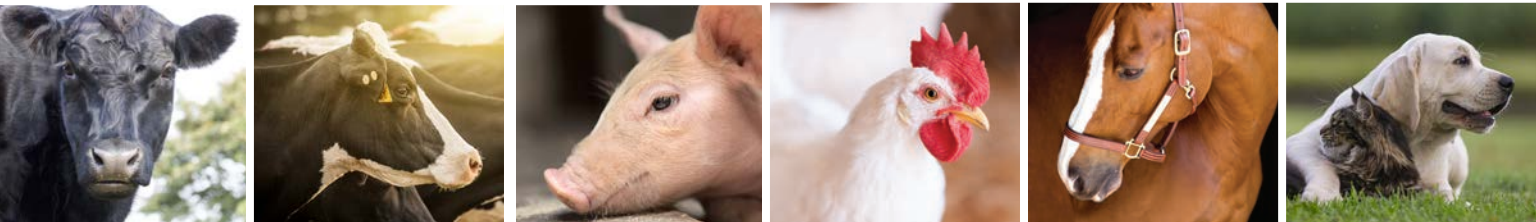




Alltech[®]

**2020 GLOBAL
FEED SURVEY**



Dear industry partner,

Now in its ninth year, the Alltech Global Feed Survey continues to serve as a valuable resource on the state of the global feed industry, drawing data from 145 countries and 30,000 feed mills. The survey sheds light not only on the challenges faced by our industry, but also on the opportunities we have to shape a strong future.

For the first time in survey history, a decline in global feed production was reported. The feed industry faced some extreme challenges in 2019, with one of the most significant being African swine fever (ASF). The regional and global implications of ASF are reflected by the survey and the decline in global feed production. While pig feed production is down in affected countries, we are noting increased production in other species as producers work to supplement the protein demand and in non-affected countries as exports ramp up. The damage caused by ASF will have long-term implications, and we expect that the top protein sources will continue to shift as our industry adapts to the shortage.

We believe that agriculture has the greatest opportunity to shape the future of the planet, and by using collaborative tools such as the Alltech Global Feed Survey, we can evaluate the strengths, challenges and trends within our global food supply chain. I hope you find that the information included here is valuable to your business.

Thank you,



Handwritten signature of Mark Lyons.

Mark Lyons,
president and CEO of Alltech

2019 FEED PRODUCTION ESTIMATIONS BY SPECIES



POULTRY

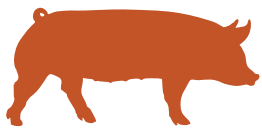
	Layer	Broiler
Africa	5.72	10.0
Asia-Pacific	73.14	115.2
Europe	33.49	56.3
Latin America	24.03	61.8
Middle East	4.86	8.4
North America	15.54	51.8
Oceania	0.93	3.8
Total	157.7	307.3



* All numbers are in million metric tons, unless otherwise noted.

Layer feed saw a strong overall growth of 4% in 2019. The highest growth was seen in Asia-Pacific at 7%, most likely as the result of producing more eggs to provide an additional protein source for the ASF-afflicted region. The region that experienced the largest decline was the Middle East at 11%, likely a result of the turmoil caused by geopolitical tensions.

Broiler feed production was up 3% over 2018, increasing by 10 million metric tons. Africa and Asia-Pacific grew at 6% each, while other regions that saw positive growth ranged between 2–3%. This growth pattern is expected to continue as protein needs increase and ASF-affected countries continue to experience shortages.



PIG

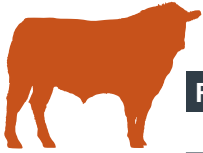
Africa	1.4
Asia-Pacific	93.3
Europe	79.5
Latin America	32.2
Middle East	0.0
North America	53.1
Oceania	1.3
Total	260.9



* All numbers are in million metric tons, unless otherwise noted.

African swine fever (ASF) has significantly affected the Asian market. Asia-Pacific as a whole was down 26% in pig feed, with China specifically down 35%. Biosecurity measures are intensifying as those countries not yet affected try to remain ASF-free. There have been ripple effects in other regions with the creation of new trade opportunities, including the production of other meats, which is increasing to meet protein needs.

2019 FEED PRODUCTION ESTIMATIONS BY SPECIES



RUMINANT

	Beef	Dairy
Africa	2.4	6.0
Asia-Pacific	12.5	22.9
Europe	21.9	44.5
Latin America	13.9	19.8
Middle East	1.5	6.6
North America	62.3	28.3
Oceania	0.9	1.7
Total	115.4	129.9



* All numbers are in million metric tons, unless otherwise noted.

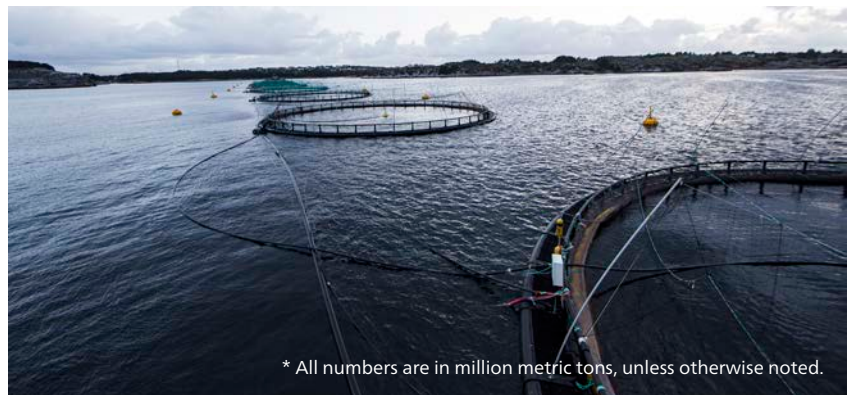
Globally, beef feed increased by 1% — a stark contrast to last year, in which it declined by the same amount. The highest growth was seen in Oceania at 13%, or 95,000 metric tons. This was primarily caused by droughts in the region, which reduced forages and forced beef producers to rely on finishing their herds in feedlots.

Dairy feed estimations for 2019 saw very minimal declines globally. Latin America and Oceania decreased by 3% and 12%, respectively. Argentina's dairy feed is estimated to be down 870,000 metric tons; other countries in Latin America, such as Venezuela and Costa Rica, also saw declines. The dairy industry faced challenges in Oceania, including in New Zealand, where the government set new, lowered target emissions.



AQUACULTURE

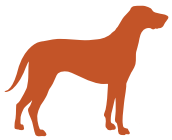
Africa	0.6
Asia-Pacific	30.0
Europe	3.8
Latin America	4.2
Middle East	0.5
North America	1.7
Oceania	0.2
Total	41.0



* All numbers are in million metric tons, unless otherwise noted.

Aquaculture feed grew by 4% in 2019. Asia-Pacific grew the most per ton, producing an additional 1.5 MMT over the previous year. The primary contributors to this growth were China, Vietnam and Bangladesh. Europe's decrease is, in large part, due to a decline in feed production in Russia, which can primarily be traced to an increase in imports.

2019 FEED PRODUCTION ESTIMATIONS BY SPECIES



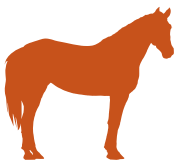
PET

Africa	0.4
Asia-Pacific	3.1
Europe	8.8
Latin America	6.0
Middle East	0.1
North America	8.8
Oceania	0.5
Total	27.7



* All numbers are in million metric tons, unless otherwise noted.

Pet feed grew by 4% globally. The largest tonnage increases were seen in Asia-Pacific, Europe and Latin America. By country, the primary increases were seen in China, Indonesia, Portugal, Hungary, Ecuador and Argentina. The Middle East, Oceania and North America all remained relatively flat. No region saw a decline in pet feed production.



EQUINE

Africa	0.1
Asia-Pacific	0.5
Europe	1.8
Latin America	1.2
Middle East	0.1
North America	3.8
Oceania	0.4
Total	8.0



* All numbers are in million metric tons, unless otherwise noted.

Globally, feed production estimations for the equine sector remained relatively static. North America continues to produce almost half of all of the horse feed in the world at 47.5%. Europe produces a little more than 23%, with the other regions making up the remaining 28.8%.

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—Brian Fiscalini, Fiscalini Farms
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2020 GLOBAL FEED SURVEY

For more information on the survey results,
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