

AI could help China's farmers combat swine fever

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Editor's note: This article was contributed by David Joseph, founder of Hub of China, a market research company specializing in the agricultural industry. The article covers a recent case project undertaken by the firm.

The inefficiencies of small-scale farming, aggravated by the spread of swine fever, threaten the viability of pig rearing in China. Moving to larger-scale operations could address efficiency, but bigger facilities are even more vulnerable to disease. Tech firms, including Alibaba, believe they can square the circle with smart farming technology that they claim will reduce labor costs and can detect disease early by listening out for coughing piglets.

As an African swine epidemic continues to sweep through China, tech firms are moving into the farming industry to prevent problems like these. Chinese tech firms need to standardize the data sets and systems containing animal data for this to be an effective national effort in halting future swine-flu outbreaks scaling the country.

Large-scale experiments in pig-rearing are taking place in the form of multi-story farms. A 13-level infrastructure was set up in 2018 in the Yaji mountains of Southern China by agricultural company Guangxi Yangxiang. Each floor has 1,000 pigs. However, these systems are expensive, largely because of the prevention techniques required to stop disease spreading amongst the pigs.

My company Hub of China focuses on the country's agricultural sector, and conducted 30 individual interviews with

farmers who have over 20 years' experience farming in Sichuan province. They listed the main concerns of current farming practices as: the spreading of diseases; the 30% increase in the last 10 years in costs of raising pigs (precipitated by the increased cost of land and food); the lack of efficiency in detecting the pregnancy of pigs; and waste from pigs, which contributes heavily to groundwater pollution. 70% of farmers interviewed felt their current farming techniques would not be financially sustainable within the next decade.

Real-time monitoring

Alibaba thinks they have the answer to the issues voiced by farmers with AI tech. AI-powered technology helps farmers monitor pigs in real time via visual and voice-recognition devices. The program can detect a sick piglet much faster than human observers; the software listens for coughs, which, along with infrared temperature readings, acts as an early-detection mechanism for the outbreak of diseases. Based on their condition, AI will recommend recovery options for the piglet.

The system is also able to detect which piglets belong to each mother, how they were born (natural birth versus C-section), for how many hours they sleep, and even how happy a pig is, based on the amount of time it interacts with connected toys in its environment. This technology engages with the full life-cycle of the pig. The company argues that it prevents the spread of disease, increases the efficiency of animal supervision, reduces costs, and enhances the well-being of the animals.

Alibaba claims that its technology will allow farmers to breed three more piglets per sow per year, bringing the total to 32 pigs per sow per year, a standard metric for pork production. This would be a huge leap and would put Chinese farms on par with the world's best.

Alibaba is not alone. Shenzhen Jinxinnong Technology also has plans to invest \$25 million on two five-story sow farms in Nanping. CP Foods is another firm to enter the sector, developing six-story pig units in Yiwu.

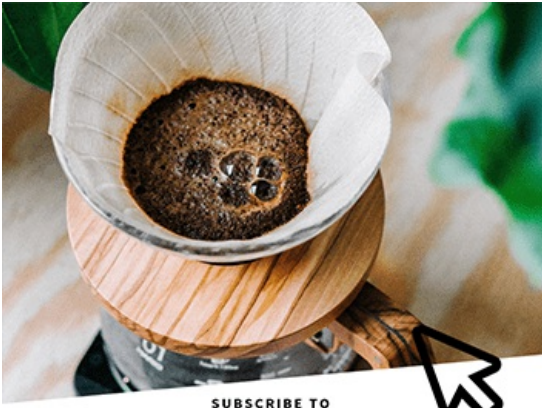
Lowering costs

The interviewees were shown the concept and technology being implemented by Alibaba. Some 80% of farmers would welcome the use of this technology on their farms as they could see the benefits of it reducing costs and increasing efficiency.

Some respondents, however, expressed concerns regarding the steep learning curve they would face to read and implement the data provided. One farmer also mentioned he would be very concerned with diseases spreading very quickly through these multi-story breeding operations. Overall though, the response was extremely positive, with the majority of participants agreeing they would need to move to this technology within a few years.

China is leading the tech revolution in the farming sector, and it seems that farmers are ready to make the jump to use this technology to secure their livelihoods and ensure farming of livestock is sustainable.

So will Chinese pig farmers take on the enormous challenges of using this new technology? The gains will be immense in controlling the spread of notoriously aggressive diseases like swine flu. The pork market is very competitive. Those who are brave enough to embrace the new technology are likely to reap the rewards.



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