

Implementing an Effective SOPs for *Aspergillus spp* isolated from Fish

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Fish culture has now become commercially an important industry worldwide specially Egypt. Fungal infections cause losses of freshwater fish and their eggs both in wild and commercial fish farms where as all life stages of fish might be affected by the fungi resulting in drastic impact on fish production. Many fungi cause fish diseases such as; *Aspergillus spp.* out of which 40 have been reported causing human and fish infections. Aspergillosis in human might be very dangerous causing bronchopulmonary, rhinitis, ostomycosis, aspergilloma, osteomyelitis or bone erosion. Invasive infections were associated with high morbidity and mortality rates.

From the aforementioned this was a trial to implement and comply with an effective SOP for *Aspergillus* isolation and identification from fish.

METHODS:

The SOP included:

- 1 - An obtained material safety data sheet was well understood.
- 2 - Characterizing risk assessment through the different routes of infection as inhalation of air contaminated with fungus spores, through skin abrasions, through eye infection from splashes.
- 3 - *Aspergillus* classified in risk group 2 thus all procedures of isolation and identification were conducted in containment level 2 including appropriate PPE as lab coat, 2 different gloves, goggles and N95 mask.
- 4 - Isolation of fungi was done in Laminar flow air cabinet Level 2 (CL2), the use of high-efficiency particulate air (HEPA) filters, frequent air exchanges; and positive pressure ventilation were used to avoid contamination for pathogenic molds and recommended to limit nosocomial exposure.
- 5 -The glassware (containing media and distilled water covered with aluminum foil), test tubes and vials (cotton plugged) were autoclaved at 121 °C at 15 psi for 15 minutes.
- 6- Determining the incubation period (few days - 3 months), suitable disinfectants as 0.5 % alkaline solution of glutaraldehyde or sodium hypochlorite or cupric sulphate.
- 7 - Scenario for immediate applicable actions were put in case of accidental incident happens.
- 8 - First aid or initial therapy was suggested to be with Voriconazole or Amphotericin B deoxycholate.
- 9- Disposable of Fish were put in autoclavable bag, poured the disinfectant then passed to the incinerator. All equipments used or that in contact with the fungi were disinfected by autoclave.
- 10 - Finally the Title Page of the SOP contained the authorized lab analysts: their names, mobiles, emails, signatures and work schedule.

Recommendation: the necessity of an efficient applicable well understood SOP for every vital activity upgrades the biosafety level, protect human, fish and environment and minimize hazard to the utmost.