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2020 GLOBAL FEED SURVEY

Data Collected in a Two-Part Survey



Quantitative:

Numerical data collected

Qualitative:

Short answer responses

Quantitative Data

145 countries
represented

13 species,
including aqua,
pets and equine

Primary species
represented:
pigs, dairy, beef,
layer and broiler

Analysis evaluates
country, regional
and global trends

Qualitative Questions

Feed production expectations

1

6

Effects of disease, including imports and exports

Factors contributing to consistency

2

7

New advancements in ag-tech

Consumer trends affecting agri-food

3

8

Biggest opportunities in the feed industry

Environmental sustainability concepts and initiatives

4

9

Biggest challenges in the feed industry

The impact of geopolitical tensions

5

10

Trends in aquaculture

The background image shows an industrial facility, likely a grain processing plant. In the foreground, there are large, conical piles of a dark, granular material. In the background, there are long conveyor belts or chutes, some of which are filled with a yellowish-brown material, possibly grain. The facility has a corrugated metal roof and various pipes and structural elements. A large window on the right side provides natural light.

THE RESULTS

Quantitative Data Analysis



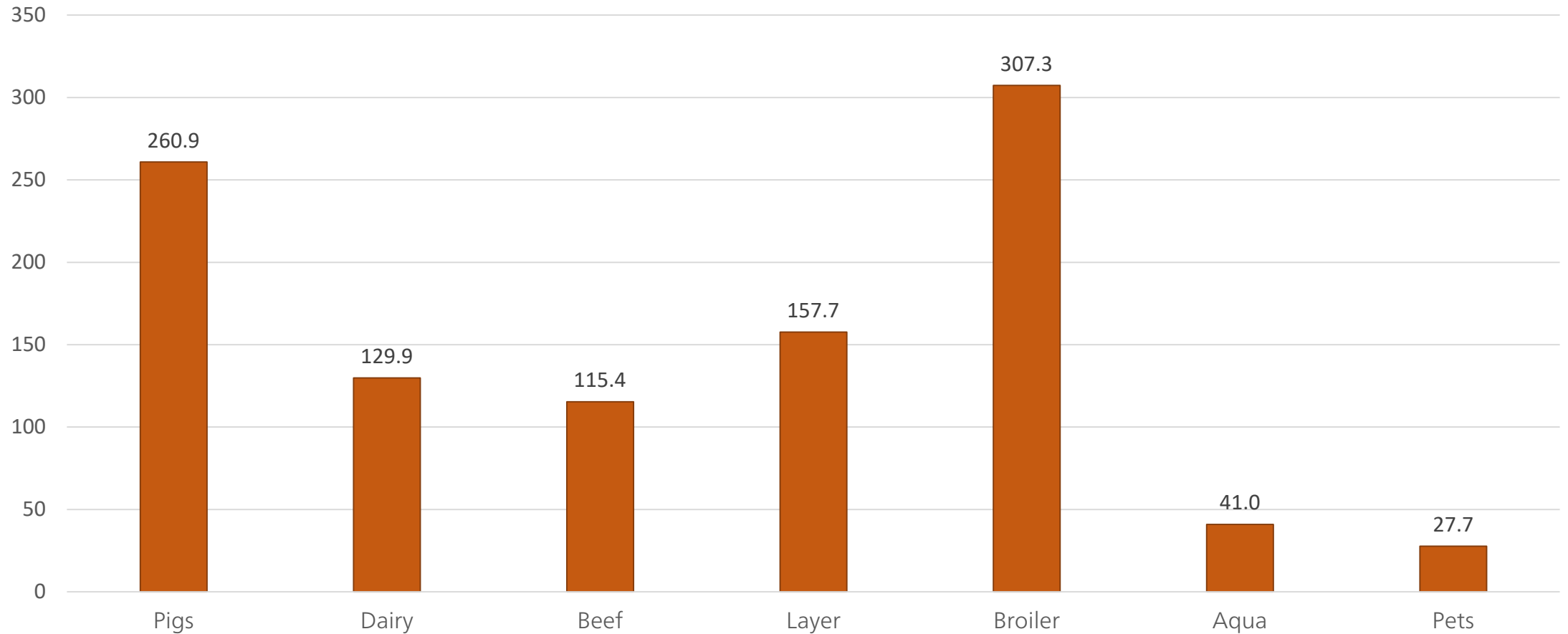
Global Feed Production Down 1%

Region	2018	2019	Percent Change
Africa	40.7	43.7	7.5%
Asia-Pacific	384.5	363.2	-5.5%
Europe	278.8	279.2	0.2%
Latin America	164.3	167.9	2.2%
Middle East	27.6	26.0	-5.8%
North America	232.2	236.0	1.6%
Oceania	10.7	10.5	-1.3%
TOTAL	1,138.2	1,126.5	-1.0%



Numbers are in million metric tons

Feed Production by Species



Numbers are in million metric tons

Top 9 Countries of 2019

Country	Feed Production	Primary Species
USA	214.4	Beef, pig, broiler
China	167.9	Broiler, pig, layer
Brazil	70.4	Broiler, pig
Russia	40.5	Pig, broiler
India	39.0	Layer, broiler, dairy
Mexico	36.2	Broiler, layer, pig, dairy
Spain	34.8	Pigs, beef, dairy
Japan	25.3	Layer, pigs, beef
Germany	25.0	Pigs, beef

Numbers are in million metric tons

SPECIES BY REGION





Pig Feed Production

Region	2018 Pigs	2019 Pigs	Growth
Africa	1.1	1.4	29%
Asia-Pacific	125.4	93.3	-26%
Europe	80.1	79.5	-1%
Latin America	31.5	32.2	2%
Middle East	0.0	0.0	0%
North America	52.7	53.1	1%
Oceania	1.5	1.3	-7%

Numbers are in million metric tons

Swine Feed Down 26% in Asia-Pacific

Country	2018 Pigs	2019 Pigs	Percent Decline
China	79.600	51.740	-35%
Vietnam	11.037	8.720	-21%
The Philippines	7.990	7.350	-8%
Japan	5.585	5.552	-1%
Thailand	6.640	5.549	-16%
Taiwan	3.080	3.017	-2%
Cambodia	0.900	0.700	-22%
Malaysia	0.700	0.680	-3%
Mongolia	0.028	0.027	-4%
Sri Lanka	0.008	0.005	-38%

Numbers are in million metric tons



Poultry Feed Production

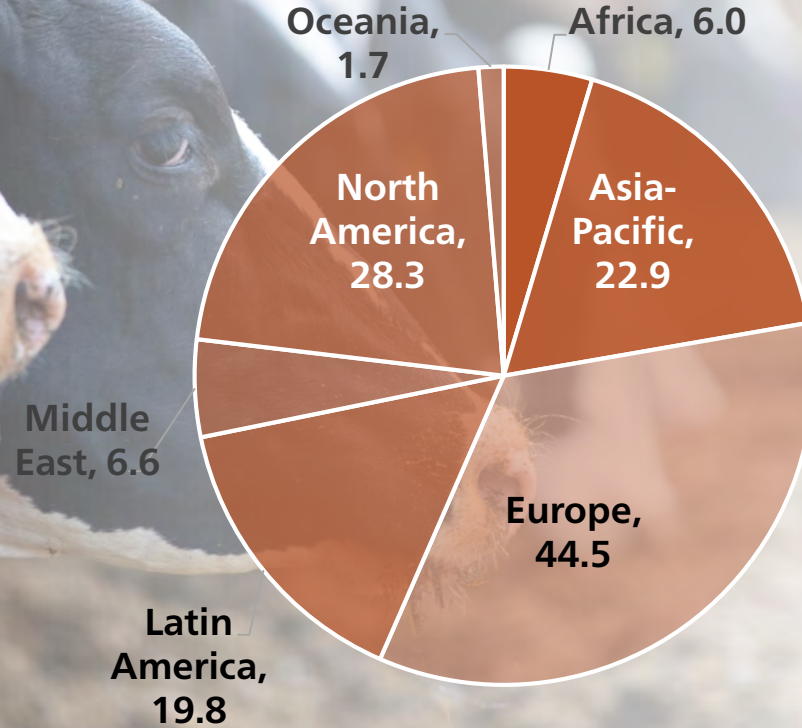


Region	Layer	Broiler	Turkey	Other Poultry
Africa	5.7	10.0	0.6	0.2
Asia-Pacific	73.1	115.2	0.01	9.5
Europe	33.5	56.3	7.9	4.4
Latin America	24.0	61.8	0.3	0.1
Middle East	4.9	8.4	0.1	0.1
North America	15.5	51.8	9.8	0.2
Oceania	0.9	3.8	0.1	0.1

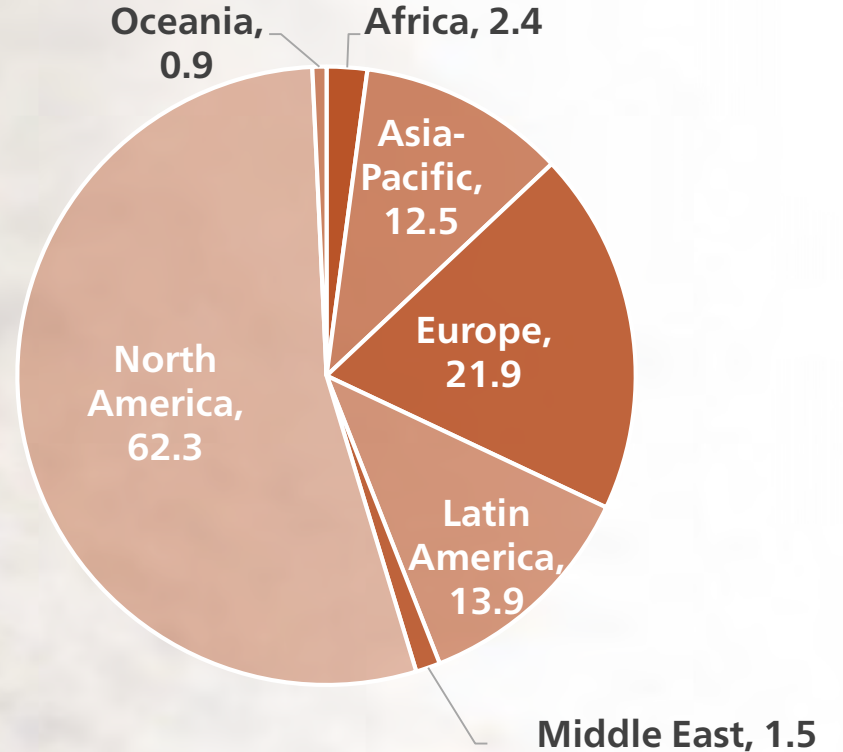
Ruminant Feed Production



Dairy



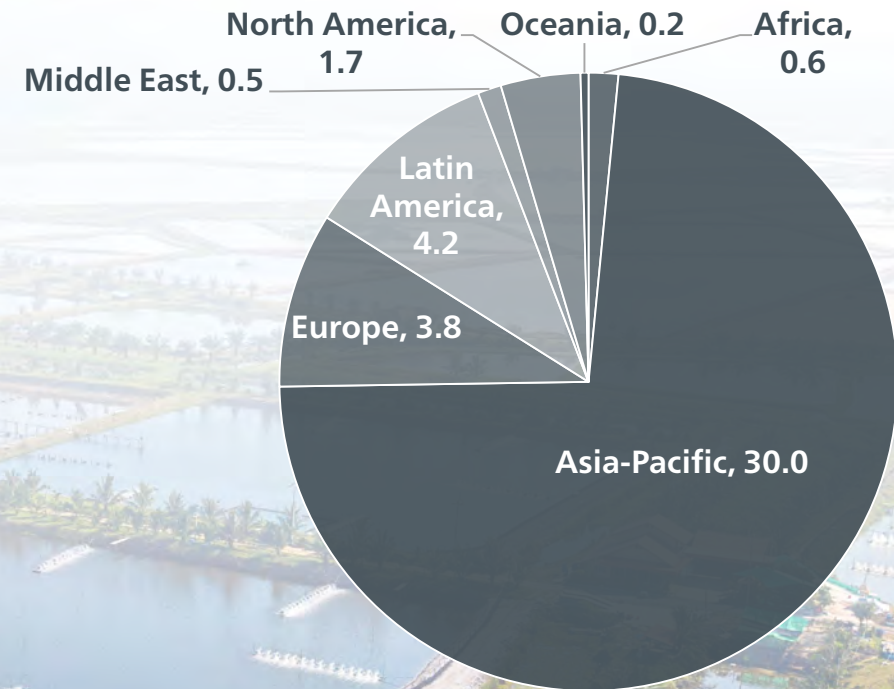
Beef



Aquaculture Feed Production

Per ton, Asia-Pacific grew the most with an additional 1.5 MMT. 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 is primarily due to an increase in imports.



Pet Feed Production Up 4% Globally

The largest tonnage increases were seen in Asia-Pacific, Europe and Latin America.

By country, primary increases were seen in China, Indonesia, Portugal, Hungary, Ecuador and Argentina.



Region	Feed Production	Growth
Africa	0.4	13%
Asia-Pacific	3.1	10%
Europe	8.8	3%
Latin America	6.0	7%
Middle East	0.1	0%
North America	8.8	0%
Oceania	0.5	0%

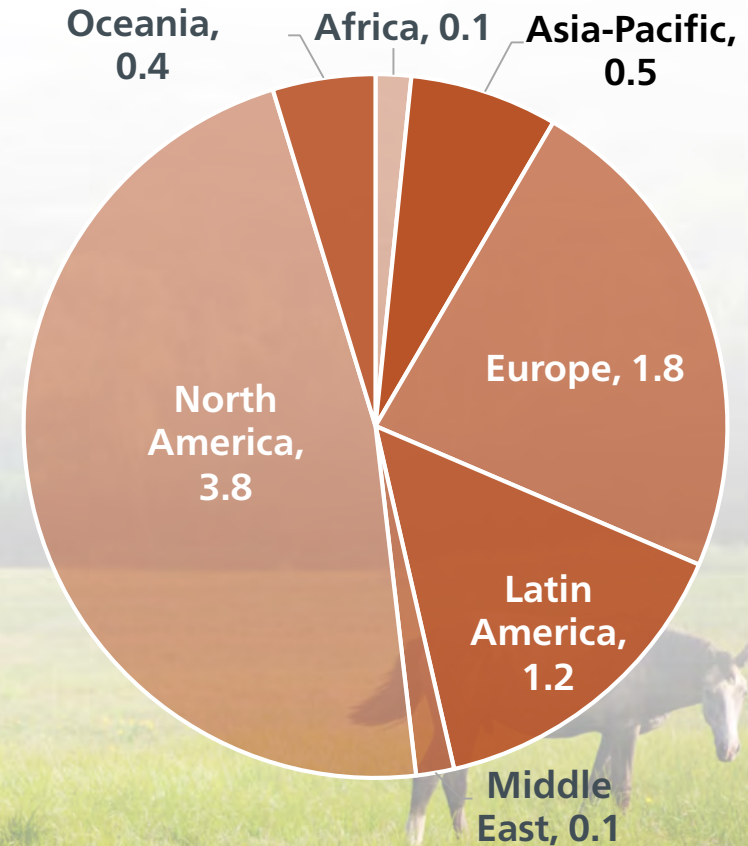
Numbers are in million metric tons

Equine Feed Production

Globally, feed production estimations for the equine sector will remain relatively flat.

North America continues to produce almost half of all horse feed (47.5%).

Europe produces about 23%, with the other regions making up the remaining 28%.





THE TRENDS

Insight Gained from the Qualitative Survey

The Story Behind the Data



African swine fever

Changing consumer demands

Geopolitical tensions

Government regulation

Environment and sustainability

New technologies

African Swine Fever

The Asia-Pacific region was significantly impacted

- Pig feed production down 26%
 - Protein alternatives up: Layer (7%) and broiler (6%)
 - Most affected countries: China, Cambodia, Vietnam, Thailand, the Philippines and Mongolia
-

Europe was also affected, primarily Estonia, Latvia, Lithuania, Romania, Ukraine, Bulgaria

- Pig prices up 20% in unaffected countries

Changing Consumer Demands



Europe

Animal welfare
and climate
change concerns



Increase in
vegetarianism
and veganism

Latin America

Concern about GMOs
Desire for antibiotic-
free



Interest in food
procurement

Geopolitical Tensions

A large orange circle with a white center containing the text "U.S." in orange.

U.S.

The U.S. lost much of its previous export routes to China; time will tell how much ground it can regain.

A large orange circle with a white center containing the text "China" in orange.

China

The tiffs created positive opportunities for Latin America and Europe by reopening markets specifically for beef, poultry and swine.

Government Regulation

Asia-Pacific:

China policies to support pig industry; heavy metal concerns in Malaysia, Bangladesh, Brunei, Indonesia and Singapore

Europe:

The Netherlands, Poland and Greece to reduce number of livestock

North America:

Canada has imposed carbon tax and the U.S. reduction in antibiotic growth promoters

Oceania:

New Zealand government issued new targets for emissions

Environment and Sustainability

Drought spanning several regions:

- Australia, Chile, Ireland, the Netherlands, Romania, U.K., Morocco, South Africa, U.S., Canada and many others
-

Discussion around climate change has left many countries uncertain about potential impact or government regulation.

New Technologies

EMERGING TRENDS:

Monitoring and tracking programs

Drones and GPS to check pasture animals

Digital platforms/cow management

Robotic milking

Big data and cloud computing

ON THE HORIZON:

Tech to increase biosecurity measures

Blockchain is expected to have significant impacts in the near future

Tech to reduce greenhouse gas emissions and enteric methane in cattle



Panel Recording, Slide and Data Map

Available at alltechfeedsurvey.com



Media Requests

Please contact press@alltech.com



Further Questions

Please contact Alexa Potocki (apotocki@Alltech.com)



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Changes in 2019 evaluations

- As part of our continuous effort to improve the precision of our data, we made a change to this year's analysis that impacts previous results:
- The Oceania region was separated from Asia-Pacific to reflect a more widely accepted regional analysis.
- Calculations for U.S. poultry and ruminant were adjusted to reflect the required feed production more accurately. Estimations from 2018 were adjusted using the same calculation for consistency and accurate comparison.
- Any questions regarding the data may be directed to Alexa Potocki at apotocki@alltech.com