

# Gel droplet system delivers vaccines, nutrients and probiotics to day-old chicks

by Kobus Van Heerden, Christophe Cazaban and Carlos Gonzalez Alonso, Ceva Animal Health.

One of the most important aspects of any vaccine that is used, is firstly to make sure the vaccine gets in the bird. Secondly, it is getting the vaccine to the right place in the bird where it can stimulate the required immune response. A number of day-old application methods exists.

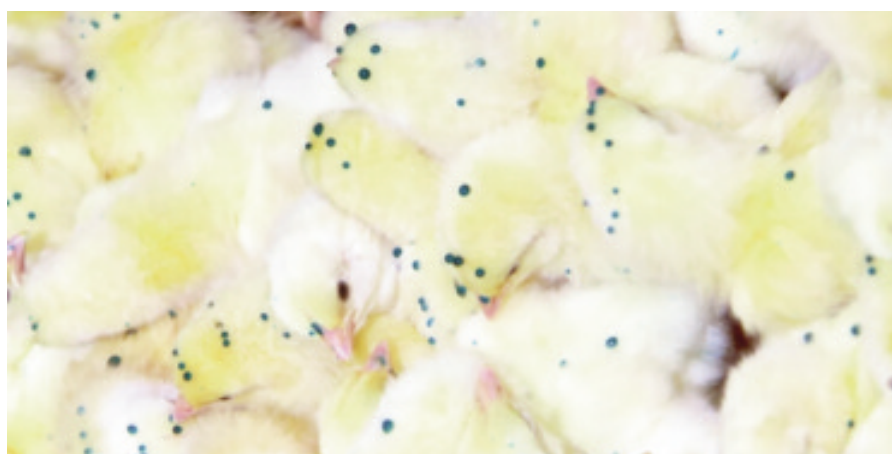
## Water spray

For years live respiratory vaccine application in the hatchery was done via water spray. The intention was to get the vaccine virus to be inhaled deeply as well as droplets to get in the eyes.

Water sprayed vaccines also get ingested, but to a limited extent because it is only the few droplets that land on the eye or the vaccine that gets preened that can be ingested. Water spray application is thus not entirely effective for vaccines that primarily, or even exclusively, target the intestines.

## Eye drop

Eye drop can be a much better application method for the vaccines targeting the intestinal tract when dealing with a small number of birds. As a mass vaccination



Day-old chicks immediately after gel droplet application.

application method in broilers it becomes a very labour intensive method. The time needed to complete the whole vaccination process also represents a threat towards live vaccine viability. One of the benefits however is that very few birds are missed.

## Gel-puck or cubes

Mainly used as a hydration or nutritional supplement, a solid gel puck or cubes can also be used as a vehicle for applying vaccines targeting the intestinal tract.

The main drawbacks, however, are the preparation time and method required. Uptake is also not uniform when crates are

stacked or product is not evenly spread in the crate.

## Gel droplet

A new system, patented by Ceva Animal Health, consists of a soft gel applied to day-old chicks or poults in a crate at the hatchery. The soft gel forms small beadlets which stick to the down of the chicks and is then preened by the chicks or poults. When the chicks or poults preen these beadlets, the vaccine, or treatment that is mixed in the gel diluent, is then uniformly ingested. The key benefits of using droplets are:

*Continued on page 8*

Fig. 1. Variance between farms using on-farm application (Internal Data, 2009-2011).

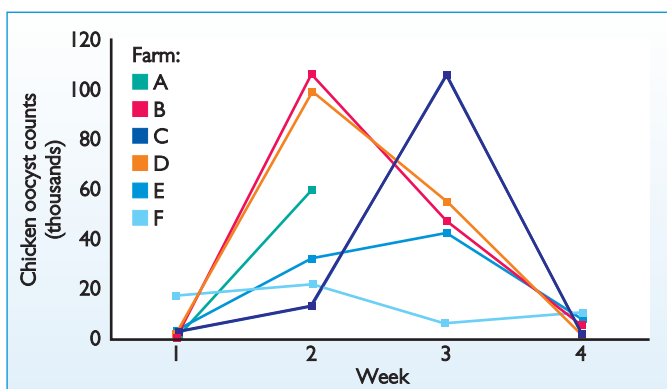
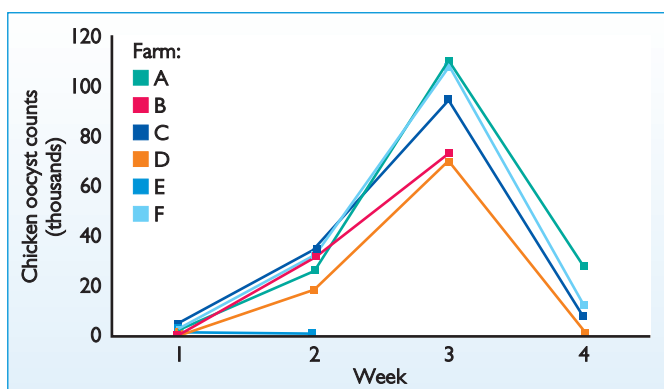


Fig. 2. Uniform vaccine performance using gel droplet application in the hatchery.





**Adding a food colourant to the gel makes it easy to evaluate the vaccine uptake.**

**Gel droplets stick to the chick down and are then preened to ingest the vaccine or product suspended in the gel droplets.**

*Continued from page 7*

- Uniform ingestion of the gel and the product suspended in the gel.
- Relative large volume is applied, 25ml per crate of 100 chicks, that does not reduce the body temperature of day-old chicks or poults like a normal water spray does.
- Adding food colourant to the gel makes the gel more distinguishable to the chick or poult, enhancing the uptake of the beadlets.
- The colour gives the opportunity to verify vaccine uptake by checking for colouration of the tongues of the chicks or poults.

- As it is a gel, fairly large particles can be suspended in the liquid and maintain uniform distribution in the liquid without continuous stirring.
- A number of products have successfully been applied using the gel droplet application method:
  - Ceva's coccidiosis vaccines Immucox I, II and T.
  - Live salmonella vaccines: experimental.
  - Probiotics: demonstrated in experimental trial facilities but commercial trials are underway.

- Nutritional supplements: experimental trials are underway.
- Using oocyst per gram counts on fresh faecal matter as an indicator of coccidiosis vaccine application and recycling, it can clearly be demonstrated that the gel droplet application is much more consistent and uniform compared to the on-farm application.
  - When using coccidiosis vaccination, proper and uniform coccidiosis vaccine uptake is critical to the successful prevention of this costly disease. ■

[www.bigdutchman.de](http://www.bigdutchman.de)

**For layers, broilers, breeders.**

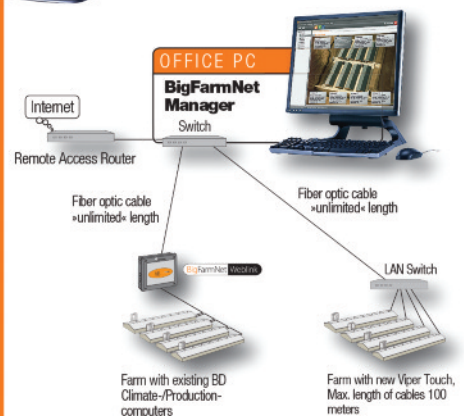
## ViperTouch. The modular climate and production computer in one.

With entirely new user interface. Intuitive, easy and fast.

- |   |   |
|---|---|
| for all types of poultry houses                               | state-of-the-art processor and memory                         |
| brilliant and simple handling via touch screen                | integrated network interface                                  |
| freely adjustable regulation modes: Basic, Flex or Profi Mode | speaks your language – even Arabic, Chinese, Russian and Thai |
| customizable home screen                                      | optional BigFarmNet manager for even more convenience         |
| Simple, mobile retrieval of house data via app*               |   |



\* System requirements: Windows farm PC with internet access and BN Manager 2.2.1 with Web Access.



**Big Dutchman International GmbH**, Germany, Tel. +49-4447-801-0, Fax +49-4447-801-237, [big@bigdutchman.de](mailto:big@bigdutchman.de), [www.bigdutchman.de](http://www.bigdutchman.de), **Big Dutchman Inc.**, USA, Tel. +1-616-392-5981, Fax +1-616-392-6899, [bigd@bigdutchmanusa.com](mailto:bigd@bigdutchmanusa.com), [www.bigdutchmanusa.com](http://www.bigdutchmanusa.com), **000 „Big Dutchman“**, Russia, Tel. +7-495-2295-161, Fax +7-495-2295-161, [big@bigdutchman.ru](mailto:big@bigdutchman.ru), [www.bigdutchman.ru](http://www.bigdutchman.ru), **BD Agriculture (Malaysia) Sdn Bhd**, Tel. +60-3-33 61 55 55, Fax +60-3-33 42 28 66, [bdasia@bigdutchman.com](mailto:bdasia@bigdutchman.com), [www.bigdutchman.com](http://www.bigdutchman.com), **Big Dutchman (Tianjin) Livestock Equipment Co. Ltd.**, China, Tel. +86-10-6476-1888, Fax +86-10-6476-1999, [bdcsales@bigdutchman.com](mailto:bdcsales@bigdutchman.com), [www.bigdutchman.cn](http://www.bigdutchman.cn), **Big Dutchman (Brasil) Ltda.**, Tel. +55-16-2108-5300, [bigdutchman@bigdutchman.com.br](mailto:bigdutchman@bigdutchman.com.br), [www.bigdutchman.com.br](http://www.bigdutchman.com.br)



**Big Dutchman.**