Panasonic Environmental Systems & Engineering Co., Ltd.

Countermeasures to prevent livestock excreta odor from spreading at livestock facilities

Rock wool deodorizer

Features

- A deodorization system decomposes ammonia by microbes.
- About 20% space-saving compared to the predominant soil deodorization facilities
- The system uses power only for a blower and sprinkler pump, and it helps cut running costs.

Rock wool deodorizer

Overview (Technical principles, actions, etc.)

Biological Deodorization Method

This method captures odor substances by making them dissolve in water contained in deodorizing material, dissolve in solution, or absorbed into the deodorizing material so that the odor substances will be decomposed by microbes in the deodorizing material or solution.

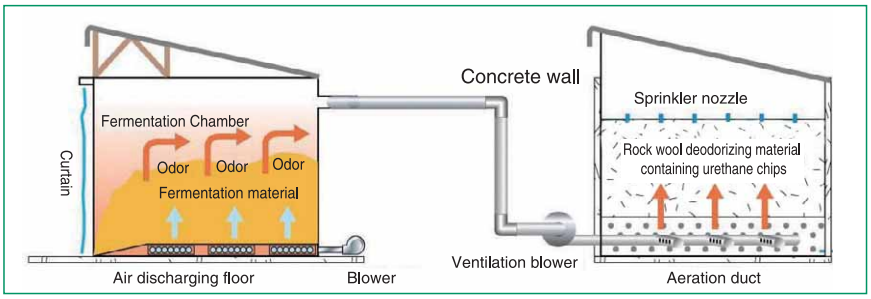
The deodorizing material comes into contact with rock wool and the odor substances are absorbed in the particles of the rock wool, where water and microbes decompose the odor substances. Water is replenished from a sprinkler pump to dissolve the odor substances and activate the microbes. Therefore, the place should be roofed to protect the place from rainwater to adjust the quantity of water replenished.

With the work of aerobic bacteria, the odor substances consisting of ammonia gas (NH_3) are decomposed to NO_2 and NO_3, which are further decomposed to N_2 under anaerobic conditions.

An ammonia inlet concentration of 200 ppm or below at a temperature of 40°C is preferable. Ammonia of higher concentration may need to be diluted.

Patent (deodorization method): 2006 Patent No. 298047

Patent (structure): 2006 Patent No. 980082



Rock wool deodorization system mechanism

Introductory Track Record

- **In Japan: 45 sites since 1995**
- **Overseas: Test facilities are installed and certified in Korea in 2007.**

Effects

◎The high-performance cost-saving system incurs running costs only for a blower to capture odors and a sprinkler pump to supply appropriate water for stable microbe-based decomposition. Simple operation and minimum maintenance, the system needs no chemicals or additional bacteria.

◎A drainless design is available by internal circulation throughout the system.

◎Up to 200 PPM of ammonia concentration at the inlet duct will be reduced to the level of 5 PPM or less.

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