

Microbial production of natural pigment in shaker flasks

Magalhães, L., Zhou, M., Lamot, I., Raats, M., Meijer, J.

Project/Research Group: BBB&P

Contact information: m.zhou1@avans.nl; l.gomesdemagalhaes@student.avans.nl

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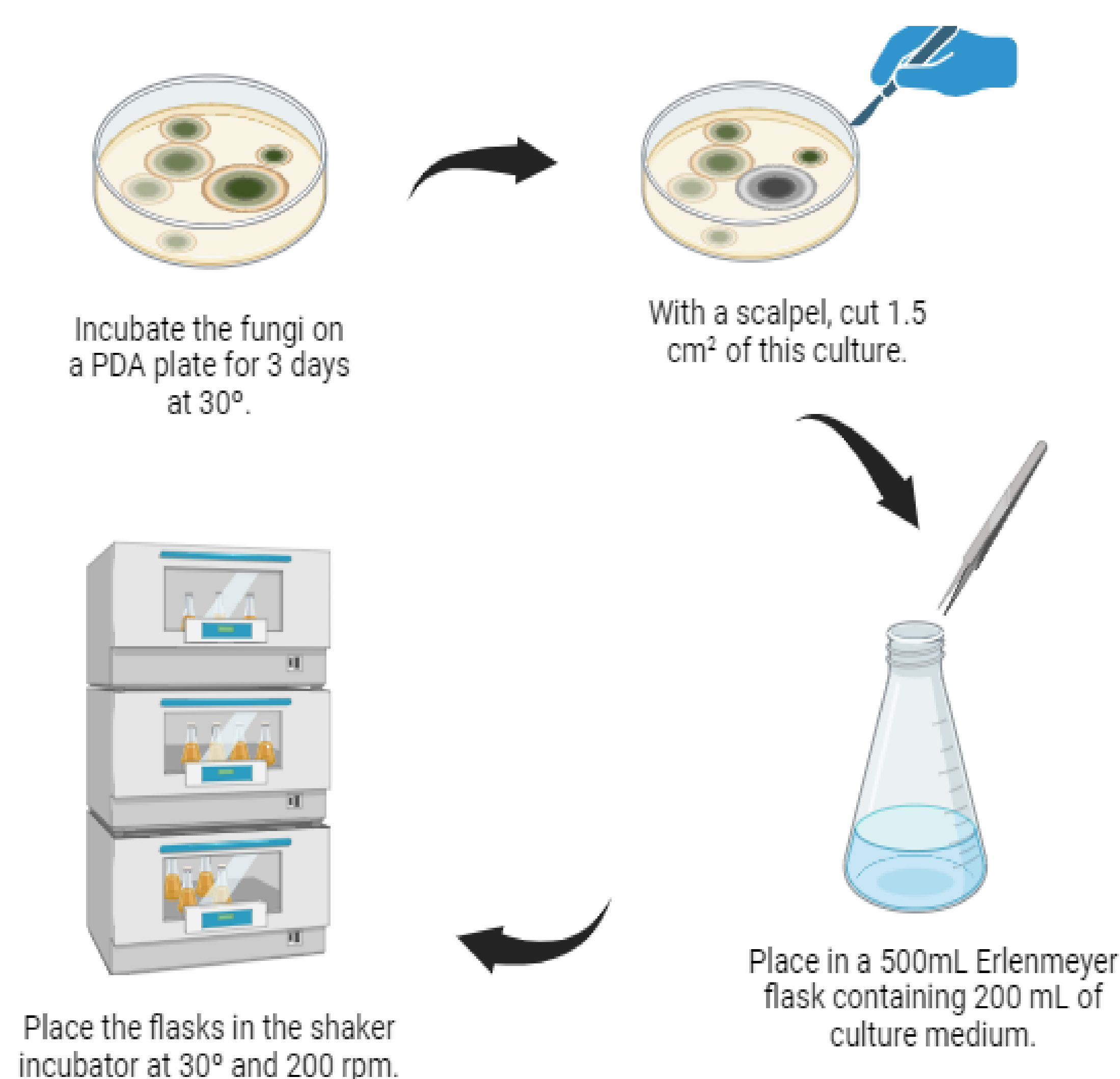


Universidade Federal
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Introduction

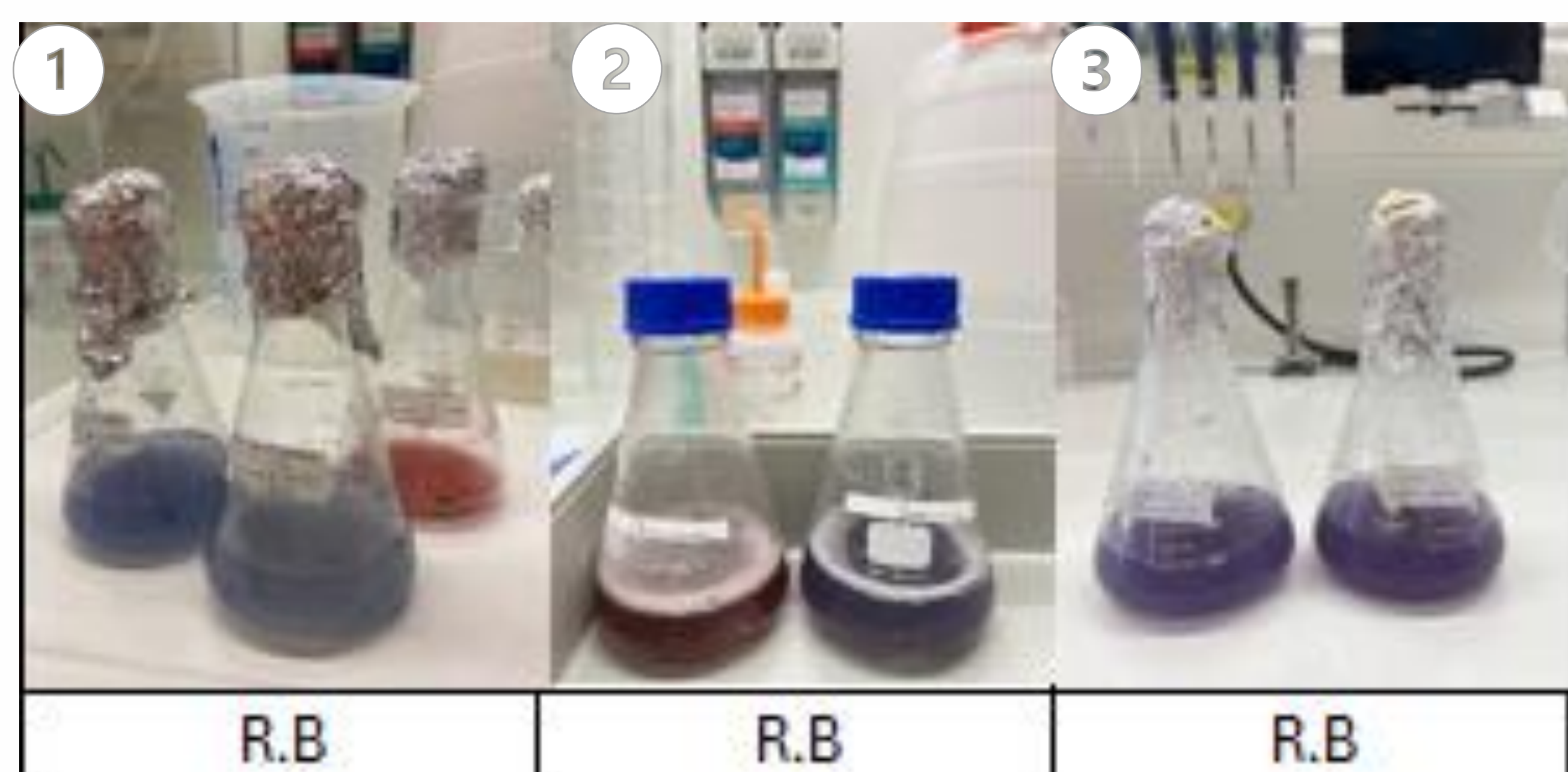
Filamentous fungi produce many primary and secondary metabolites. These metabolites have numerous properties, including the production of red, yellow, green or orange pigments. These pigments can even be more stable and eco-friendly than synthetic colorants. The goal of this research is the optimization of culture media in shaker flasks for the production of fungal pigments.

Methods

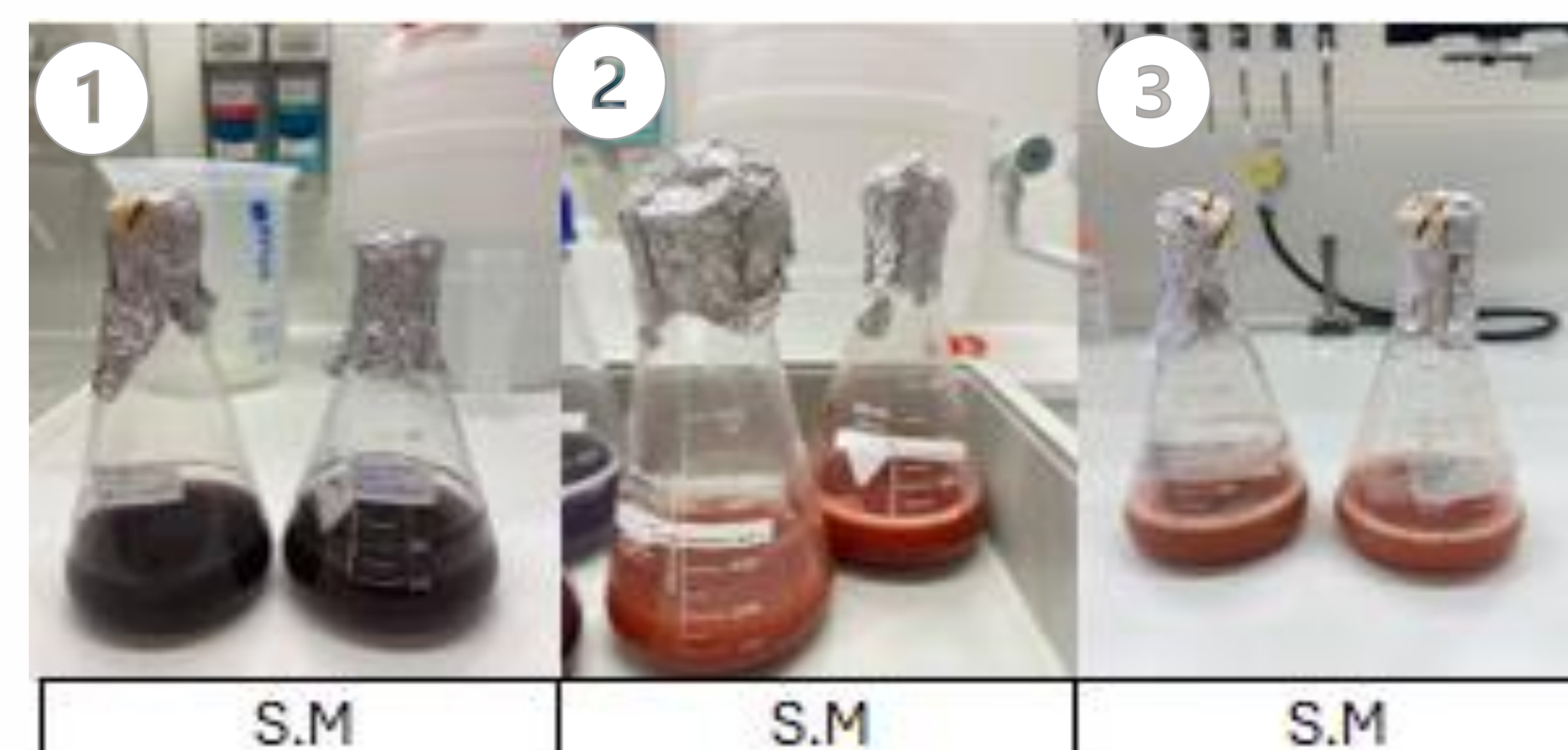


- 4 strains A, B, C and D of a filamentous fungi were tested.
- 4 types of medium were tested: R.B, S.M, P.B and M.B.
- Different temperatures and shaking speed were tested in a shaker incubator.

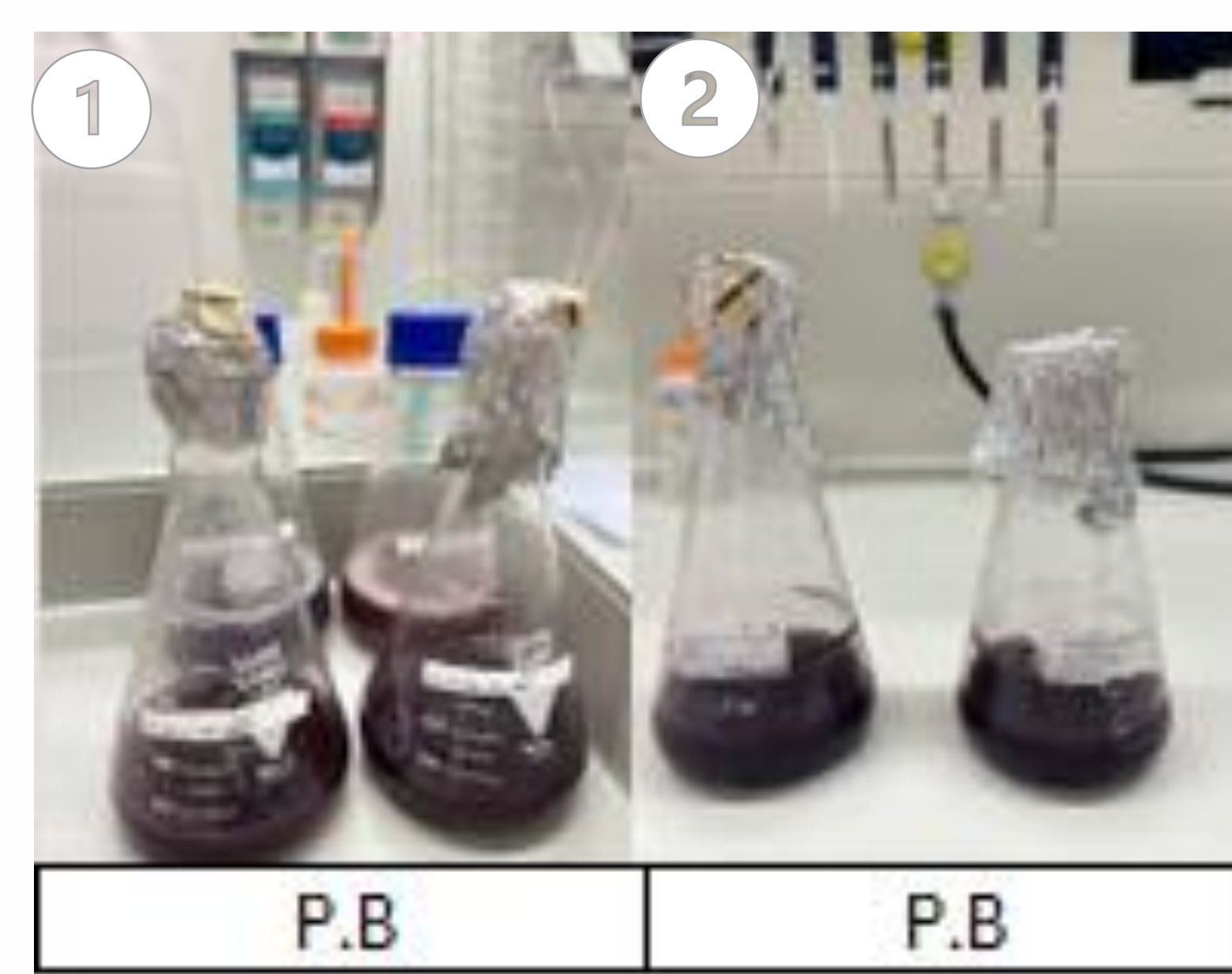
Results



Strain A pigment production in R.B medium after 7 days at 30°C and 200 rpm: first photo - dark purple color; second and third photos - red color.



Strain A pigment production in S.M medium after 7 days at 30°C and 200 rpm: first photo - dark purple color; second and third photos - red color.



Strain A pigment production in P.B medium after 7 days of inoculation at 30° and 200rpm. All the samples produced a dark purple color.



Strain A pigment production in M.B medium after 7 days of inoculation at 30° and 200 rpm. First photo - samples produced a light and dark purple color.

Conclusion

- Strain A performed better and all the results shown were with strain A.
- The ideal shaker incubator condition for the fungi to produce pigments was 30° and 200 rpm.

References

1. Takahashi, M., & Aoyagi, H. (2018). Practices of shake-flask culture and advances in monitoring CO₂ and O₂. Applied Microbiology and Biotechnology, 102.
2. Mustafa, H. K., Anwer, S. S., & Zrary, T. J. (2023). Influence of pH, agitation speed, and temperature on growth of fungi isolated from Koya, Iraq. Kuwait Journal of Science, 50(4).