

Emily Saeugling

Nearly two years ago, I met with a Supply Chain Management professor, and my soon-to-be research mentor, for the first time. During that conversation, this professor stated that little research existed on food chains compared to other industries. This surprised me; supply chains in animal agriculture have unique challenges compared to supply chains in the automobile or fashion industries. A bottleneck in the food supply chain doesn't stop a dairy cow from producing milk or a feeder hog from growing. The COVID-19 pandemic exposed the fragility of the US food chain, forcing agriculturists to create innovative ideas and make tough decisions that will impact US food supply chains for years to come.

A dairy cow produces an average of 65 pounds of milk per day, 305 days out of the year. As the pandemic reached the US, restaurants, coffee shops, and schools closed – key buyers of dairy products. At the same time, consumers flocked to the grocery store to buy milk and butter in preparation for quarantine. While the demand for dairy remained, many producers had to dump milk due to infrastructure limitations in processing plants. Producers have struggled with continual low prices, but most had never encountered this. It is devastating to pour your way of life down the drain. One company, Land O'Lakes, was able to find a home for each member-owner's milk. Instead of hitting a 'stoplight' due to infrastructure limitations, they were able to transition to a 'roundabout' of innovation. For Land O'Lakes, this meant producing a higher volume of simpler products, like butter, and limiting production of specialty products. Increasing supply chain agility is important for furthering economic, social, and resource sustainability. Following COVID-19, I think companies will develop strategic plans on how to increase their agility, preventing hitting the 'stoplight' and increasing the number of 'roundabouts.'

Meat packing plants are also critical components of US food supply chain. As workers contracted the virus, plants were forced to slow production or shut down in order to protect the

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health of their employees. Just like dairy, demand for meat rose, yet the supply chain bottleneck caused grocery stores to place limits on meat purchases. Consumers became fearful they wouldn't have access to food. Meanwhile many pork producers were forced to euthanize their healthy hogs. Due to limited production, these animals would be too large for packing plant equipment once shackle space came available. To avoid this 'stoplight' in the future, I think processing plants will move towards semi-automation. However, I don't anticipate full automation in my generation. My experience with meats judging thus far has taught me the human eye plays an important role in meat fabrication – one that is not yet ready to be eliminated. Semi-automation can lower injury rates by automating more physically demanding jobs. Moreover, by requiring fewer workers, there will be more social distancing and less illness.

The fear and anxiety many consumers have felt this year led them to local solutions. Small producers and processing facilities have supply limitations but proved resiliency during COVID-19. In Iowa, CARES Act grants provided funding for small processors. I think state governments will continue to invest in local processing infrastructure, leading to more direct producer to consumer marketing. Changes like this support small producers and local economies. Furthermore, consumers will feel more connected to where their food comes from. This can help alleviate concerns with sustainability, animal welfare, and more. Building a robust, local supply chain offers consumers more choices in the marketplace.

The COVID-19 pandemic has brought many challenges to the US food supply chain. I believe agriculturists have a duty to learn, grow, and innovate based on these challenges to ensure the safety and sustainability of our food supply chain. I am incredibly excited to be part of the generation that will increase the resiliency of our US food supply chains to continue feeding the world.