

# Evaluation of an effervescent tablet presentation of a live attenuated Newcastle Disease vaccine in laboratory and field conditions

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## Introduction

Live freeze dried or frozen Newcastle Disease (ND) vaccine preparations are widely used in poultry from day old on for control of ND. Avinew<sup>®</sup> Neo is a live freeze-dried vaccine against ND containing the VG/GA Avinew strain. The vaccine is presented in a form of effervescent tablets. It is manufactured by Merial France (Merial S.A.S., Lyon, France), and was registered in the European Union and elsewhere.

Laboratory safety as well as efficacy clinical study results conditions are presented. They aimed at demonstrating the bioequivalence between the different galenic forms of the vaccine, the frozen form, the most recently registered in the European Union and elsewhere. Preliminary observations of the use of the effervescent tablet form in the field are reported.

Avinew<sup>®</sup> is a registered trademark of Merial in the UK and elsewhere.

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# Safety – Laboratory clinical studies

## Groups of study

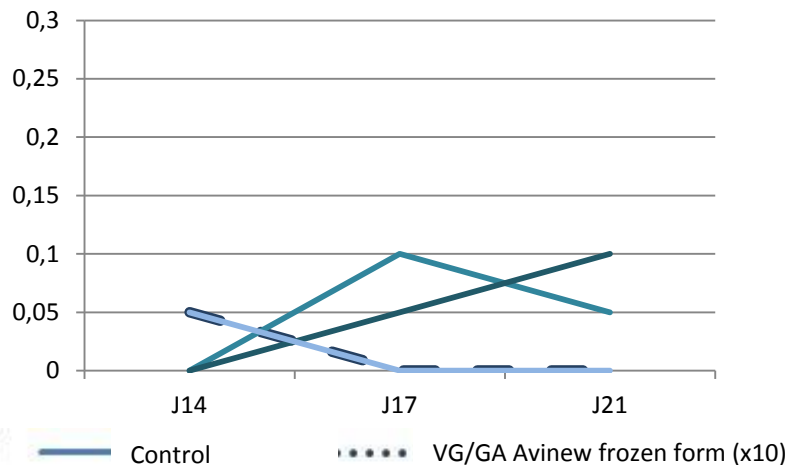
VG/GA Avinew – effervescent tablet form  
(x 10 minimum protective dose)

VG/GA Avinew – frozen form (x 10  
minimum protective dose)

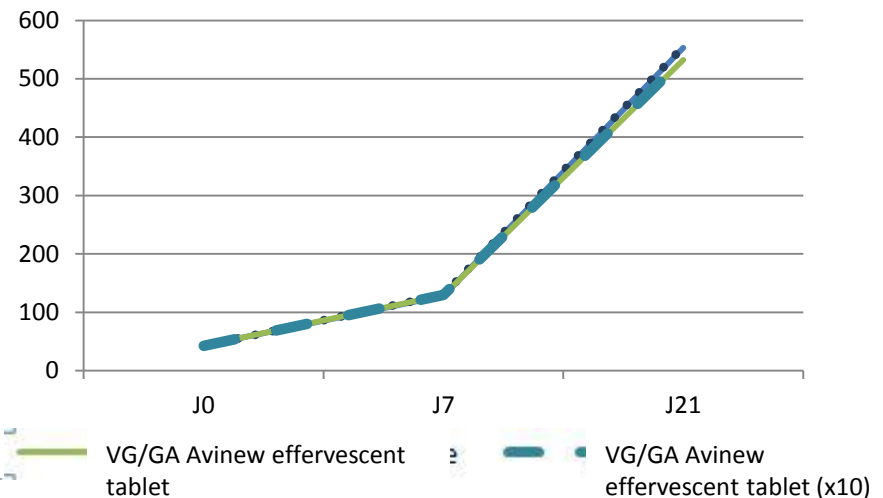
Unvaccinated controls

Safety was monitored by clinical protection induced against virulent ND reference virus Herts 33 challenge at 21 days after vaccination, according to the European Pharmacopoeia monograph for live ND vaccines.

## Clinical Scores



## Body weight monitoring



**The safety of the effervescent tablet vaccine was evaluated in SPF chickens in laboratory conditions and was found equivalent to that of the last recently registered frozen form.**

# Efficacy – Laboratory clinical studies

Efficacy of the effervescent tablet vaccine was monitored by the clinical protection induced against virulent ND reference virus Herts 33 challenge at 21 days after vaccination, according to the European Pharmacopoeia monograph for live ND vaccines. SPF chickens were used for that purpose.

	Mean ND Titer D21 (log <sub>10</sub> HI)
<b>Unvaccinated controls</b>	< 0,6
<b>VG/GA Avinew freeze-dried effervescent form</b>	1,74 (sd = 0,46)

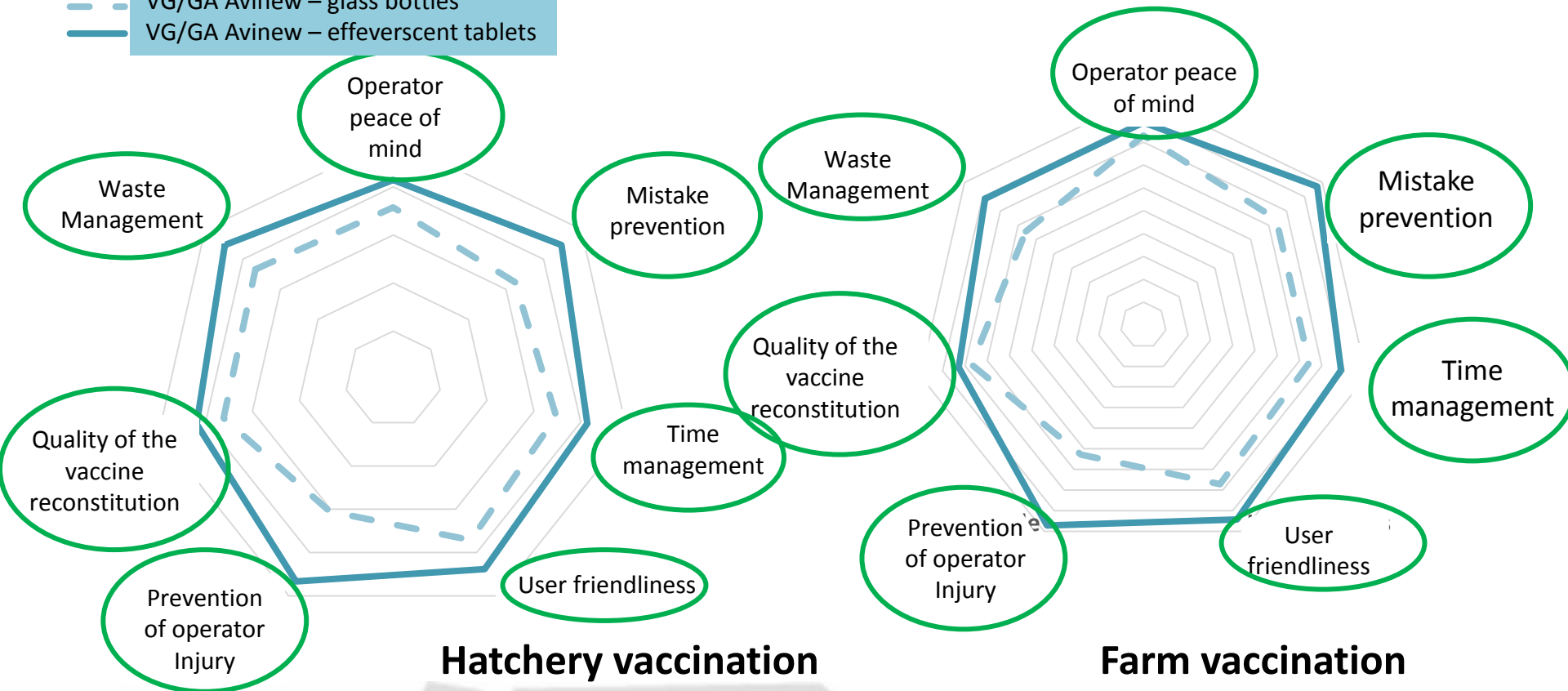
	BEFORE ND CHALLENGE		AFTER ND CHALLENGE	
	Sick chickens	Dead chickens	Sick chickens	Dead chickens
<b>Unvaccinated controls</b>				
<i>10 CHICKS</i>	1	1	9	9
<b>VG/GA Avinew freeze-dried effervescent form</b>				
<i>20 CHICKS</i>	1	1	0	0

**The efficacy of the effervescent tablet vaccine was evaluated in SPF chickens in laboratory conditions. Full protection against velogenic ND virus challenge was observed.**

# Vaccination quality - Field survey

A field survey was conducted in hatchery conditions and in farms. Survey focused on operator's behavior and the risk linked to vaccine preparation. The effervescent tablets of the VG/GA Avinew strain vaccine were compared to standard freeze dried glass bottle vaccine.

- - VG/GA Avinew – glass bottles
- VG/GA Avinew – effervescent tablets



# Discussion/Conclusion

Looking at safety and efficacy the freeze dried vaccine VG/GA Avinew strain of Newcastle disease showed equivalent to the existing widely used galenic presentations of the vaccine: frozen and freeze dried in pellet form. Unchanged safety and unchanged efficacy. Field use survey showed that risk of vaccine preparation failures was decreased.

On-going commercial broiler clinical studies in experimental station conditions will aim to monitor vaccine take by serology and quantitative PCR vaccine strain virus recovery in target organs of the respiratory and digestive tract. Both routes of administration of the VG/GA Avinew vaccine are currently used: spray and drinking water.