Journal of Computational Science & Engineering
Available at http://www.asocse.org ISSN 1710-4068 57(2022) 84-86

Quality control measures for quality and safety inspection of livestock products

Cuiping Li[1], Haibo Chen[2], Na Lin[3]
[1]Binzhou Polytechnic, Binzhou, Shandong 256600, China
[2]Binzhou Polytechnic, Binzhou, Shandong 256600, China
[3]Binzhou Polytechnic, Binzhou, Shandong 256600, China

Abstract: with the rapid development of animal husbandry and breeding industry, the supply of animal products continues to improve, and the quality and safety of animal products is a vital issue concerned by the majority of consumers. The quality and safety inspection of livestock products can effectively ensure the quality level of livestock products and improve the quality of livestock products on the market. With the continuous improvement of the quality and safety detection technology level of livestock products, the detection level of drug residues and toxic and harmful substances in livestock products is also improving, and the limit requirements for these substances are becoming more and more strict. If there are errors or deviations in the quality and safety detection process of livestock products, the product quality may be reduced. This paper introduces the quality and safety inspection and quality control measures of livestock products, in order to help ensure the quality level of livestock products. Since the reform and opening up, people's material living standards have been continuously improved, and consumers pay more and more attention to the quality and safety of livestock products. This requires more advanced and accurate technology to detect toxic and harmful substances in livestock products, so as to ensure the safety of livestock products. The specificity and sensitivity of ELISA technology are relatively high, the detection of soluble antigen antibody system is relatively reliable, will not produce excessive pollution, and is relatively safe for staff and environment. Moreover, ELISA technology realizes safety detection by covalent binding of antibody molecules (enzyme molecules), This binding mode will not interfere with the biological activity of the enzyme. Compared with other time-consuming, laborious and expensive detection methods, The technology has more popularization value.

Keywords: livestock products; quality and safety; detection level; quality control; analysis and determination

Corresponding author. Email: 1licuipingwq@163.com

Received 03 August 2022, Revised 18 August 2022, Accepted 24 August 2022

1.Introduction

The quality and safety inspection of livestock products requires a lot of data analysis. Quality control refers to the use of advanced management technology and reasonable data statistical methods to reduce the test error in the quality and safety inspection process of livestock products, or control the error within the allowable range of the test, so as to ensure the scientific and effective quality and safety inspection results of livestock products, With sufficient precision and accuracy. The quality control of livestock product quality and safety testing technology can ensure the traceability and controllability of livestock product testing results [1]. In this way, students' interest in learning can be improved and practical results can be achieved.Effectively improve the effect of practical teaching, improve students' learning enthusiasm and initiative, and improve college teachers' engineering professional ability and professional practice level.

2.Background

2.1 Research Value

In the process of quality and safety detection of livestock products, due to different detection substances, there are many kinds of test sample matrix. At the same time, there are many factors that interfere with the test results in the test process, and many chemical components used in the test are unstable, which is easy to make errors and affect the results of quality and safety detection of livestock products. At this time, the quality control measures of livestock product quality and safety detection technology are particularly important. The following will introduce the common quality control measures of livestock product quality and safety detection technology. To improve and perfect the market access system of agricultural and livestock products. Adjusting and optimizing the market access system of agricultural and livestock products and strengthening the quality supervision of agricultural and livestock products in the market are effective measures to eliminate the circulation of problematic agricultural and

2022@ The American Computational Science Society. All rights reserved.

livestock products. Relevant departments should take the improvement of the traceability system of agricultural and livestock products as the starting point. On the one hand, they should strictly require the operating merchants in the market to purchase agricultural and livestock products through formal channels and procedures. On the other hand, they also need the operating merchants in the market to ensure the authenticity of the procurement procedures of agricultural and livestock products, and require the operating merchants to record and keep the transaction account of agricultural and livestock products in detail, So as to ensure that in case of quality and safety problems of agricultural and livestock products, the relevant responsible parties can be traced and held accountable through the traceability system according to the relevant information provided by the business merchants, so as to improve the effectiveness of market supervision of agricultural and livestock products, and promote the healthy and sustainable development of agriculture and animal husbandry in China.

2.2 Present situation of this test

Quality control measures for quality and safety inspection technology of livestock products.In the process of animal product quality and safety inspection and test, the value of standard is a reliable reference for the measurement results. As a relative true value, it plays a key role in judging the test results. Technicians can judge whether there is error in the test results and whether the error range is controllable through the value of the standard. At the same time, through the relative truth value of the standard, we can judge whether the test method can be further improved and improve the test operation process of animal product quality and safety detection. For the staff who are new to the quality and safety inspection of livestock products, the rational use of standard products can also be used as an assessment sample to judge the quality and safety of livestock products

Check whether the operation level of technicians meets the requirements to ensure the professional ability of technicians [2]. The quality and safety traceability system needs to be strengthened.

The quality and safety traceability system of agricultural and livestock products is mainly an information network that tracks and records the relevant information of various links such as the production, processing, transportation and sales of agricultural and livestock products. On the one hand, it helps to promote the standardized and institutionalized development of the production and operation of agricultural and livestock products. On the other hand, it can also provide reliable reference data for the quality and safety inspection and supervision of agricultural and livestock products, For farm animals.

Supervision plays an active role in promoting the development of product safety. The problems in the quality and safety traceability system are mainly reflected in the fact that the traceability system has not been effectively implemented and there are few types of agricultural and livestock products covered. It is not only difficult to give full play to the due role and value of the quality and safety traceability system, but also difficult to trace the source of some agricultural and livestock products with excessive harmful substances in the market.

2.3 rational uses of blank test

In the process of animal product quality and safety inspection test, the reasonable selection of blank test can effectively eliminate the systematic error in the test and increase the reliability of the test data. The operation process of blank test is to complete the test according to the usual test processing steps and data analysis steps without the condition of test samples. The data and measured values of blank test can effectively reflect the operation level of quality inspection technicians and whether there are problems in instruments and reagents in the laboratory, Moreover, through repeated blank tests, it can also be seen whether the laboratory has the influence of environmental factors. If the effects of several blank tests are almost the same, or the fluctuation range is very small, it can be considered that the operating environment of the laboratory is good, and there are no environmental factors affecting the quality and safety test results of livestock products [3].

2.4 Test results

During the quality and safety inspection test of livestock products, if the data results of the blank test are maintained in a stable range, it shows that the impact caused by systematic error in the whole test process is very small. After the results of the blank test are stable, the parallel test of quality and safety inspection of livestock products can be carried out, The number of parallel test determination is the key factor between

the average value and the accurate result. Theoretically, the more the number of parallel test determination, the more stable and accurate the result is. Therefore, reasonably increasing the number of parallel tests of animal product quality and safety detection test is the key measure to ensure the accuracy of data results. At this stage, national standards, industrial standards and operation rules for quality and safety inspection of livestock products stipulate

2022@ The American Computational Science Society. All rights reserved.

that at least two measurement results are required as the average value to be used as the final detection results. However, in the actual production process, two parallel tests are far from enough, and it is easy to have errors in test operation, resulting in wrong results [4]. Sample standard addition and recovery test during test operation.

3.Conclusion

Doing a good job in the quality and safety inspection of livestock products can effectively control the quality of livestock products,

Ensuring the quality and safety of livestock products in the market and controlling the quality of livestock product quality and safety testing can effectively improve the testing work, improve the accuracy of quality and safety testing and improve the level of safety testing. In the quality and safety test of livestock products, the recovery rate of substances in the sample can be determinedthrough the sample standard addition test, so as to judge whether the concentration of an additive in livestock products is within the standard range. The standard addition recovery test of samples for the quality and safety inspection of livestock products is to add a certain concentration of substances to be tested to the test samples of livestock products, carry out the same test operation for the samples with a certain concentration of substances to be tested and the samples with unknown concentration, and calculate the recovery concentration through the test results of both, The recovery rate of the added substance is obtained by comparing it with the added concentration. The concentration added to the sample needs to be within a reasonable range. Too high or too low will lead to too large deviation of the test results. Generally, the concentration of the standard substance we add is similar to that of the substance to be tested in the sample of livestock products[5], The quality and safety inspection of livestock products is the key measure to ensure the quality level of livestock products and the health of consumers. If there are mistakes in the quality and safety inspection of livestock products or the lack of technical level, it will lead to great errors in the inspection data, so that it can not be used as a reference standard and can not effectively ensure the quality and safety of livestock products. How to scientifically and effectively ensure the smooth progress of livestock product quality and safety inspection is the key issue we need to pay attention to at this stage. With the continuous improvement of the quality and safety detection technology level of livestock products, the detection level of drug residues and toxic and harmful substances in livestock products continues to improve, and the limit requirements for these substances are becoming more and more strict. If there are errors or deviations in the quality and safety detection process of livestock products, the product quality may be reduced. The following will introduce the concept and function of quality control in the quality and safety detection technology of livestock products, as well as the quality control measures and methods of quality and safety detection technology, in order to help ensure the quality of livestock products. In addition, the formulation of coordination mechanism between relevant departments is not perfect, which is easy to lead to a series of problems such as incomplete supervision and low efficiency of supervision.

References

[1] Liu Aijun, Zhai Liangliang, Wang Wenbin Research on quality and safety management of livestock products based on Farmers' Cognition -- Taking Yancheng pig industry as an example [J] Chinese Journal of animal husbandry, 2015,51 (12): 30-34

[2] Liu LiXiao, Huang Zhiwei, Xu Xiaoyou, et al Current situation and Countermeasures of quality and safety supervision of livestock products in China [J] Contemporary animal husbandry, 2015 (18): 89-91

[3] Xi Weidong, Yao Yusheng, Qiao Qi, et al Research on defects and optimization of animal product quality and safety supervision mode [J] Chinese Journal of animal husbandry, 2016,51 (6): 30-34

[4] Ye Qing, Ma Xiaojing, Zhong Qi, et al Quality evaluation of cattle and sheep breeding and environmental safety in Xinjiang [J] Chinese agronomy bulletin, 2015,31 (5): 1-6

[5] Chen shengdou, song Danyang, Chen Chen, et al Development and Enlightenment of animal product quality traceability system in France and the Netherlands [J] World agriculture, 2007 (1): 43-47

2022@ The American Computational Science Society. All rights reserved.