

## Yellowing of textiles

### I - Introduction

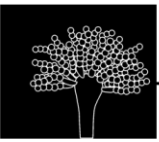
Brands or factories often encounter yellowing phenomena such as color spots or stains in textile products. However, there are many factors that can cause this kind of yellowing. Among them, the most common source deriving from "microbiological factors". Yellowing caused by microorganisms can usually be divided into mold or bacteria contamination. When textiles are polluted by mold, the pigments of the mold itself and the chemicals released will cause the textile to change its color. Depending on the type of mold and its characteristics, it will also produce different types of discoloration, not necessarily just yellow. Most cases of yellowing are caused by bacteria.

There are many opportunities for textiles to be contaminated with bacteria during the production process, including but not limited to the manufacturing process, inspection or transportation stages. For example, if the worker's hands are sweaty, the protein substances and bacteria in the sweat will remain on the textiles. If not thoroughly

cleaned in time, it will lead to the development of yellow stains originated from the combination of multiple effects of sunlight, air, moisture, and microorganisms.

Other nonmicrobiological factors of yellowing may be contamination of dyes, oil stains or rusty substances during the production process, or in the washing process of textiles before shipping. If the amount of detergent is not used properly, this can also cause pigmentation. Lastly, the action of chemical additives or the degradation of fibers can also produce yellowing.

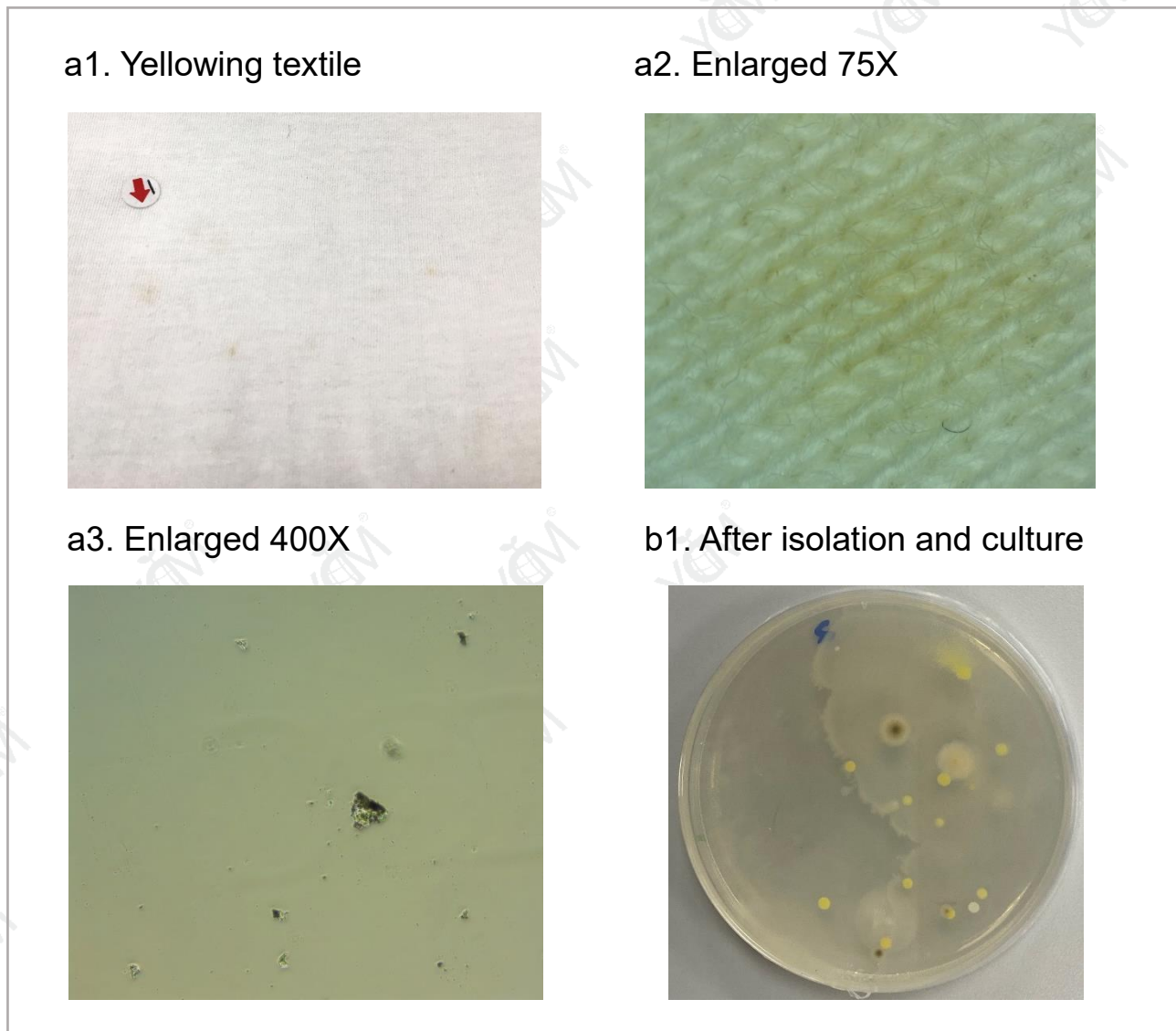
As mentioned above, there are many factors that can cause the yellowing of textiles, each of which has a corresponding solution. Therefore, the cause of this phenomenon should be determined prior to deal with the yellowed textiles. The technology of YCM Microbiology Research Center (MRC) can identify the cause of yellowing. It has also provided technical services and respective suggestions for Brand G to help it solve its problem with yellowing.



## II · Result

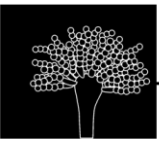
Yellow spots could be observed on Brand G textiles, which were later determined to

be caused by bacteria after YCM MRC's testing and analysis (Fig. 1).



**Fig 1. Textile sent by Brand G for Inspection**

a1 – a3. Textiles with yellow spots were observed under a microscope at different magnifications, and no mold was detected; b1. After the sample was isolated and cultured, the growth of various bacteria was observed.



### III 、 Conclusion

Through the professional technical services of the YCM MRC, it is possible to determine whether the yellowing of textiles is caused by microorganisms, and provide respective corrective suggestions.

Taking the successful case of Brand G, it can be observed that the unexpected yellowing of its textiles was caused by bacteria. YCM provides unrivaled technology to allow customers the prevention of this kind of yellowing phenomenon caused by bacteria.

Providing timely advice and support for customers, avoiding future concerns and further cost losses.

If your product has problems such as yellowing or discoloration, you may consider the use of YCM MRC's technical services to find out the root cause of your problem. Early prevention can reduce cost loss and carbon emissions originating from secondary manufacturing rounds, achieving a more sustainable operation.