ASSESSMENT OF FUNGI BURDEN IN A PROCESS ROOM

Lyven – Soufflet Group

/ CONTEXT

LYVEN is specialized in the **production of enzymes from fungal microorganisms** by Solid State Fermentation (SSF). LYVEN has developed an original SSF process which allows to ferment on thick layers in perfectly controlled and monitored fermentors. Then, enzymes are extracted from the fermented medium to obtain **specific enzymatic concentrates**. LYVEN enzymes are used worldwide in bakery industries, feed, brewery, wine industries...

In order to evaluate the efficiency of non-stop decontamination processes in-site, Coriolis µ and an impaction air sampler were compared to assess the fungi burden in a specific room before and after the non-stop decontamination process.

/ MATERIALS

- Coriolis µ, sterile cones, 15mL of sterile collection liquid (Bertin Technologies, Ref.05237-1-202).
- Impaction air sampler, PDA agar plate.

/ PROTOCOL

- Coriolis µ: 300L/min, 5 min sampling.
- Impaction air sampler: 100 L/min, 5 or 10 min sampling.
- Analysis:
  - Coriolis samples were diluted before spreading 0.1mL onto PDA plates.
  - All agar plates are incubated at +30°C

/ RESULTS

The impaction air sampler didn't allow to evaluate the reduction rate of the non-stop decontamination processes: the agar plates were saturated at T0.

Thanks to the dilution of the liquid sample from the Coriolis air sampler, it was possible to have an accurate result at T0 and after the decontamination process. The reduction rate calculated after Coriolis µ sampling was reported on the table 1.

CFU/m3	*Aspergillus niger N°1*	*Penicillium*	*Aspergillus niger N°2*
Reduction rate (%) - Test 1	*-99,47*	*-99,30*	*-98,90*
Reduction rate (%) - Test 2	*-99,99*	-	-

Table 1 : Calculation of the reduction rate (%) from fungi concentration (CFU/m³) measured with Coriolis air sampler before and after one of the decontamination processes tested.

Figure 1 : Coriolis sampling on site.

/ CONCLUSION

Thanks to **Coriolis µ** it has been possible to evaluate the efficiency of non-stop decontamination processes in-site. The flexibility of Coriolis sampling is very appreciated.

Coriolis µ is fully adapted to industrial plants where microorganisms like fungi are used in the manufacturing process leading to potential high burden area.

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