



*A Zipline drone delivering swine semen package.
Photo Credit: Zipline*

Semen on drones fattens Rwanda pig industry

By Lydia Atieno

IT'S 10 a.m. at the Zipline Center in Rwanda's Muhanga District and at least four drones have already landed after successfully delivering swine semen to veterinarians. Last month, over 1,000 deliveries were made; officials say their aim is to make more than 3,000 by the end of this year.

Early this year, Rwanda began delivering swine semen through the use of drones to facilitate access to improved breed and boost farmers' incomes under the Livestock Master Plan launched in 2017.

The pig industry is expected to be a major contributor to Rwanda's meat production. According to the Rwanda Livestock Master Plan, the overall target was to raise pig meat

production from 19,945 tonnes in 2016/17 to 67,076 tonnes by 2021/22, an increase of 239 percent.

The Agricultural Household Survey of 2020 put the pig population in the country at 1.2 million.

The semen distribution is done through a partnership between Rwanda Agricultural Board (RAB), and Zipline, a medical product delivery company.

Swine semen is used in artificial insemination to improve pig production.

How it works

Currently, Zipline works with more than 100 veterinarians across the country to help these services reach the farmer in an effective way.

One dose of semen costs between Rwf3000-6,500 at the collection centres. Pig farmers across the country through their veterinarians place an order from RAB on which kind of breed they need.

After confirming the location, the Zipline is then given the final order to put in their system for delivery. After collection from RAB, the swine semen is kept at 17 degrees Celsius, which keeps it warm enough to avoid significant membrane damage or loss of sperm function.

Aphrodis Mukeshimana, a veterinarian in Southern Province, says past efforts to roll out artificial insemination for pigs faced difficulties related to transporting semen from the processing centres to the stockbreeders who need them.

"As you know, swine semen requires rapid delivery, immediately after collection for it to be safe and effective, which is different from cattle semen which can be stored in liquid nitrogen and can be frozen and kept for years," he says.

Providence Manikuzwe, a project manager at Zipline, says that after receiving an order, they conduct tests to ensure the mobility of the sperms and the temperature is right.

Farmers are also sensitised on using the artificial insemination method.

Manikuzwe says it takes only five minutes to prepare the order internally and depending on the destination of the receiver, it normally takes them no more than 30 minutes to complete the full delivery.

For the longest distance they had to cover so far -- 180km -- it took a drone 45 minutes to deliver pig semen to destination.

Farmers purchasing semen from Muhanga District where the drone station is situated previously had to wait for a good three hours to receive their orders as they were being transported in public or private cars.

Simon Muhire, a pig farmer in Muhanga district, says the drone delivery programme has helped them cut costs.



Pigs in a pig shed in Muhanga District, Rwanda, where swine semen is being delivered to farmers using drones. Photo Credit: Zipline



An agrovet from Ruhango District, south of Rwanda holding a Zipline delivery of swine semen. Photo Credit: Zipline

"We no longer incur much in transportation costs as time has shortened. Also, at the moment, we are not incurring the cost of keeping

the boar, which is expensive and can cause a risk for us as farmers as it might contract a disease [and spread it as it mates many sows]," he says.

Fabrice Ndayisenga, Head of Animal Resource Research and Technology Transfer Department at Rwanda Agriculture Board (RAB), says the pig semen being delivered to farmers is from pure pig breeds imported from Europe.

RAB targets having many more farmers getting such breeds for the genetic improvement of their animals. The pure breeds include Large White, Landrace, Pietrain and Duroc.

"Farmers had difficulties accessing the needed semen before, but now, it's much easier and it costs less to get the services on time," says Jean Claude Shirimpumu, the chairperson of the Rwanda Pig Farmers Association.

"This initiative saves the cost for the farmer because raising a boar is expensive as feeding it is costly yet they only need it for mating purposes when the sow is on heat," he concluded.