the most disrupted within the broader food supply chains. First massive shifts from restaurant, away-from-home consumption to retail, at-home consumption required the industry to adjust product flows, processing efforts, etc. Then challenges in harvesting animals developed as the packing and processing sector became a widely discussed "bottleneck" in the supply chain resulting in backed-up livestock supplies and interrupted flow of meat products to consumers. These large, dynamic, and still-evolving disruptions must be appreciated and are core to final economic impacts for the national sector and Kansas alike. These impacts will truly only be confidently quantified post-pandemic. Accordingly, the broad estimates provided here should be utilized simply for big-picture context and not treated as precise-estimates as one of the few certainties currently is that on-the-ground and economic situations will evolve.

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⁵ <https://usda.library.cornell.edu/concern/publications/m326m174z>

⁶ <http://www.kspork.org/kansas-pork-stats/>

⁷ <https://downloads.usda.library.cornell.edu/usda-esmis/files/rj430453j/ff365q57t/r781x112v/hgpg0320.pdf>