BioSecure

Enhanced and cost-effective biosecurity in livestock production

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PRACTICE ABSTRACT # 22

Illuminating the unseen

Methods to show hidden pathogen introduction routes

Biosecurity assessment surveys, such as Biocheck.Ugent™, offer important insights into a farm's strengths and vulnerabilities regarding biosecurity practices. However, **some potential pathways for disease transmission may be unknown to the farmer, as they are obscured from plain sight**. These pathways may include entry routes accessible to rodents, insects, air or rainwater that could be contaminated, e.g. with avian influenza virus from the faeces of infected wild birds in the surroundings of the poultry farm. Also, some farm workers or suppliers may not adhere to existing protocols, but this may occur beyond the farmer's immediate observation. Therefore, we investigate new methods to make the unseen visible:

Fluorescent tools

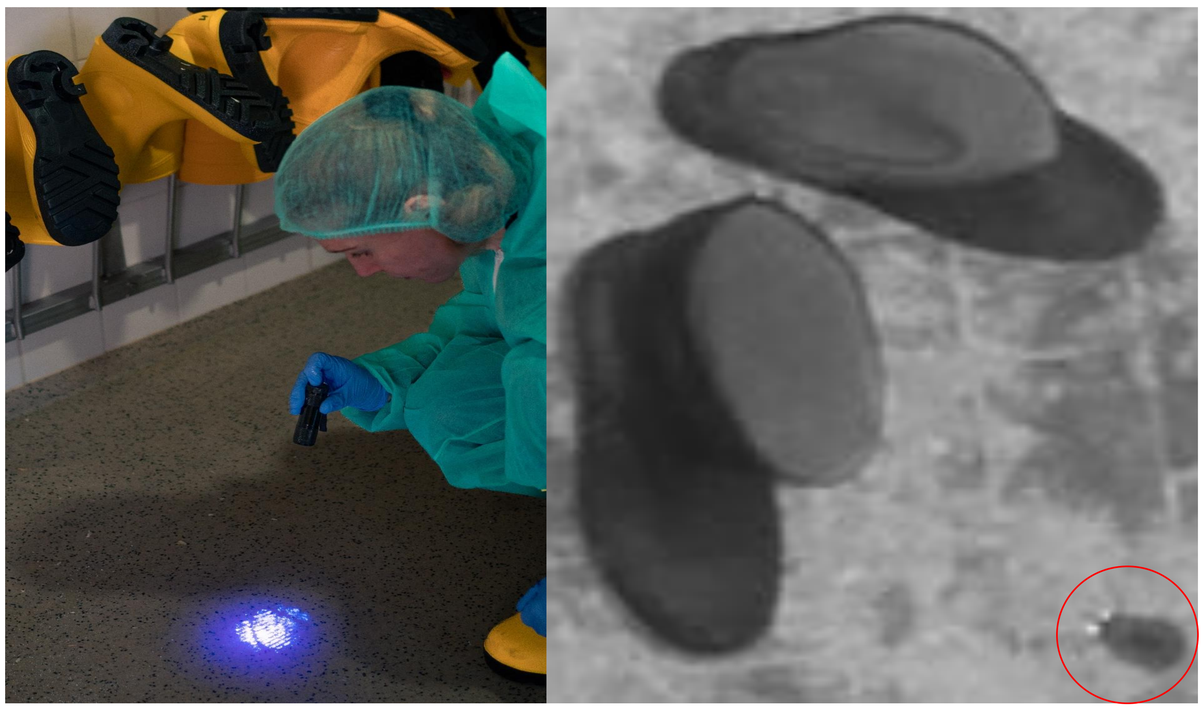
Fluorescent gels, powders or coloured dyes can be applied outside of a farm, e.g. near doors, holes, cracks or crevices, on roofs, in rain gutters and at ventilation inlets. A simple UV (black)-flashlight can reveal where fluorescent traces have entered the farm, and their shapes (e.g. footsteps, wheel tracks, rodent feet, illuminating beetles or feathers, water staining) can uncover the source. They can also be used inside farms, e.g. in hygiene locks to show whether the 'dirt' remains in the 'dirty 'zone and not in the 'clean' zone.

Cameras

Wild-trap cameras around farm buildings or in free-range areas can show wild birds, wild mammals, or pet animals, roaming around and they may even capture them entering the farm. It may reveal waterfowl at night-time in the range, potentially contaminating it with infected faeces. Video surveillance can also be used to monitor behaviour of people in the hygiene lock, or to reveal weaknesses in procedures used by truck drivers bringing or collecting materials or products (e.g. eggs from laying hen farms).

Practical tips

- Before use, ensure that fluorescent markers are approved by local (food safety) authorities and/or quality system regulations for use around production animals. Most rodent detection products are allowed. All people who may appear in video surveillance footage should be informed beforehand. Other privacy-related regulations, such as avoiding unnecessary recording of potentially sensitive images and timely deletion of footage, may also apply.
- Farmers can use these tools to close potential entry routes, improve biosecurity protocols, train farm workers and make the farm surroundings less attractive or accessible for birds and mammals.



Conclusions

Fluorescent tools and cameras can reveal previously unknown potential routes of pathogen transmission. The application of these tools can be a valuable addition to other biosecurity assessment tools as they:

- help to reveal farm-specific weak points
- aid in the training of farm workers

Before use, ensure that only allowed substances will be used around your animals and abide by privacy regulations.

www.biosecure.eu

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