

VAXXON® CHB

Broad spectrum against IBV variants
and Newcastle Disease



- Synergy of 2 IB strains: Massachusetts (H120) and Q1-like variant (BNF 28/86)
- Effective protection against IB and ND
- Safe and easy to use from 1 day old onwards

VAXXON® CHB contains 2 IBV strains, H120 (Massachusetts) and BNF 28/86 (Q1-Like), and therefore offers a superior protection against several IBV strains.

VAXXON® CHB has a unique trivalent combination of ND Clone, IBV H120 and BNF 28/86 strains. That is why CHB offers an effective protection against Newcastle Disease and Avian Infectious Bronchitis.

VAXXON® CHB is a freeze-dried live vaccine, the first live trivalent vaccine that can be used in chickens from 1 day old by spray vaccination.

IBV comes first

Infectious Bronchitis virus (IBV) has spread worldwide in all chicken producing areas and is caused by a coronavirus. IBV was first isolated in the USA in the 1930's as an acute respiratory disease, mainly in young chickens. But over time, many variants have been identified in many parts of the world. In fact, up to today, new variants are still being discovered. As viruses take their chances as early as possible, vaccination as one of the main tools to control the field viruses, should take place as early as possible.

IB comes in many colours

Since the first reports of Avian Infectious Bronchitis (IB), IBV has continued to change its appearance. Outbreaks can be fast and strong, with the virus spreading rapidly to involve the entire flock within only a few days. The incubation period is typically brief: 18 to 48 hours. In chicks from 1 to 4 weeks of age, virulent virus strains produce severe respiratory disease, with gasping, coughing, tracheal rales, sneezing, nasal exudate, watery eyes and/or respiratory distress. Occasionally, also swollen sinuses appear, just like kidney problems and negative effects on the ovary tract. A higher mortality is also many times reported, mainly in young birds.

Several variants of the strain have been found in the field, some of them resulted in vaccine strains. It is possible that a vaccine that was effective in the past, may lack in efficacy in some occasions. The evolution of new IBV variants must always be monitored to know whether the current vaccines and vaccination schemes still are able to provide chickens with a solid protection.

IBV variants are endemic world-wide and, in some cases, the IBV H120 vaccine alone no longer provides sufficient protection, even though it is well known and highly recommended. In these areas, new IB vaccines are required to provide chickens with a solid protection against Infectious Bronchitis.



Protection right from the start

Newcastle Disease (ND) is caused by virulent strains of avian paramyxovirus type 1 (APMV-1) of the genus Avulavirus which belongs to the family Paramyxoviridae. The ND virus (NDV) has shown to be able to infect over 200 species of birds, but the severity of the disease produced varies with both the host and the strain of the virus. Even APMV-1 strains of low virulence may induce severe respiratory diseases when exacerbated by the presence of other organisms or by adverse environmental conditions. Since its recognition in 1926, ND is regarded as being endemic in many countries (www.oie.int).

In many epidemiological situations, it is advised to vaccinate as early as possible. For a first vaccination, strains such as ND B1 or ND Clone are used, as they are safe to use in day-old-chicks. Followed by one or several booster vaccinations, depending on the field situation.

Health management of chickens requires several aspects:

- Early vaccination, preferably in the hatchery with vaccine strains developed to day-old chicks, with proven safety and efficacy.
 - Vaccine strain selection according to the actual situation in the field.
 - Combination of classical and variant IBV strains, to provide a broad protection against endemic IBV strains.
 - Adaptation of existing vaccination programs to the current field situations.
- This requires that vaccine strains used act as partners for all following vaccines.

Awareness about the vaccination process is also a must, just like ensuring that the people handling the vaccine are trained correctly. Equipment must be calibrated. Audits are always important, to assure that none of the steps in the vaccination process will harm the vaccine to ensure that the chicks are receiving the vaccine properly.

VAXXON® CHB is a unique trivalent live vaccine to protect chickens against IB and ND right from the start. It is a combination of 2 IB vaccine strains and 1 cloned ND vaccine strain:

C stands for the cloned ND strain included in the CHB vaccine.

ND virus strain Clone $\geq 1 \times 10^6$ EID₅₀

H refers to the H120 IB strain. This vaccine strain is of Massachusetts serotype and has been sufficiently attenuated for use in day-old chicks, yet also performs well in older birds.

IB virus strain Massachusetts H120 $\geq 1 \times 10^3$ EID₅₀

B stands for the IB variant strain BNF 28/86. Genetically, this strain is related to IBV Q1-like strains (Fig. 1 and table 1).

IB virus strain BNF 28/86 $\geq 1 \times 10^3$ EID₅₀

The results of the phylogenetic analysis of the spike nucleotide sequence, analysed with neighbour joining method, confirms the close relationship of IZO 28/86 strain to Q1-like strains (Fig. 1)

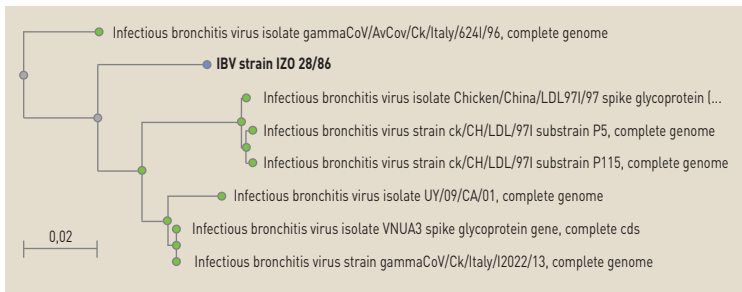


Figure 01 - Nucleotide alignment (using BlastN)

VAXXON® CHB is a live vaccine that contains 3 different vaccine viruses. These strains are produced individually on SPF embryonated eggs. By mixing these 3 components, it is ensured each batch of VAXXON® CHB contains the required titration of each of the vaccine viruses.

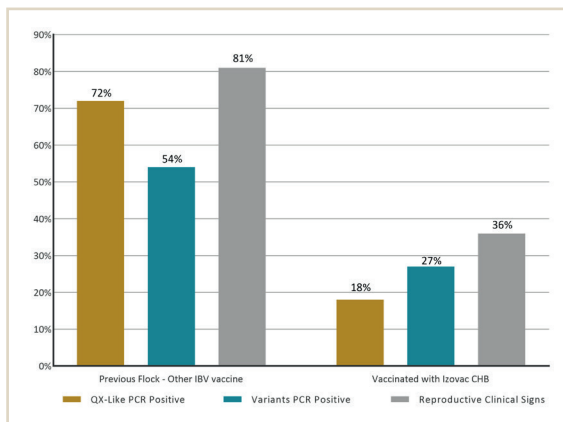
IBV virus strain	Homology rate
Q1	93%
J2	94%
T3	93%
CK / CH / SCYA / 101	93%

Table 1

Field experience

The trivalent vaccine VAXXON® CHB is as good as 3 monovalent vaccines. In case of IB variants, the protection induced is even superior because of the synergy between both IB strains present in the CHB vaccine.

A recent field study in Asia with VAXXON® CHB in broiler breeders showed the advantage of using 2, antigenically distinct, live-attenuated IB strains (Mass + BNF 28/86) simultaneously. The use of 4 doses of VAXXON® CHB at 1, 18, 120 and 168 days of age reduced the QX-like PCR positivity at 33 weeks of age by 75%. Reproductive clinical signs and lesions related to IBV infection were reduced by 55%.



Efficient disease control:

The first vaccination in the hatchery ensures the best process control and one combination vaccine that provides a solid protection against two of the most economically relevant diseases into one further improves chick health. In layers, this is especially important to avoid false layers.

- Spray application
- Administration from 1 day of age

VAXXON® CHB – In short:

- Trivalent live vaccine
- Effective protection against both IB and ND
- Inclusion of new IBV variant of recent importance (Q1-like)
- Synergy of 2 IBV strains (Massachusetts strain and variant)
- Safe and efficacious to use from a day old onwards

TECHNICAL DATA

Pharmaceutical form

VAXXON® CHB is a live freeze-dried vaccine for chicken in multidose vials.

Composition

Each dose of vaccine contains:

- Live attenuated Newcastle Disease virus strain Clone: $\geq 10^6$ EID50.
- Live attenuated Infectious Bronchitis virus strain Massachusetts H120: $\geq 10^3$ EID50.
- Live attenuated Infectious Bronchitis virus strain BNF 28/86: $\geq 10^3$ EID50.



VAXXON® CHB - unique trivalent live vaccine against IBV and ND right from the start

chicken

Target species

Chicken (breeders, layers, broilers).

Indications

Prevention of Avian Infectious Bronchitis and Newcastle Disease in chickens.

1000
ds.

Dosage and method of administration

Each vial contains 1000 ds.
Vaccination by eye drop, spray, drinking water.

1
day of
age

Administration:

The vaccine can be administered to chickens from 1 day of age in drinking water or oculo-nasal route (by eye drop instillation or spraying). Administer a second dose of vaccine after about three weeks. For laying hens and breeders, a third dose of vaccine at around 10 weeks of age is recommended.

24
months

Immunological properties

Active immunisation against Avian Infectious Bronchitis (classical and variants strains) and Newcastle Disease.

IBV
variants

Shelf life

The product in the original packaging can be used until 24 months from the manufacturing date. After opening the vial, the product must be used within 2 hours.

Storage conditions

The product must be stored at +2°C to +8°C.
Do not freeze. Protect from light.

Disclaimer

This brochure may contain information on or may show or refer to products and/or services which are only available in certain countries. A reference to any product/service in this brochure does not imply that such product or such product with the same specifications et cetera, is or will be available at your location. Any product shown or referred to in this brochure may be subject to different regulatory requirements depending on the country of use. Please contact your local Vaxxinova representative for more information.

Vaxxinova® International BV does not give any warranty or other assurance as to the content of this brochure, its accuracy, completeness, timelessness or fitness for any particular purpose.

To the full extent permissible by law, Vaxxinova International BV disclaims all responsibility for any damages or losses (including without limitation, financial loss, damages for loss in business projects, loss of profits or other consequential losses) arising in contract, tort or otherwise from the use of inability to use any material of Vaxxinova, or from any action or decision taken as a result of using Vaxxinova's materials. Vaxxinova disclaims all responsibility and liability (including for negligence) in relation to information mentioned in Vaxxinova's materials.

This document or its content is not to be copied or further distributed without the consent of Vaxxinova International BV.

VAXXINOVA, VAXXON and GOVAXX are registered trademarks of Vaxxinova International B.V. (the Netherlands).

Version number 03, 2022.12 Product number 134075

Vaxxinova® International BV



Transistorweg 5
6534 AT Nijmegen, The Netherlands
+31 24 20 48 600
www.vaxxinova.com