YCM Microbiology Research Center
From Atomistic to Holistic
Empower Micro Compostition to Make Marco Sequel

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Serial contamination on textile

I、Introduction

The characteristics of mold are small and light. Under suitable environmental conditions, it will germinate and grow. The reproduction rate is fast and it's also large in number. The life cycle of most molds can be divided into four main stages: spore germination, growth, reproduction, and spread. Among them, the reproduction stage is the stage where a large number of mold spores erupt. The subsequent spread leads to adjacent objects being exposed to a large number of mold spores. As a result, the risk of contamination by incoming spores increases. Mold spores are susceptible to slight vibrations, contact, adhesion, or movement through the air, they easily scatter in it, and eventually settle on objects, creating a potential for mold risk. Serial contamination occurs when the same mold contaminates the same object and produces mold colonies with different life cycles.

In view of YCM Microbiology Research Center's insight and expertise on mold growth characteristics, Brand L cooperated with YCM, hoping to understand whether the spots on its textile products were mold, and to find out the species, pollution sources and patterns that caused it.

II、Results and discussion

After testing in accordance with YCM in-house methodology, it was found that the spots on the textile (Fig. 1) were indeed caused by a serial contamination of mold. After analysis and identification, it was determined that the mold was *Aspergillus chevalieri*, a common species that causes mold in textiles, and the mold on the sample had been growing for at least 3-4 weeks before the sample was received.

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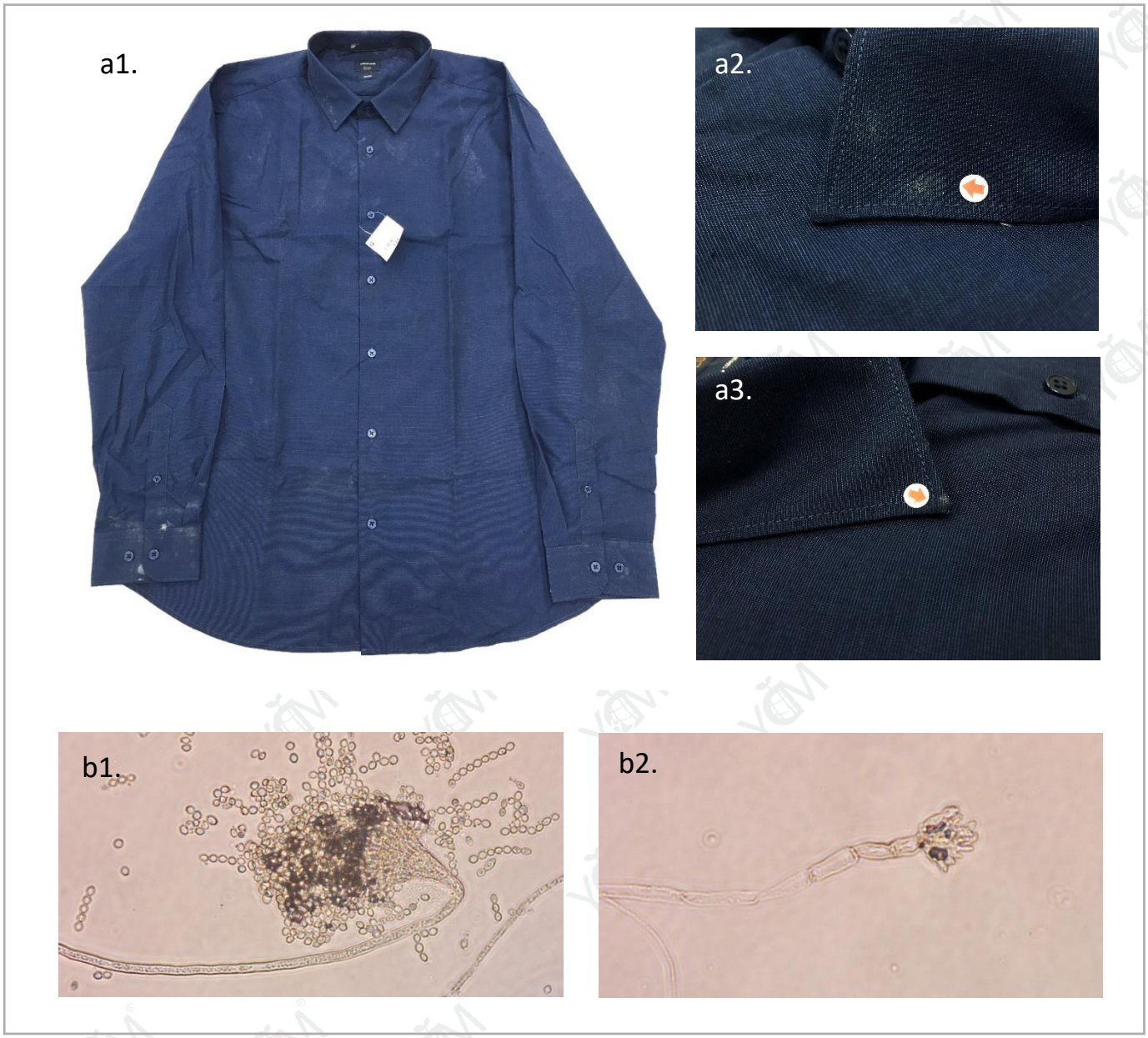

Fig 1. Contamination spots at different life cycles on the same textile

a1 - a3. The moldy textile of Brand L; b1 - b2. Mold contamination at different life cycles.

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III、Conclusion

YCM Microbiology Research Center is capable of clearly analyzing the growth patterns and growth stages of different mold species through its big database, and traces the causes of mold based on the experience of its seasoned mold prevention consultants, so as to provide customers with complete and clear mold investigation and consultancy services. After testing and analyzing this case, it was found that there were contamination spots of different sizes caused by *Aspergillus chevalieri* (Fig. 2) on the same textile. These pollution spots of different sizes are in different life cycles, containing newly mature spores, alongside aged hyphae. According to the growth state, characteristics and other factors of mold on textiles, it is understood that it is caused by serial contamination, and the cause of mold in this textile can be traced back to help Brand L improve product quality control methods and prevent mold contamination, while also improving YCM's professional reputation.

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Fig 2. The most suitable growth conditions for *Aspergillus chevalieri* are found at temperatures of 25-35°C and relative humidity above 60%. Among its most suitable growth areas, we find grain, textile, food, paper and building materials.

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