

How Mobile Technology Can Revolutionize Livestock Disease Detection and Treatment

Region	Annual growth of total meat consumption (%)		Total meat consumption (Mt)		
	1982–1994	1993–2020	1983	1993	2020
China	8.6	3.0	16	38	85
India	3.6	2.9	3	4	8
Southeast Asia	5.6	3.0	4	7	16
Latin America	3.3	2.3	15	21	39
West Asia/North Africa	2.4	2.8	5	6	15
Sub-Saharan Africa	2.2	3.5	4	5	12
Developing world	5.4	2.8	50	88	188
Developed world	1.0	0.6	88	97	115
Total world	2.9	1.8	139	184	303

The global demand for meat has grown steadily over the last decade, accompanying the consistent rise in the world's population. In fact, global meat production is expected to double by 2023, according to recent [OECD](#) data. Estimates show the global middle class growing another 3 billion by 2050. All with better lives. This is one of the most positive stories in the next decade!

Clearly, new advances in technology and livestock care are necessary to support this increase of production. The

solution, as recent innovations suggest, may lie in genomic analysis and mobile data storage technology.

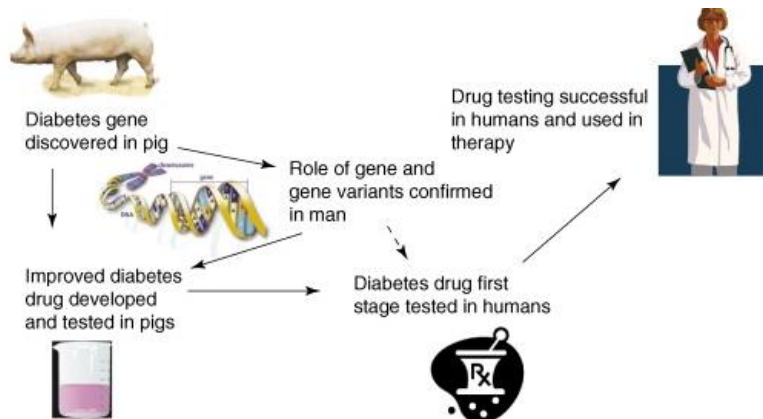
The Impact of Genomics on Animal Health and Agriculture

The advent of modern genetics in the 19th and 20th centuries has brought about significant changes in the way livestock are bred and treated. Through the widespread use of tools like genetic selection and crossbreeding, common food animals like chickens and pigs grow faster, leaner, and produce more offspring.

The molecular genetics revolution of the 1980s introduced the new field of genomics, which studies the entire genome of animals, and how individual genes control various biological processes. Genetic maps have become important tools for livestock producers to breed large and healthy litters of food animals.

The increasing prevalence of genomic analysis is especially prevalent in the swine industry, where gene tests are being used to improve growth quality in more than 60% of pigs produced in the U.S., according to [2008 research](#).

In fact, some studies indicate that this new trend in animal genomics could have major impacts on human health as well. The pig is a model for human



biology. Genomic mapping has revealed a close genetic relationship between pigs and humans, meaning that disease detection and prevention techniques might also be shared across species.

Mobile Technology and Genomics

Mobile technology has begun to proliferate into all aspects of healthcare in recent years, including food animal care and production. Most recently, genomic analysis in conjunction with mobile data storage techniques has begun to be explored.

[Rex Animal Health](#), a precision medicine startup with offices in both San Francisco and Kansas City, leverages genomics and mobile technology to help farmers prevent disease and epidemics amongst their livestock. Their software platform allows livestock producers to keep a comprehensive digital record of all health data. The company then conducts genomic analysis using this stored health data to create epidemiological maps of viruses and bacteria.

This kind of data can have significant impacts on both pharmaceutical companies and livestock producers, according to a [2016 analysis](#). Drug developers would now have access to unprecedented knowledge about exactly where specific bacteria are clustered, which could help them target areas of pharmaceutical development.

And farmers, of course, can leverage genomic data to refine animal husbandry techniques. If certain groups of animals display certain desirable or undesirable characteristics, the specific causal genes associated with these attributes can be identified and traced. Being able to identify animals who may be resistant to a certain illness, or prone to a certain physical deformity, would encourage hyper-specific breeding techniques that could ultimately create a kind of genetic superherd.

Of course, the intersection of mobile technology and genomics has only just begun to be explored. It will take more time, funding, and research before the true impacts of leveraging this kind of technology are realized.

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