ORVIA GROUP NEWS

TRANSMITTER :
Orvia Communications Department

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INNOVATION

ORVIA IS A FORERUNNER IN SECURING ITS SELECTION FACILITIES AGAINST HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)

“A SIGNIFICANT EFFECTIVENESS OF THE SYSTEM”

The process of securing our Selection facilities started a few months ago and was recently completed with the installation of a unique and innovative device of air treatment, which has gained a particular relevance today...

As a matter of fact, this device filters the air entering the building and then disinfects it by UV-C radiation. It is the combination of these two actions that makes this device unique. Through **photocatalysis**, it kills most viruses and bacteria that could be air-borne.

This equipment named CID'R 18 by its designer (Systel company and they have also integrated the technology of Calistair company), has been the subject of study in a test bench on the effectiveness of the module in "one pass" **against the H7N1 avian influenza virus.**
This analysis was conducted by **VirexpR**, a Lyon-based company in their **BSL-3** (Biosafety Level 3) laboratory a few days ago.

The result shows "*a significant effectiveness of the system*", according to the words used by the supervisor of the test and the director of **VirexPR**, a laboratory mandated by **Systel**.
This performance was also quantified: **the study shows that 98.79% of the infectious virus particles were rendered inactive** (i.e., their infectious potential was neutralized) after passing through the module, under the experimental conditions of the test.

CONDITIONS FOR THE TEST

The tests were performed on the H7N1* virus (Influenza A/Turkey/Italy/977/1999 strain), "*which behaves very similarly to the Influenza A virus subtype H5N1*", says the test supervisor.

A very high concentration of infectious viral particles was generated within the "one pass" (or "air stream") test bed with **700,000 viral particles/milliliter of air** (7.00.105/mL). This high concentration, well above that which can be found under normal conditions was intended to demonstrate the high performance of the system.

**The H5N1 virus, due to its highly pathogenic properties, requires specific authorizations.*

Test bench or airstream ©VirexpR

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TECHNICAL DATA OF THE MODULE

Technology: windbreak + G4 filter + 2 photocatalytic reactors

Operating flow rate: 2000 m3/h

Running time: 10 minutes

PROCEDURE OF THE TEST

The analysis was carried out in 2 steps:

TEST PARAMETERS

The module was tested in a one pass* air stream according to a protocol adapted from the ISO standard 15714:2019

**"One pass" and not in closed circuit, in order to be as similar as possible to a real use: air inflow - circulation within the building - air outflow.*

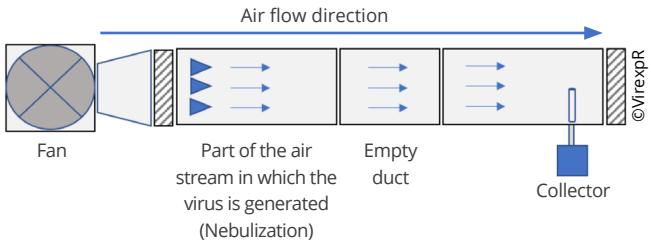
STEP 1

Three passages of air containing the viral particles that lasted 10 minutes each were carried out without the treatment module, to validate the experimental conditions of the test and to determine a standard value which will serve as a basis for the comparison of the results obtained after the tests of the module integrated in the air stream.

3 TEST CYCLES WITHOUT THE MODULE

(Positive control)

- Switching on the fan,
- Generation of a nebulized H7N1 influenza virus,
- Cyclonic suction and collection of residual infectious viruses in section 3 of the test bench,
- Titration* of infectious viral particles by DICT50 in a permissive cell system.

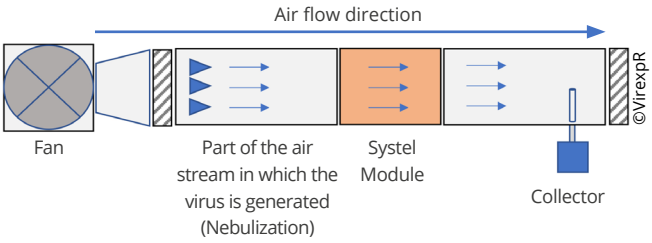


STEP 2

Three passages of air containing the viral particles that lasted 10 minutes each were performed with the air treatment module.

3 TEST CYCLES WITH THE SYSTEL MODULE

- Switching on the fan,
- **Turning on the module,**
- Generation of a nebulized H7N1 influenza virus,
- Cyclonic suction and collection of residual infectious viruses in section 3 of the test bench,
- Titration* of infectious viral particles by DICT50 in a permissive cell system.



**Infectious titration by the DICT50 method.*
The infectious titration determines the infectious dose of virus on cells.

TESTS RESULTS

Upon completion of the analysis carried out with and without the air treatment module, a comparison of the average results obtained indicates that the infectious (i.e., contaminating) property of 98.79% of the nebulized viral particles was inactivated.

TO SUM UP...

Ensuring the security of our selection buildings to provide our customers with the best possible service remains our priority. Orvia's decision to invest in a unique technology for the treatment of incoming air by filtration and disinfection illustrates its ability to innovate and to play a pioneering role in the use of new technical solutions.

This solution is a major asset in the fight against HPAI and an undeniable tool that perfectly complements all the protection measures already in place within the Orvia Group, such as biosecurity protocols, the prevention of sanitary risks and, more extensively, the long-awaited implementation of vaccination.

A new investment and deployment campaign for this air treatment security system is currently in progress at some of our major sites: four additional facilities will be equipped before the end of the year.

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