

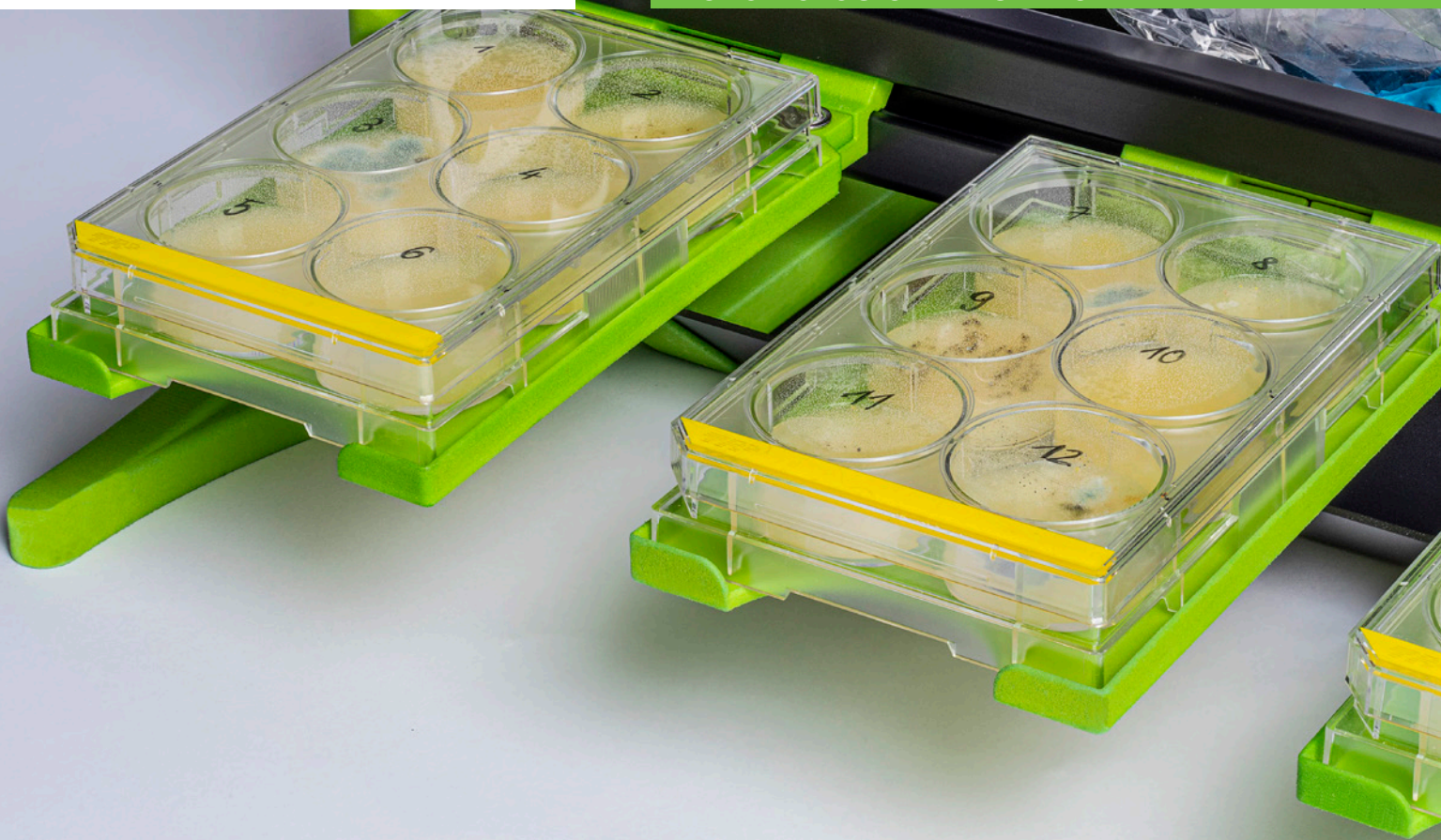


BETTER BASICS
LABORBEDARF

INFORMATION ABOUT

30% EFFICIENCY IMPROVEMENT IN

MICROBIOLOGICAL RESEARCH



30% INCREASED EFFICIENCY USING

THE SMARTRACK® IN MICROBIOLOGICAL RESEARCH

The aim of this study was to quantify the potential efficiency increase in the cultivation of bacteria on maize flour-based agar-agar media by integrating the SmartRack® system. The process was divided into three main stages: Preparation, execution and post-processing, with a direct comparison of the results with and without the use of the SmartRack®. It is estimated that an increase in efficiency of up to 30% was achieved by using the SmartRack® system.





Petri plates in a SmartRack® classic mini

Abstract

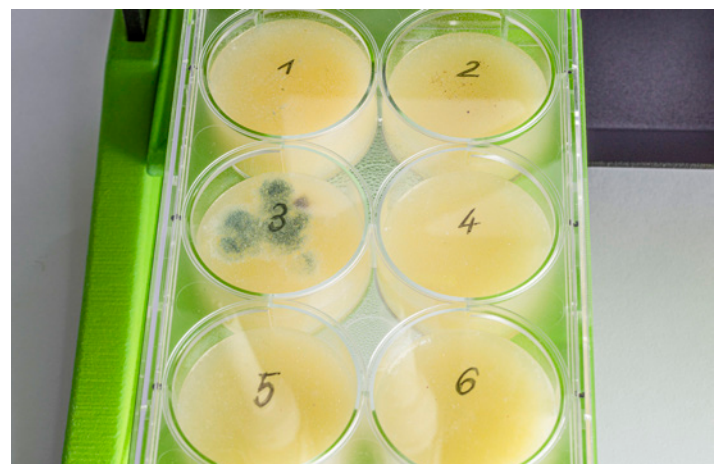
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An experimental simulation for the cultivation of bacteria

The following experiment compares the efficiency of performing bacterial cultivation on cornmeal-based agar media with and without the use of the SmartRack® system. The cultivation of micro-organisms plays a fundamental role in various fields. In universities and research institutes, it enables a deeper understanding of microbiological processes and promotes the development of new knowledge. At the same time, cultivation is essential in pharmaceutical companies, government agencies, hospitals, biotechnology companies, agricultural research facilities and international research centres to drive innovative products, medical therapies, environmental protection strategies and global health solutions.

Methodology

The SmartRack® is an innovative laboratory organisation tool. It makes laboratory processes more efficient, ergonomic and standardised. In microbiological research, maintaining an organised and sterile environment is critical to the accuracy and reliability of experimental results. Traditional laboratory layouts often result in crowded workspaces, increased risk of contamination and inefficient workflows. The SmartRack® system, with its modular design and ease of sterilisation, offers a potential solution to these challenges.



Petri plates in a SmartRack® classic mini



Petri plates in a SmartRack® classic mini - well plate holder in a slotted rail (close-up)

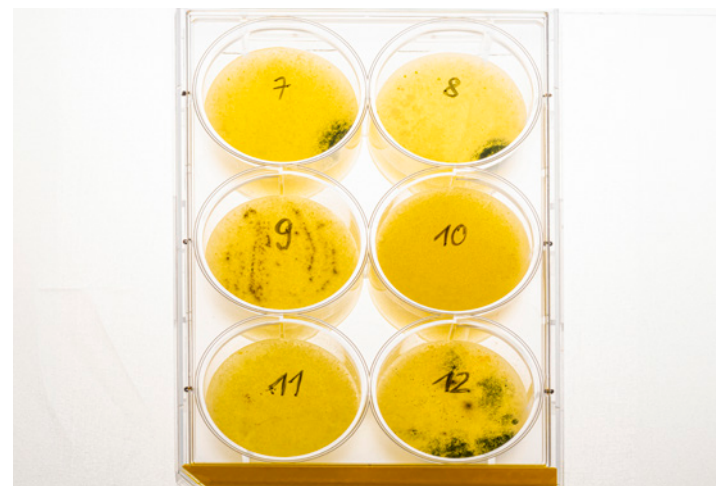
Comparison of procedures with and without SmartRack®

With SmartRack®, the preparation phase was much more efficient as all the necessary materials (cornmeal, spatula, graduated cylinder, agar, culture plates, pipettes, sugar solution) were organised and readily available in the SmartRack®. The ergonomic design made pouring media much easier, reducing physical strain and strain-related illnesses. Storing swabs in the SmartRack® storage box minimised the risk of sample mix-ups and contamination during the procedure. The modular components were easily autoclaved in the post-experiment cleaning area after the experiment and prepared for future use with minimal downtime.

The absence of SmartRack® resulted in increased searching and walking around the lab to locate materials and bring them to the workstation. The lab space showed a lack of organisation in terms of where materials and equipment were stored. The work area was crowded and offered less protection against spillage and sample exchange. Manual pouring of culture media proved to be less ergonomic. Sample organisation was challenging and placed a greater burden on laboratory staff.

Conclusion

The implementation of the SmartRack® system in microbiology experiments improves laboratory efficiency and ergonomics while reducing contamination and sample loss. By standardising workflows and improving organisation, the SmartRack® system not only helps to maintain a sterile environment, but also contributes to more reliable and reproducible research results. This study underlines the importance of innovative laboratory organisation for progress in microbiology and concludes that a 30% increase in efficiency is possible through the use of SmartRack®.



Close-up: Well plate with Petri dishes and bacteria cultivation



Photo: Building of the Better Basics Laborbedarf GmbH in Dresden



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Marcus Heinze was born in Zittau and is now a partner and Head of Development at Better Basics Laborbedarf GmbH. He completed his studies in polymer chemistry at the TU Dresden with a doctorate in the field of mineralisable hydrogels. Today he is responsible for development at Better Basics Laborbedarf. The area of product development is dedicated to multidimensionally optimised component design, which combines the possibilities of various 3D printing processes with those of classic metal processing.

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Are you interested in our products or have any further questions?

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Our request to you

A product like our SmartRack® is only as good as its users. With our roots in the Leibniz Institute for Polymer Research Dresden, our company Better Basics Laborbedarf stands for the tradition of "Made in Germany" quality. We feel in multiple aspects committed to this quality label for German companies, which stands for high innovative strength. Even beyond our product catalog, the same applies for us at Better Basics: Just contact us if you have ideas for extensions or improvements or if you notice something in your daily laboratory routine that we should optimize right away.

We want to create the best possible working environment for you in the laboratory and we are grateful for any comments and inspiration. We can jointly shape the future of laboratory work by cooperating with scientists and researchers. Just like you, we're always looking for a way to make our world a little better every day.

Impress:

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