



Research on mold prevention strategy of the coating fabric

I 、 Introduction

In recent years, environmental awareness has risen, and many countries have advocated an environmentally friendly and sustainable supply chain. In the past, brands used desiccants to dehumidify products and prevent mold. The material of desiccants itself will become waste, putting a burden on the environment. The mission of YCM is to only do things that contribute to the environment.

Recently, YCM and Brand D have started cooperate in product preservation strategy of environmental protection and anti-mold measures. This way, products can achieve the best defense performance, while avoiding harmful chemical reactions when desiccants come into contact with the environment, resulting in

potential product deterioration or dyeing.

During transportation, the product is usually in a high temperature and high humidity environment. Brand D has recently developed a special fabric as a material for functional clothing. Since the mold risk of the new material is not clear yet, YCM was asked to conduct relevant research on the protective effect of desiccants on this material and whether it produces chemical variation.

II 、 Results and discussion

After several days of research, it was found that the control group a1-a3 (with desiccant) had obvious mold spots, but no mold was observed in the special treatment group b1-b3 (YCM customized anti-mold method), as shown in Fig 1.

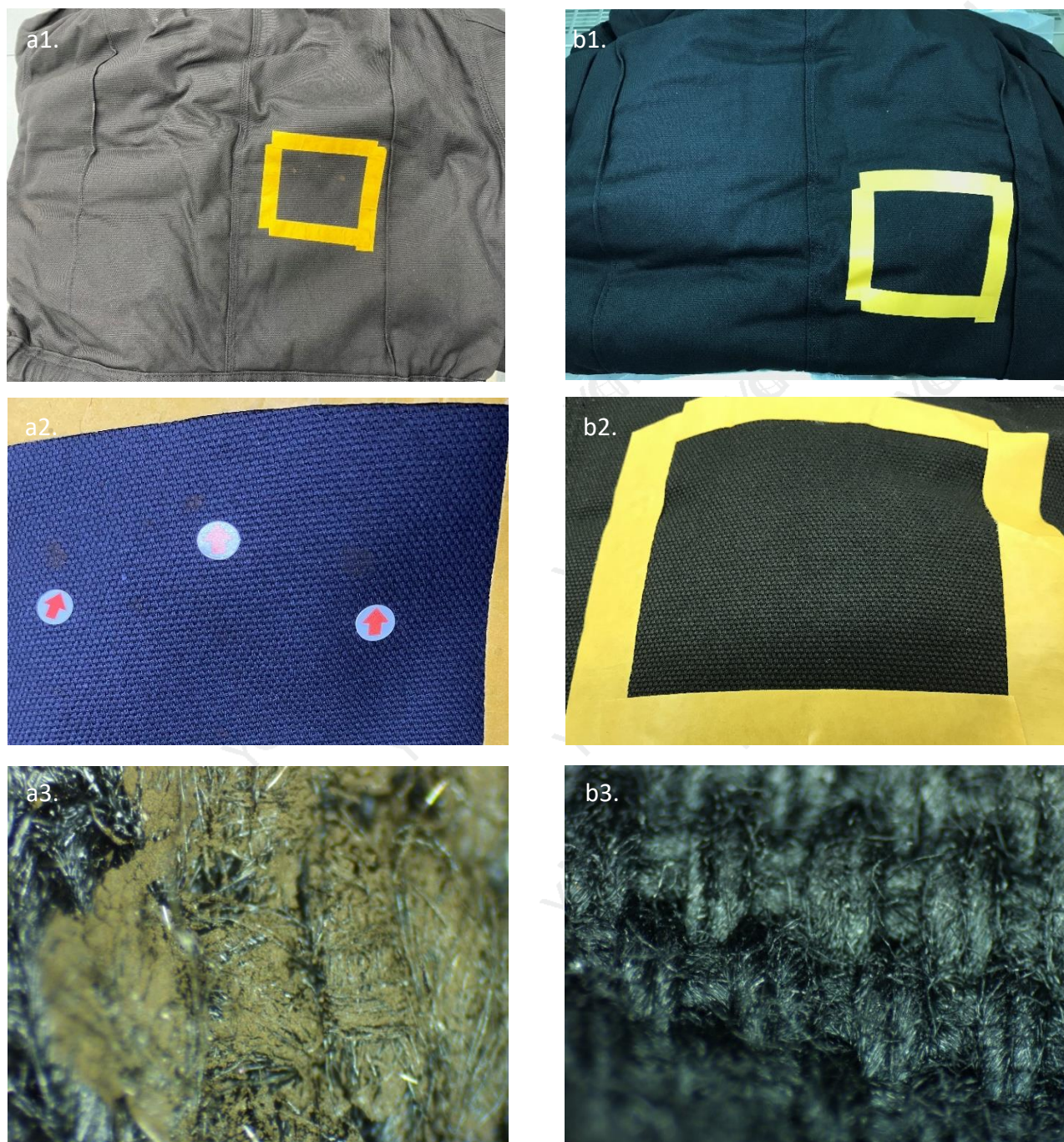


Fig 1. Special fabrics tested after several days

a1-a3. Control group: obvious spot mold can be observed, and the sample moisture content is about 11%;

b1-b3. Special treatment group: no mold growth, the sample moisture content is about 13%.

* Photos have been discolored for better visibility



III 、 Conclusion

According to the analysis performed by YCM Microbiology Research Center, the new material of Brand D has nutrient source for specific molds such as *Aspergillus* sp. (Fig. 2) and *Penicillium* sp. (Fig. 3), and it is favorable to let mold spores adhere to the product, thereby causing damage to the product. Therefore, many uncontrollable environmental conditions contribute to the growth of molds during product storage or transportation. In addition, according to the years of research experience of the YCM Microbiology Research Center, the dehumidifying properties of the desiccant may fail under certain conditions, so the anti-mold effect is limited. Therefore, many uncontrollable environmental conditions contribute to mold growth during product storage or transportation.

In this study, it was found that the surface of the Brand D's new material has a special coating, which can reduce the penetration of water into it, but under the simulation of high temperature and high humidity environment, the material still contained 11-13% moisture content, so the material itself still has properties suitable for mold growth.

Eventually, YCM provided a suitable environment-friendly and anti-mold method for Brand D. These reduce the use of desiccant in production, preservation during transportation, and sales, all while effectively inhibiting mold growth. It not only adds one more successful case to the YCM Microbiology Research Center, but also enables both parties to improve the social responsibility of protecting the environment.

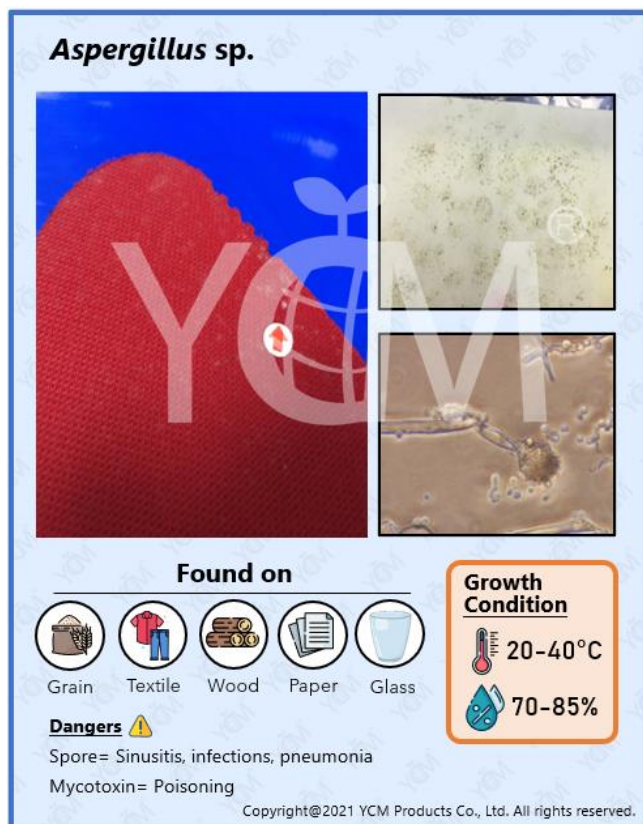


Fig 2. The most suitable growth conditions for *Aspergillus sp.* are found at temperatures of 20-40°C and a relative humidity of 70-85%. Among its most suitable growth areas, we find grain, textile, wood, paper and glass.

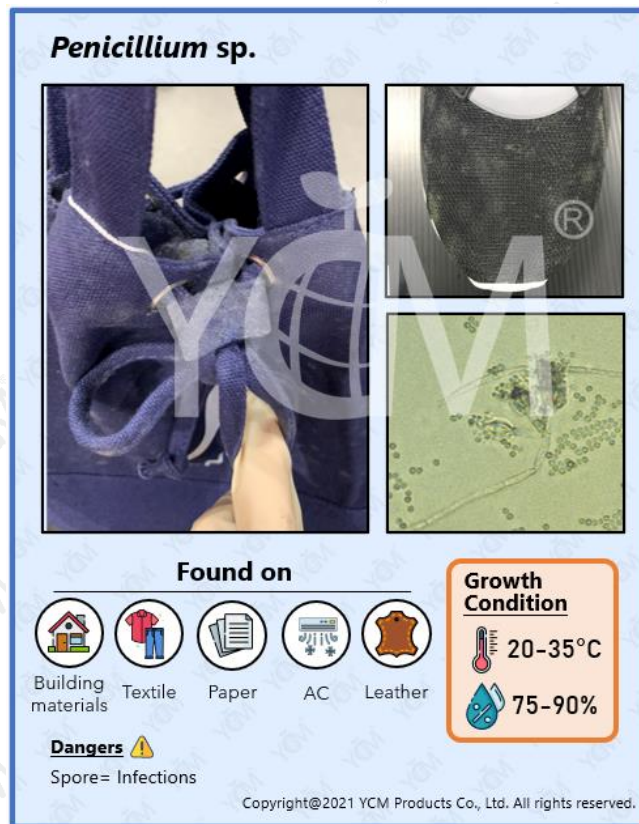


Fig 3. The most suitable growth conditions for *Penicillium sp.* are found at temperatures of 20-35°C and a relative humidity 75-90%. Among its most suitable growth areas, we find building materials, textile, paper, AC and leather.