

Effects of Different Culture Media on the Morphology and Growth of the Soil Fungus, *Aspergillus longivesica*

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Structured Abstract

Background: Different fungi have varying nutritional requirements. The composition of the culture media also can significantly enhance the production of secondary metabolites which are important for pharmaceutical and industrial applications. This study investigates the effects of different culture media on the morphology and growth rate of *Aspergillus longivesica*. The findings will provide valuable knowledge of the optimal medium for *A. longivesica* cultivation which can further connect to the research on secondary metabolite production.

Methods: *Aspergillus longivesica* was grown on Sabouraud dextrose agar (SDA) and Czapek's Dox Agar (CDA) and incubated at 28°C for 14 days. The difference in morphology of the *Penicillium* sp. on both media was observed macroscopically and microscopically. The macroscopic analyses included color, and texture, while the microscopic examinations focused on the conidiophores, conidia, and other hyphal structures.

Results: It was observed that *A. longivesica* exhibited a slower growth rate on CDA than on SDA. The colonies on SDA had greyish green with white mycelium (front plate) and the reverse plate was deep brown. In contrast, the colonies on CDA appeared white on both the front and reverse plate views. As the colony aged, they developed greyish spores, a slightly dark colony (reverse plate), and a granular texture. Furthermore, this fungus showed poor sporulation on CDA compared to SDA. The microscopic examination of *A. longivesica* showed the conidiophores terminate in a vesicle covered with a single palisade-like layer of phialides. The columnar conidial head was formed with the vesicle, phialides and globose conidia which germinated by the long conidiophores. The conidiophore of *A. longivesica* on CDA appeared in a spheroid shape. The results indicated that phialide of *A. longivesica* seems to appear larger and wider on SDA compared to CDA.

Conclusion: In conclusion, this study indicated that *A. longivesica* demonstrated different morphology and growth rates with different culture media. Therefore, the types of cultural media used influenced the growth rate of *A. longivesica*. SDA facilitated the growth of *A. longivesica* faster than CDA due to their different composition.

Keywords: *Aspergillus longivesica*, Czapek's Dox Agar, Fungi morphology, Sabouraud Dextrose Agar.

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