

Improving mass treatments for piglets in a One Welfare context

Raising healthy piglets is key to profitable pig farming and efficient production of animal protein. During the nursery phase, the use of injectable treatments is steadily increasing. This is due to the efficient use of vaccination programmes and also the trend for reduced use of antimicrobials by the oral route, enabling more accurate and effective treatment. This is all part of the swine sector's commitment to a One Health approach.

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To help the swine sector produce high quality healthy piglets, for many years Ceva Animal Health has been working on solutions, including not only innovative products, such as vaccines and antimicrobial treatments, but also services, such as Vaccinomics, open smart medical devices and the Precision Health Program (PHP) platform for data management.

The Vaccinomics Service is a protocol that promotes good vaccination practices by identifying measurable and easy-to-improve key points related to mass treatments on farms, to ensure effective injection of all animals in a One Welfare context (taking care of human and animals).

Taking in consideration several steps within the vaccination process, and scoring them, we have developed a Vaccination Index that can be followed up and benchmarked with



Fig. 1. Vaccination index calculation.

reference data, to help improve mass treatment protocols at farm level.

As an important part of improving and automating mass treatments, the Smart Medical Devices offer from Ceva is characterised by a spirit of openness, accuracy, ease of use, convenience and traceability (through data collection).

Our commitment is to equip each farm with the solution that best fulfils its needs, from individual piglet traceability to online reporting of any intramuscular treatments for vets and owners.

The offer includes:

EASI: Easy Swine Injector

EASI is the first mass treatment device for piglets, open for any product, with full traceability. This Smart needle device can inject any intramuscular product in the market for piglets up until 42 days of age, delivering doses from 0.5ml to 3ml (with intervals of 0.1ml).

EASI has been designed for mass treatment, and is open to any product, so it can be used for injecting piglets at weaning and in farrowing areas reliably because of its:

- Heavy-duty design to enable long vaccination sessions.
- Well balanced structure and lightweight (just 1.2kg) that makes easy to handle.
- Adaptability to be fixed in trolleys, crates and on farm walls.

Minimum manual actions:

- Automatic processes.
- Automatic dose for products with fixed dose.
- Adjustable dose for medicines whose prescription is related to animal's weight.
- Designed for human safety: no accessible needle.

EASI provides full traceability of:

- Piglet: identifying piglets by RFID crotal identification.
- Product: the device and the system allows you to register the product, batch and vials used.
- Place: EASI can register information about buildings and facilities: farms, rooms and crate tracking.
- Process: device manages data treatment:
 - Day, hour, product, dose, volume.
 - Treatment quality data: number of animals effectively injected at first shot, average number of piglets treated by needle, number of shots per hour.
 - Treatment calendar management.

The EASI solution is therefore the most convenient tool for piglet mass treatment, ensuring:

- Vaccination and treatment quality:
 - Able to homogenise treatment processes.
 - Alerts and sensors focused on correct vaccination.
 - Aims to avoid human error.

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- Full open traceability and smart data management in the PHP platform.
- One Welfare:
 - Operators' convenience, allowing better management of animals and less labour.
 - Animal welfare, by ensuring that the animal is in the correct position for each injection.

AcuShot Gen2 by Ceva

AcuShot Gen2 is the evolution of the needle-free device for intramuscular injection.

Thanks to the collaboration between the two companies, Ceva is able to offer their customers this needle-free device with connection to PHP platform to enable mass treatment in any phase of the swine production process, providing:

- Safety:
 - Needle-free, low risk of cross contamination.
 - Worker safety, no risk of needle punctures and infection.
 - Food safety, no risk of broken needles in livestock.
 - Improved internal biosecurity.
- Advanced Technology:
 - Install and select one of five power cylinders to control injection pressure.



- The 3.5" inch colour touchscreen display can be used with a glove, bare-finger, or stylus.
- See verification of dosage parameters (from 0.2cc up to 2.5cc, adjustable in 0.1cc increments).
- Up to 1,000 injections on one battery charge (depending on dose and power cylinder selected).
- Convenience:
 - AcuShot Gen 2 is a battery operated, high-workload, needle-free injector which is offered in two configurations – Hands Free and Mobile, that can be switched between with ease.
 - Use the Hands Free on smaller animals.
 - Use the Mobile on larger animals.

Finally, the key to improvement is to have trustworthy data and tools that allows effective decision making and monitoring of results.

In this spirit, Ceva developed the Precision Health Program, an online platform in which all the data collected by Ceva devices and services are at the disposal of the vet and owner.

This enables them to consult reports, connect data with their own systems, and, ultimately, have an integrated tool to follow up results for the desired level of traceability, from individual piglet with RFID ear tag to mass treatments sessions, Ceva Lung Program scoring results, other analytics and all the treatments injected with Ceva devices. ■