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XIN ZHI JIAN

Newcastle Disease, Infectious Bronchitis and Egg Drop Syndrome Vaccine, Inactivated (Strain La Sota+Strain M41+Strain Z16)

- Broad antigen spectrum makes possible one shot against three diseases
- Ultrafiltration concentration contributes to high antigen titer
- Centrifugation and purification contributes to pure vaccine
- Premium adjuvant contributes to easier absorption
- Internationally recognized brand brings trustworthy quality

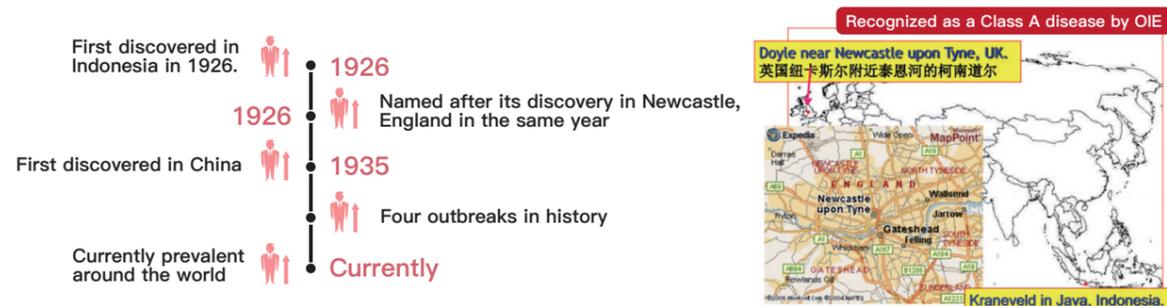


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PRODUCED BY RINGPU

NEWCASTLE DISEASE

- Newcastle disease (ND) is an acute, febrile, septicemic, highly contagious disease of poultry caused by Newcastle disease virus.
- The main symptoms are dyspnea, diarrhea, neurological disorders, and mucosal and serous bleeding.

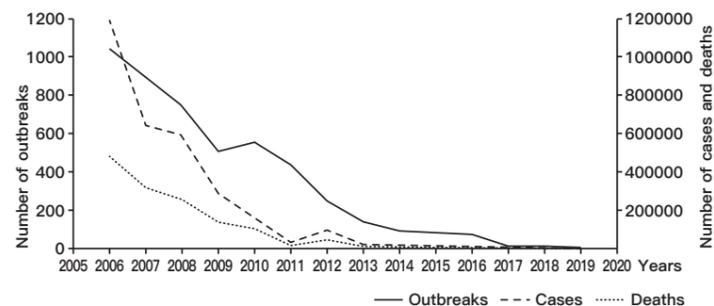


Clinical status



Epidemic situation

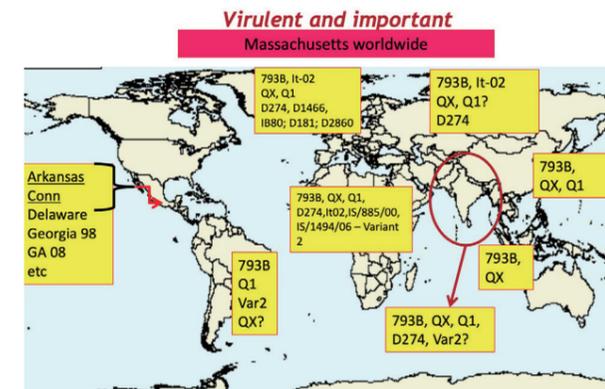
- ND has been declining in morbidity year by year, nearly disappearing in 2017. Usual infection is atypical.



AVIAN INFECTIOUS BRONCHITIS

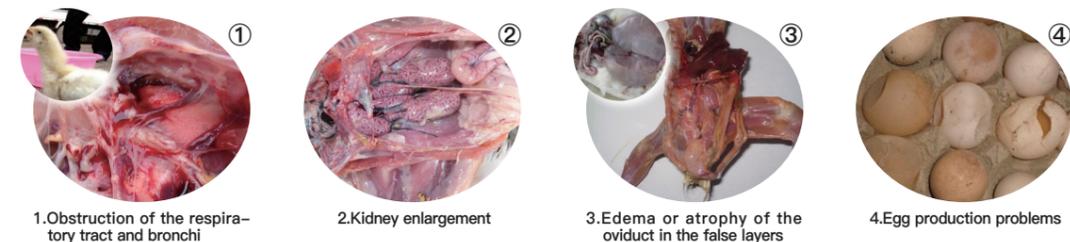
- Avian infectious bronchitis (IB) is an acute and contagious disease. Infection in chicks can lead to up to 30% mortality and reproductive organ damage, resulting in no peak egg production in hens during the laying period. Infected laying hens experience decreased egg production and poor eggshell quality, causing significant economic losses to the poultry industry.

IBV prevalence worldwide



Four hazards of Avian infectious bronchitis

Four hazards: bronchial obstruction, kidney enlargement, fake layer phenomeneon, egg production problems.



The clinical symptoms and mortality rate following Avian Infectious Bronchitis (IB) infection depend on factors such as the virulence of the virus strain, the age of the infected birds, their immunity, stress levels, and secondary infections.

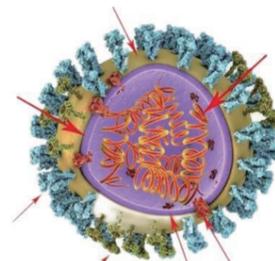
EGG DROP SYNDROME

COMPREHENSIVE PREVENTION AND CONTROL PLAN

- Egg drop syndrome (EDS) is an infectious disease caused by viruses in the flow adenovirus group III. It is characterized by a decrease in egg production.
- The clinical characteristics are that egg-laying flocks fail to reach the expected peak of egg production on schedule, or experience a sudden and significant decline in egg production, often accompanied by changes in eggshell quality, such as the production of soft-shelled eggs, sandy-shelled eggs, malformed eggs, and eggs with lighter shell color.
- Since the disease was first reported in the Netherlands in 1976, it has now been reported in many countries, including Europe, America, Asia, Africa, Oceania, etc.

Characteristics

- 1、 It is a double-stranded DNA virus without an envelope. The virus particles are 70-80nm in diameter, and icosahedral symmetry in structure.
- 2、 There is only one serotype that can agglutinate the red blood cells of chickens, ducks, turkeys, geese, pigeons and peacocks.
- 3、 EDSV replicates in the nucleus, and the replication mainly takes place in the oviduct.
- 4、 EDSV propagates at high titers in duck kidney, duck embryo liver and duck embryo fibroblasts, but cannot propagate in chick embryos.
- 5、 Resistant to a wide pH range. At 50°C, it is insensitive to chloroform. It can survive for 3h at 56°C, lose pathogenicity in 30min at 60°C, and be fully inactivated in 20min at 70°C.



Clinical symptoms



Egg production rate drops significantly

The egg production rate of infected chickens suddenly decreases by 20%~50%. No significant impact on the growth of adult chickens occurs. Egg reduction may return to normal after 4~10 weeks.



Poor eggshell quality

The eggshells of eggs laid by chickens infected with the virus become rough, thin and brittle, and there are sand-like protrusions or brown spots on the surface of the eggshells.



Abnormal egg contents

The yolks of eggs laid by chickens infected with the virus become lighter in color, and the egg whites are as thin as water. Some eggs even contain blood, foreign matter, etc.

Pathological changes

Pathological changes are mainly manifested in abnormalities of multiple organs such as the fallopian tubes, ovaries, and uterus. The number of follicles in the ovaries is reduced and poorly developed, such as uneven follicle size and thinning of follicle walls. Inflammation occurs in the mucosa of fallopian tube, manifested as mucosal congestion, edema, and erosion. Some diseased fallopian tubes are blocked by scarring or excessive mucus caused by inflammation in the fallopian tube mucosa, affecting the normal passage of eggs. In addition, abdominal effusion occurs in some affected chickens.



- ① Biosafety – Isolation inside and outside: personnel (veterinarians, breeders), vehicles, items, feed, feces treatment (control the flow of personnel, materials, and vehicles).
- ② Strengthen daily feeding management
 - Good feeding management can improve the resistance of chickens; ventilation can ensure sufficient clean air.
- ③ Reasonable immunization
 - Laying hens or laying breeder hens: 4~6 weeks before the start of laying, inject “XIN ZHI JIAN” intramuscularly or subcutaneously into the back of neck.
 - For meat-type breeders: Administer “XIN ZHI JIAN” intramuscularly or subcutaneously into the back of neck 7~9 weeks before the start of laying; and administer “XIN ZHI JIAN” intramuscularly or subcutaneously into the back of neck 2~4 weeks before the start of laying.

PRODUCT FEATURES

01 Broad antigen spectrum, one vaccine against multiple diseases

- ① Ringpu’s proprietary Newcastle disease virus strain and the dominant strain of egg drop syndrome virus are used, which has good immunogenicity.
- ② In cooperation with large domestic breeding groups, we screen the dominant strains of avian infectious bronchitis nationwide as vaccine strains, which matches the prevalent strains and has good immunogenicity.
- ③ Ringpu’s unique virus cloning, purification and compounding technology is used to ensure that the each antigen is uniform and of excellent performance. The vaccine has a broad antigen spectrum, and one injection can effectively resist the attack of various virus strains on chickens.

02 International standards, stable quality

Ringpu keeps pace with the international standards and strictly implements GMP production standards to ensure product consistency within the same batch and stability between batches.

PRODUCT FEATURES

03 Centrifugation and purification, pure vaccine

The use of low-temperature continuous flow centrifugation and purification technology can effectively remove impurities such as impurity proteins, greatly reducing the side effects of vaccination. In addition, high-speed centrifugation in a low-temperature environment maintains the good antigenicity of the vaccine and ensures its good immunogenicity.

The first enterprise to propose control standards for endotoxin and impurity proteins in inactivated vaccines

Test items	Ringpu specification for killed vaccines	National Standards
Endotoxin (finished product)	<50EU/ml	No national standard
Impurity protein (finished product)	<2.5mg/ml	No national standard
Residual formaldehyde	<0.6‰	<2‰

04 Ultrafiltration and concentration, high antigen content

The low-temperature rapid tangential flow ultrafiltration and concentration technology is used to ensure that the antigen content before inactivation is more than 3 times the national standard. Antibodies are produced quickly, the antibody level is high, and it is maintained for a long time without the need for additional dosage.

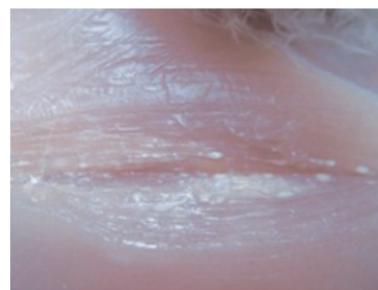
03 New and premium adjuvant, easy to absorb

A new type of premium adjuvant with low viscosity makes the vaccine easy to withdraw, inject and absorb, and to induce the body to produce good and non-specific immune responses.

Comparison of absorption of vaccines with different oil-based adjuvants



Vaccines made with the premium adjuvants are well absorbed after injection, causing little tissue.



Vaccines made with some general adjuvants are poorly absorbed after injection and cause severe tissue damage.

Note: Inject intramuscularly 0.5 ml into chest and observe the absorption of the vaccine after 20 days of age.

PRODUCT INFORMATION

MAIN INGREDIENTS AND CONTENT

The vaccine contains inactivated chicken Newcastle disease virus La Sota strain, infectious bronchitis virus M41 strain and egg drop syndrome Z16 strain. Before inactivation, the content of chicken Newcastle disease virus $\geq 3 \times 10^{8.0}$ EID50/0.1ml, infectious bronchitis virus content $\geq 3 \times 10^{6.0}$ EID50/0.1ml, egg drop syndrome virus content $\geq 3 \times 10^{6.0}$ TCID50/0.1ml.

USAGE AND DOSAGE

Subcutaneous injection in the neck or intramuscular injection. For breeders and laying hens about one month before the start of laying, 0.5 ml per bird.

REFERENCE IMMUNIZATION PROGRAM

- ① Low risk areas: Breeders or commercial laying hens should be immunized 2-4 weeks before laying, 0.5 ml/dose, injected subcutaneously in the neck or intramuscularly.
- ② High risk areas: Breeder chickens or commercial laying hens should be vaccinated for the first time at 7-9 weeks of age, and booster vaccinations 2-4 weeks before the start of production, 0.5 ml/dose, injected subcutaneously in the neck or intramuscularly.

PRECAUTIONS

- ① This product is used to vaccinate healthy chickens. It should not be used in those with weak constitution or other diseases.
- ② The vaccine should be carefully checked before use. Do not use when demulsification or foreign matter is found in the vaccine.
- ③ The vaccine should be returned to room temperature and shaken thoroughly before use.
- ④ Once the vaccine is opened, it must be used up on the same day.
- ⑤ This product cannot be frozen.
- ⑥ Injection needles and other instruments must be disinfected before use, and the injection site should be disinfected with 5% iodine.