

INSTRUCTION

for use of the vaccine against Newcastle disease from “La-Sota” strain dry live

I. GENERAL INFORMATION

1. Vaccine against Newcastle disease from “La-Sota” strain live dry.

2. Medicinal form - a lyophilized mass. The vaccine is produced from the extraembryonic liquid of chicken SPF-embryos infected with Newcastle disease (ND) virus (strain “La-Sota”) with the addition of skimmed milk (40%) and lactalbumin hydrolyzate (10%) as stabilizers.

The vaccine looks like a homogenous mass of lightly yellow or lightly brown color, which fully dissolves in the water without formation flakes and sediment.

The vaccine is packaged per 1000, 2000, 3000, 4000 intranasal doses into vials of the corresponding capacity hermetically corked with rubber stoppers, sealed with aluminum caps. The vials are vacuumed after the lyophilization.

3. Vials with the vaccine are packed in blisters or polystyrene boxes with nests or partitions. Each package is supplied with the instruction for use of the virus vaccine.

The vaccine shelf-life is 18 months from its production date when observing conditions of its storage and transportation. It is forbidden to use the vaccine after its expiry date.

4. The vaccine should be stored and transported in a dry and dark place at 2-8°C.

5. The vaccine should be stored out of reach of children.

6. The vials with the vaccine without labels, with the expired shelf-life, defects of integrity or the corking hermeticity, with changes of the colour and/or consistence of the content, with the presence of foreign admixtures, as well as the vaccine residues not used within 4 hours after the dilution are subjected to the rejection and disinfection by boiling within 30 min. or treatment with 2% alkali solution or 5% chloramine solution (1:1) within 30 min.

The utilization of the disinfected vaccine doesn't require observing of special safety measures.

II. BIOLOGICAL PROPERTIES

7. The vaccine induces the immunity response formation in poultry to ND pathogen in 6-8 days after the single use, with the duration of not less than 1,5-2,0 months.

One intranasal (ocular) dose of the vaccine contains not less than 6,7 lg EID₅₀ of ND virus (“La-Sota” strain).

The vaccine is innocuous, not reactogenic and has no medicinal properties.

III. SCHEME OF VACCINE APPLICATION

8. The vaccine is used for the prophylaxis of Newcastle disease in breeding and trade farms of different breeding directions.

9. It is prohibited to inoculate clinically ill and/or weak chicken.

10. The vaccination beginning date is determined proceeding from a level of maternal antibodies in chicks of 10-days age testing in the reaction of the inhibition of hemagglutination or ELISA not less than 25 blood serum samples from chicken kept in one poultry house.

The vaccination is carried out, if in 20% and more tested blood serum samples the antibody titre to ND virus in the reaction of the inhibition of hemagglutination is lower than 1:8 and in ELISA - lower than a double positive value indicated in the instruction for the application of the used diagnostic kit. If in 80% and more blood serum samples the antibody titre to ND virus in the reaction of the inhibition of hemagglutination is 1:8 and higher and in ELISA – 2 or more times higher than a positive value indicated in the instruction for the application of the used diagnostic kit, the poultry is tested repeatedly every 3-5 days and if the immunity level will decrease to 80%, the vaccination will be carried out.

The vaccine is used by the intranasal (ocular) method, orally (with drinking water), by the method of large-drop spraying (spray – method) and by the aerosol method.

Intranasal (ocular) method

The sterile physiological solution is added into the vial with the vaccine at the rate of 0,1 cm³ for one intranasal (ocular) preparation dose. The prepared vaccine is instilled with the eye pipette into the nostril of each chick in the volume of 0,1 cm³ (2 drops), the other one should be closed with the finger, what enables a deep penetration of the preparation into the nostril cavity.

If the nostril is blocked, the vaccine is applied on eye conjunctiva in the same volume.

Oral method

Before the vaccination a water quantity, which one chicken drinks within 1-1,5 hours, is determined and its volume for the whole inoculated flock is calculated.

Water supplying systems, which there are in farms (drinking bowls, nipples, micro-cups) should be thoroughly washed before the immunization without use of disinfecting means.

Quantity of water supplying facilities should promote a free access to the preparation of the whole immunized flock. The drinking space is determined with the age of poultry and the breeding technology.

Before the vaccination the poultry of egg breeds is kept without water within 4-8 hours and poultry of broiler strains – within 2-3 hours.

The vaccine is diluted with pure, free from iron and chloride ions drinking water, cooled till the room temperature (20-25°C) water at the rate that 10 intranasal (ocular) vaccine doses will be contained in the water volume drunk by one chick within 1,0-1,5 hours. For the stabilization of the vaccine virus 5% dry skimmed milk or 25% pasteurized skimmed milk are recommended to add into the water.

The water supply system is filled with the vaccine working solution and it is necessary to see after its regular and full intake.

Before and during the immunization it is necessary to provide a free access of poultry to feed. The water supply is allowed in 2 hours after the immunization carrying out.

Large-drop spray method (spray – method)

The large-drop spray method (spray – method) is recommended, if there is a danger if the early infecting of the flock with ND virus. The chicks are immunized beginning with the age of 1 day independent on a level of maternal antibodies.

The vaccination is carried out by means of special sprayers of any construction, which arrange the drop formation of the diameter of 100-200 micrometer. The sprayer should be corrosion-resistant, not contain remainders of disinfecting means and used only for the vaccination.

The vaccine is diluted with pure drinking water, free from chloride and iron ions, cool (21-28°C) at the rate for 1000 intranasal (ocular) doses of the preparation: for 0,20-0,25 l for the immunizing of one-day-old chicks or 0,5-1,0 l – for more adult poultry. The working vaccine solution is prepared directly before the vaccination.

During the vaccination of one-day-old chicks they are placed into boxes, which are closely set up in one side by side, and the vaccine is regularly sprayed. It is preferably to use special spray-boxes with stationary sprayers.

During the vaccination carrying out the ventilation system is switched out, lighting level is lowered, what calms the poultry and helps its huddling behavior. The vaccine is sprayed over poultry at the distance of 30-40 cm.

To decrease the error of the immunization it is recommended to determine beforehand the capacity of the sprayer by means of spilling of the calculated quantity of pure water without vaccine.

The index of the immunization carried out in the right way is the regular moistening of the poultry coat.

The ventilation system is switched on and the lighting level is backed in 30 minutes after the vaccination finishing.

Aerosol method of the vaccination

Using the aerosol method of the immunization the preparation working dilution is determined according to the formula:

$$P.p. = \frac{C \times V \times T \times A}{D},$$

where: P.p. – a virus working dilution;

C – a concentration of the virus aerosol (mg/l) in the room, which value makes: 0,1 – in not enough canned poultry houses (there are splits in windows and doors, a small pull through the input ventilation) and 0,2 – in satisfactorily canned rooms (there are thoroughly gauged windows, doors, bottom doors of air-shafts, absence of splits).

In badly canned poultry houses it is forbidden to carry out the aerosol vaccination.

V – a poultry lung volume is calculated according to the formula:

$$V = \frac{0,78 \times m - 16}{1000},$$

where: V – a lung volume, l/min.;

0,78 cm³/min. g – a breath volume corresponding to 1 g of the poultry mass;

m – an average poultry mass, g;

16 – constant coefficient.

An average mass is determined by means of weighting of 30 chicken taken from different places of the poultry house.

T – time of the influence of the aerosol on poultry, which shouldn't exceed 20 minutes. The immunization exposition is calculated in 1-3 minutes after beginning of the work of the aerosol generator. In hot days the poultry immunization is carried out in the early morning hours and the exposition is shortened to 15 minutes.

A – infectious activity of the vaccine virus (lg EID₅₀/cm³), it should be determined beforehand before the immunization carrying out b calculated in lg EID₅₀/mg.

D – an immunizing dose of the virus, which should make for chicks at the age of 30 days – 600 EID₅₀ and for elder poultry – 1000-1200 EID₅₀.

Example:

Infectious activity of the virus is 9,0 lg EID₅₀/cm³ or 6,0 lg EID₅₀/cm³ (1.000.000 EID₅₀/mg).

The concentration of the virus aerosol is 0,1 mg/l in the poultry house. The immunization exposition is 20 min. The poultry lung volume is 0,2 l/min. The virus dose, which a chick should receive is 1000 EID₅₀.

$$P.p. = \frac{C \times V \times T \times A}{D} = \frac{0,1 \times 0,2 \times 20 \times 1\,000\,000}{1000} = 400$$

It means that 1 cm³ of the vaccine virus should be diluted 1:400.

A whole volume of the lyophilized virus, which should be taken for the preparation of a working dilution in the concrete poultry house is determined taken into account a poultry house volume (m³) and a virus working dilution.

Example: the poultry house volume is 5000 m³, the virus working dilution is 1:400.

The amount used of the virus working dilution makes 1 cm³ for 1 m³ for the poultry house. So, for this poultry house 5 250 cm³ of the virus working dilution (5000+5% for the rest in the aerosol generators) is required. The quantity of the lyophilized virus makes for this poultry house 13,1 cm³ (5250:400).

For the preparation of the working dilution the virus is taken from not less than 3 bottles taken from 3 different boxes (even if according to the calculation one bottle is required); but only this virus quantity is used, which is needed for spraying in the poultry house of the concrete volume.

The vaccine virus is diluted in the distilled or pure water, cooled to the room temperature with one of the following stabilizers: 5% (on the weight) of dry skimmed milk, 10% (on the weight) of chemically pure glycerin, 25% (on the weight) of pasteurized skimmed milk.

The aerosol vaccination is carried out by means of the aerosol generators, which are filled with the prepared virus dilution by the measuring cylinder. The position of the generators and the working regime are determined according to the instruction for their service. Before the connection of the aerosol generator with the source of the pressed air brooders are lifted, windows, doors and air holes are closed, hoses are blown, the fresh air intake is switched off. Time from the moment of switching out of the fresh air intake and outlet ventilation before beginning of the generators shouldn't exceed 5 minutes.

After the vaccination finishing the aerosol generators are switched off, the poultry houses are aired. It is allowed to enter the poultry house not earlier than in 10 minutes since the airing beginning.

The vaccination effectiveness carried out by different methods is estimated in 14-21 days and considered successful, if in 80 and more percentages of blood serum samples the antibody titre in the reaction of the inhibition of hemagglutination is 1:8 and higher and in ELISA – 2 and more times exceeds a positive value indicated in the instruction for application of the used diagnostic kit.

If the immunity level is less than 80%, the poultry is revaccinated.

11. Newcastle disease or other pathological symptoms during the vaccine overdose were not detected.

12. Peculiarities of the postvaccinal reaction were not determined.

13. It is necessary to avoid a breach of the schedule of the vaccine administration as it can cause a decrease of the effectiveness of Newcastle disease immunoprophylaxis. In the case of a fallibility of the next vaccine administration, it is necessary to carry out the immunization as soon as possible.

14. When using the vaccine according to the present instruction, in 4-5 days after the aerosol vaccination chicks can demonstrate weakness, breathlessness, loss of appetite, which inadvertently disappear in 10-12 days. Adult poultry, as a rule, have no side effects and complications.

15. It is forbidden to use the vaccine against Newcastle disease from "La-Sota" strain live dry together with other vaccines, except the vaccine against chicken infectious bronchitis on the basis of strains of Massachusetts serotype.

Chemotherapeutical means are used within 3-5 days before and 5-7 days after the vaccination.

16. Products of slaughter and eggs from chicken inoculated with the vaccine against Newcastle disease from “La-Sota” strain live dry are sold without restrictions.

IV. INDIVIDUAL PREVENTIVE MEASURES

17. During the work with the vaccine it is necessary to observe general personal hygiene and safety rules established for the work with remedies for the veterinary use.

18. All persons participating in the carrying out of the vaccination should be in the special clothing (rubber boots, gown, trousers, headgear, rubber gloves) and provided with the individual protective equipment: gauze face veils and glasses. In the working place there should be a first aid box.

19. In case of virus vaccine contact with skin or mucosa it is necessary to rinse them with plenty of water. In the case of the vaccine pouring the place is flooded out with 5% chloramine solution.

20. Organization – manufacturer: Federal Governmental Budgetary Institution “Federal Centre for Animal Health” (FGBI “ARRIAH”), 600901, the Vladimir Oblast, Vladimir, Yur’evets.