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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

# GB/T 45093-2024

## Diagnostic techniques for novel waterfowl astrovirus disease

水禽新型星状病毒病诊断技术

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## Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1.Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Animal Health Standardization (SAC/TC181). This document was drafted by: Shandong Agricultural University, Anhui Qiangying Food Group Co., Ltd., Qingdao Yibang Bioengineering Co., Ltd., Dezhou University Institute of Animal Health and Epidemiology, China Agricultural University, Qufu Normal University, Guizhou Animal Husbandry and Veterinary Research Institute, Shandong Zhongxin Food Group Co., Ltd., Beijing Institute of Animal Husbandry and Veterinary Medicine, Chinese Academy of Agricultural Sciences, Shandong Hekangyuan Biological Breeding Co., Ltd., Jiangsu Yike Food Group Co., Ltd. and Shandong Rongda Agricultural Development Co., Ltd. The main drafters of this document are. Tang Yi, Diao Youxiang, Hao Dongmin, Liu Dong, Jiang Xiaoning, Li Yang, Cui Yitong, Li Fang, Zhang Dabing, Chen Hao, Feng Yulong, Cui Xuezhi, Guo Zhanbao, Wang Sheng, Wang Jianhua, Liu Haitao, Zhang Huiling, Wei Feng, Yu Xiaohui, Han Qinghai, Wang Wei, and Hu Jingdong.

RNA viruses can induce symptoms such as visceral and joint gout in waterfowl, causing

great harm to the safety of waterfowl germplasm resources. The new waterfowl astrovirus disease was first reported in Shandong, Anhui, Jiangsu, Liaoning, Henan, Guangdong and other places in my country in early.2017. An infectious disease characterized by gout that breaks out in a flock of geese or ducks. The disease may infect goslings and ducklings of different ages, causing Serious urate deposition in the internal organs and joint cavities of poultry is highly contagious and has a high mortality rate, causing economic losses to my country's waterfowl farming industry. huge. The disease is initially diagnosed based on its characteristic clinical symptoms and visual lesions, and then confirmed through laboratory pathogen testing. Since the disease was first reported, there is no effective treatment and no conventional vaccine to prevent it. To provide standardized diagnostic technology for rapid and accurate diagnosis of new astrovirus diseases in waterfowl flocks, so as to detect infected flocks as early as possible and take quarantine measures. Isolation measures can be taken to reduce the economic losses caused by new astrovirus infection in waterfowl. Diagnostic technology for new astrovirus disease in waterfowl



## 1 Scope

GB/T 45093-2024 gives the diagnostic techniques for novel waterfowl astrovirus disease, the gout-like condition that appeared in Chinese goslings and ducklings in the middle of the last decade and spread through the major waterfowl provinces, killing birds in the first weeks of life with visceral urate deposition. China raises most of the world's ducks and geese, so a fast and specific diagnosis matters commercially as well as epidemiologically, and the clinical picture overlaps with several other causes of gosling gout. The standard covers the clinical diagnosis, the collection and processing of samples, virus isolation, conventional RT-PCR, real-time fluorescent quantitative RT-PCR, the indirect ELISA for antibody, and the comprehensive judgement that combines them, with informative annexes on the gross pathological changes, the preparation of solutions, the changes in infected embryos, the primers and probes, the positive control virus and the TRIZOL total RNA extraction procedure. It takes effect on 1 July 2025.

This document describes the clinical diagnosis of a novel waterfowl astrovirus, sample collection and processing, virus isolation, RT-PCR, and real-time fluorescence quantification. Laboratory detection methods such as RT-PCR and indirect ELISA. This document applies to the diagnosis, surveillance and epidemiological investigation of novel astrovirus diseases in waterfowl.

## 2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This

document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

NY/T 541 Technical Specification for Collection, Storage and Transportation of Veterinary Diagnostic Samples

## 3 Terms and definitions

There are no terms or definitions that require definition in this document.

## 4 Abbreviations

The following abbreviations apply to this document. Ct value. Cycle threshold RNA. Ribonucleic acid TAE. Tris-acetic acid-EDTA buffer

### 5.1 Epidemiological characteristics

5.1.1 The disease can occur throughout the year, but is more common in winter and spring.

5.1.2 All breeds of geese and ducks can be infected and fall ill.

5.1.3 The onset of disease in geese is seen within 3 weeks of age, with the highest incidence occurring between 5 and 20 days of age. The onset of disease in ducks is seen between 2 and 11 days of age.

5.1.4 The infection rate of geese is about 80%, and the mortality rate ranges from 2% to 60%; the infection rate of ducks is about 50%, and the mortality rate ranges from 5% to 20%. Up to 30%.