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Singapore extracts antimicrobial compounds from seeds

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The natural antimicrobial compound developed by NTU scientists contains powerful antioxidants found in seeds Scientists from Nanyang Technological University, Singapore (NTU Singapore) have developed a sustainable and green way to extract high-quality antimicrobial compounds from seeds.   This new antimicrobial compound is used by global apparel and textiles manufacturer Ghim Li Group (GLG) as a fabric finishing in their reusable masks sold locally and overseas.   The masks were distributed to Singaporeans and permanent residents last month as part of the Government’s strategy to fight the COVID-19 pandemic. The natural antimicrobial compound developed by NTU scientists contains powerful antioxidants found in seeds. In lab tests done at NTU, the compound killed 99 per cent of harmful bacteria by disrupting their cell walls.   Obtaining high-value ingredients from organic parts discarded during food processing, such as stems, seeds and husks, is an innovative way that can contribute towards a sustainable circular food economy and a key research focus of NTU’s Food Science and Technology Programme.   Using green processes to obtain these ingredients will also be more sustainable, as typical antimicrobial solutions require the use of harsh chemicals such as solvents or use ions obtained from various metals such as silver.   In contrast, Professor William Chen, Director of NTU’s Food Science and Technology Programme, and his team used ball-milling, known as solid-state synthesis, with clean water processes to extract the antimicrobial compounds from the discarded husks of seeds without the need for harsh chemicals.   As the natural compound is considered non-toxic for humans, it has huge potential to be applied in other types of products, such as personal protective equipment, sports apparel, paints, and disinfectants.   With the new technology, GLG has plans to capture new business opportunities, expanding their product offerings to masks and even medical uniforms, beyond the traditional apparel products.   Products from GLG are distributed worldwide, to a range of USA and Europe specialty store retailers, major department stores and supermarket chains



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