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Grain storage - Technical specification for maize storage

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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 is required. 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 State Administration of Grain and Material Reserves. This document is under the jurisdiction of the National Technical Committee on Standardization of Cereals and Oils (SAC/TC 270). The drafting units of this document. Liaoning Provincial Institute of Grain Science, China National Grain Reserves Group Co., Ltd., and Henan University of Technology. The main drafters of this document are. Cao Yi, Gao Sufen, Zhang Lailin, Wang Xibo, Bai Xuguang, Zheng Gang, Liu Changsheng, Tang Jie, Zhao Xu, Li Jia, Zhang Zhihang, and Jiang Shiyong. Grain storage - Technical specifications for safe storage of corn

1 Scope

GB/T 44340-2024 covers the safe storage of maize, which is harder to store than wheat or rice and matters more than the difficulty suggests. Maize goes into store at a higher moisture content, its germ is rich in oil that oxidises, and the kernel is easily damaged in handling - and broken kernels are where mould starts. The mould that matters is *Aspergillus flavus*, which produces aflatoxin, one of the most potent natural carcinogens known and a contaminant that cannot be removed once formed. So a grain store is not a warehouse: it is a controlled environment where moisture, temperature and aeration have to be managed continuously, and where the point of monitoring is to detect a developing hot spot before it becomes a loss. This document specifies the basic requirements for safe maize storage, the requirements for facilities and equipment, the requirements for grain entering and leaving the store, the safe storage techniques, and the monitoring and testing requirements during storage. Under ICS 65.020.01 and CCS B20, it is written for grain depots and reserve operators, for feed and processing companies, and for the food safety authorities.

This document specifies the basic requirements for safe corn storage, basic requirements for facilities and equipment, requirements for entering and exiting the warehouse, safe storage technology, and storage Testing requirements during the period, etc. This document applies to the safe storage of corn in the warehousing stage.

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. in this document. GB 1353 Corn

GB/T 16714 Continuous grain dryer

GB/T 17913 Phosphine circulation fumigation equipment for grain and oil storage

GB/T 18835 Grain Cooling Machine

GB/T 18836 Duct air supply air conditioning (heat pump) units

GB/T 20108 Low temperature unitary air conditioners

GB/T 20570 Rules for determining storage quality of corn

GB/T 25229 Requirements for air tightness of flat warehouses for grain and oil storage

GB/T 26882 (all parts) Grain and oil storage grain condition monitoring system

GB/T 29374 Technical specification for application of grain coolers for grain and oil storage

GB/T 29890 Technical Specification for Grain and Oil Storage LS/T 1201 Technical Specification for Phosphine Fumigation LS/T 1202 Technical Specification for Mechanical Ventilation of Grain Storage LS 1206 Grain Warehouse Safety Operation Procedures LS/T 1213 Technical Specification for Carbon Dioxide Controlled Atmosphere Grain Storage LS/T 1217 Technical Specification for Simple Storage of Grain LS/T 1225 Technical Specification for Nitrogen Gas Controlled Grain Storage

3 Terms and definitions

The terms and definitions defined in GB 1353 and GB/T 29890 apply to this document.

4.1 General requirements

4.1.1 Corn storage should take into account the following factors, including but not limited to. The physical and biological properties of corn, mainly referring to its hygroscopicity, thermal conductivity and respiration;

a) Technical factors, mainly referring to storage type, method and conditions; b)