

DESCRIPTION:

Live freeze-dried vaccine against infectious bronchitis disease based on "H-120" strain.

BIOLOGICAL PROPERTIES

After being used two times, the vaccine causes formation of immune response to IB virus in 28 days that lasts for 3 months.

INDICATIONS:

The vaccine is meant for preventive immunization against infectious bronchitis of chicken and chicks, replacement flock and laying hens in breeding and commercial poultry farms of different directions of growth.

DOSAGE:

- o One vaccine immunizing dose contains not less than 4.0 Ig EID₅₀ of IB virus (strain "H-120").
- o The vaccination can be carried out starting with chicks at the age of one day.
- o The vaccine is recommended to be administered twice with an interval of 10-14 days.

ADMINISTRATION:

- o The vaccine is administered twice with drinking water, intranasally, ocularly or with a large drop spray method with an interval of 10-14 days.
- o It is prohibited to vaccinate clinically ill or weak birds.
- o Presence of sharp infectious avian diseases on the poultry farm is a contraindication to vaccination.

SAFETY:

- o No symptoms of chicken infectious bronchitis or other pathological signs at vaccine overdose are determined.
- o At a high level of air dustiness in the bird house and if the ammonia contents norms are exceeded, 5-10% of vaccinated birds can show a reaction in the form of slight depression, lightly shown rhinitis or conjunctivitis on the 3rd-4th day after vaccination, that disappear in 2 days without any treatment.
- o It is necessary to avoid violation of vaccination time schedule because it may lead to decrease of immune prophylaxis of infectious chicken bronchitis.
- o In case of skipping the next scheduled vaccine injection, it is necessary to immunize poultry as soon as possible.
- o If the vaccine is used in accordance with current direction for use, no side effects or complications are noted.
- o It is forbidden to use vaccine within 3-5 days before and 5-7 days after birds treatment with chemotherapeutical means.
- o There are no restrictions in use of meat, products of slaughter and eggs from poultry vaccinated with the vaccine.

PRESENTATION:

The vaccine is filled per 1000 (2,0 cm³), 4000 (4,0 cm³) or 5000 (4,0 cm³) doses in glass vials of corresponding capacity.

SHELF LIFE:

The vaccine shelf-life period is 18 months from the date of manufacture if it is stored and transported in necessary conditions. After the shelf-life expiration the vaccine is unsuitable for use.

STORAGE & TRANSPORTATION:

The vaccine is stored and transported in a dry dark place in factory packing at temperature from 2° to 8° C.

MANUFACTURER:

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**FGBI (ARRIAH)**

ARRIAH IB "H120"

Marked Protective Properties against IB

ARRIAH IB "H120"

Live freeze-dried vaccine from IB "H-120" strain for use against infectious bronchitis

ARRIAH IB "H120" Has high antigenic activity

ANTIGENICITY STUDY

Studies of antibody production dynamics in response to vaccination were carried out in 50 14 days-old chicks. 30 chicks were vaccinated by drinking water method in the amount of 0.2cm³ (containing 10,000 EID50/cm³), 20 chicks remained intact (controls). Before vaccination level of IB antibodies was determined in poultry. In 28 days, sera samples from an axillary vein of control and test poultry were taken and tested using ELISA for IB antibodies.

Table 12: Antigenicity of ARRIAH IB "H120" live dry vaccine against IB

Group No.	Antibody titer to IBV (days)		
	before vaccination	14	28
1.Vaccination	32±6	964±192	1,875±375
2.Control	26±5	38±7	52±10

Result: Data presented in Table 12 suggest that active antibody production was observed in 14 days post vaccination with subsequent titer increase up to 28 days. It was established that ARRIAH IB "H120" live dry vaccine is antigenically active.

STUDY OF VACCINE SPECIFIC EFFICACY (Field Study)

Study of vaccine specific efficacy was carried out under laboratory and production conditions. Intensity of antibody formation and immunity level in chicks immunized with ARRIAH IB "H120" live dry vaccine against IBV, was determined.

Field tests of the drug have been carried out for many years in different regions of the country.

Farms that used ARRIAH IB "H120" remained free from infectious bronchitis.

Study of antibody production dynamics

Studies of antibody production dynamics in response to vaccination were carried out in 50 14-day old chicks. Vaccination was carried out by drinking water method at the dose of 10,000 EID50/cm³. Sera samples were tested using ELISA in 14, 28, 60, 90 and 120 days post vaccination. Half of chicks were re-vaccinated in 10 days. Sera were tested using ELISA

Table 15: Antigenicity of live dry vaccine against IB from strain H-120 when administered once and twice

IBV antibody titer (days)	Groups		
	Single vaccination	Double vaccination	Control
before vaccination	32±6	46±9	26±5
14	964±192	1,073±214	38±7
28	1,875±375	2,124±424	52±10
60	1,624±324	2,247±449	67±13
90	1,487±297	2,035±407	63±12
120	925±185	1,978±395	78±15

Humoral antibody titers against IBV after double vaccination with ARRIAH IB "H120" were higher when after single administration and remain at protection titers for a longer period.

Taking into account the abovementioned information we consider a single vaccination of chicks with live IBV vaccine to be fully protective at early stages of management. Later on, when antibody titer is decreased to a level lower than two minimal positive values it is necessary to carry out revaccination which increases the intensity of immune response and preserves high antibody titers for 120 days post revaccination.

IMMUNOGENICITY STUDY

- o A key factor of vaccine quality evaluation is its immunogenicity, which means vaccine ability to protect poultry from infection.
- o Vaccine immunogenicity was evaluated based on antibody production.
- o We determined minimal immunizing vaccine dose, studied antibody production dynamics to IBV in chicks after single and double vaccination. The obtained data made it possible to estimate the vaccine as highly immunogenic drug.

ARRIAH IB "H120" is highly immunogenic vaccine

JUSTIFICATION OF STORAGE CONDITIONS AND VACCINE SHELF-LIFE

An important factor influencing vaccination efficacy is a storage period during which its infectivity is not affected. Infectivity of ARRIAH IB "H120" vaccine was studied during 12 months. For this purpose, samples of one vaccine batch were stored at 4 °C. At the end of every month vaccine was titrated in 10-day-old SPF chicken embryos to evaluate the infectivity. Data on temperature and storage period effect on vaccine activity are shown in Table 16.

Storage period (months)	Virus titer (lg EID ₅₀ /cm ³) when stored at 4 °C
1	2
Original activity	7.2
1	7.2
2	7.2
1	2
3	7.2
4	7.2
5	7.1
6	7.1
7	7.1
8	7.0
9	7.0
10	7.0
11	7.0
12	7.0

The data from Table suggest that

Storage of vaccine at 4 °C during 12 months didn't affect its infectivity.

CONCLUSION:

Thus the presented data suggest that:

ARRIAH IB "H120" vaccine is innocuous; when administered by different routes no specific clinical signs of IB were observed

ARRIAH IB "H120" Vaccine possesses marked protective properties for poultry against IB inducing strong immunity in 28 days after first vaccination