Preliminary Study on Overwinter Storage of Breeding Forest Frogs: A New Model of Intelligent Overwinter Storage Method for Breeding Forest Frogs

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Purpose: As a specialty in the Northeast of China, breeding forest frog has high medicinal and economic value. However, the extensive storage method for overwintering has much reduced its body fat and caused nutritional loss. In view of this, we propose an intelligent solution for overwintering storage. Procedure: On the premise of ensuring the requirement of external conditions during the hibernation process, we designed a comparison between intelligent and natural storage environments and carried out a 27-day simulation experiment. In the intelligent group, the temperature and water level control systems ensure the appropriate temperature water oxygen content in the tank and reduce the consumption of bio-fat. Through the Internet and mobile APP to achieve real-time monitoring and box-abnormal alarm. Data: After 27 days, the intelligent storage system kept 100% of frogs in deep hibernation state, and the weight loss rate (fatl consumption rate) of female frogs decreased from 8.7% in the extensive environment to 2.5% in the intelligent environment. The weight loss rate of male frogs decreased from 12.0% to 4.1%. The vital signs were normal. Conclusion: It is the first time to realize intelligent controllable storage and management of breeding forest frogs. According to the experimental data, the weight loss rate was greatly improved after overwintering under the new environment. The scheme can be extended to intelligent cellar-storage or bank-storage and improve the efficiency of breeding greatly. We hope that the intelligent storage model will provide help for the future research of this type of project.