

POLYMEER – Brewers spent grain as main by-product for development of novel, high-performance biobased polymers, polymer blends, and co-polymers.

Assunta Marrocchi

University of Perugia, Department of Chemistry, Biology and Biotechnology, via Elce di Sotto 8, 06123 Perugia (Italy)

e-mail: assunta.marrocchi@unipg.it

Bioplastics offer environmental benefits but currently make up only ~2% of global plastic production.¹ With global bioplastics production capacity expected to grow from 2.2 million to 6.3 million tonnes by 2027,² there's an urgent need to shift towards a circular, climate-neutral economy. This shift requires major investments and innovation across the plastics industry, particularly in developing bio-based, recyclable, and biodegradable bioplastics that meet high performance standards. The POLYMEER project aims to transform bioplastics by creating new bio-based polymers, copolymers, and polymer blends from brewers' spent grain (BSG), a major by-product of the brewing industry. BSG makes up 85% of brewery waste, with about 20 kilograms of BSG produced per 100 litres of beer.³ Globally, 40 million tonnes of BSG are generated each year, with Europe accounting for 8 million tonnes. POLYMEER seeks to unlock the potential of BSG to develop bioplastics specifically for areas where current options fall short, such as agriculture, packaging, and textiles for the automotive industry. The project focuses on creating innovative, sustainable bioplastics that are either recyclable or biodegradable, reducing environmental impact and advancing industry standards.

[1] World plastics production 2021, Plastics Europe, 2022. https://plasticseurope.org/wp-content/uploads/2022/10/PE-PLASTICS-THE-FACTS_V7-Tue_19-10-1.pdf

[2] Bioplastics market development update 2023, European Bioplastics, 2024. <https://www.european-bioplastics.org/market/>

[3] The Brewers of Europe. European Beer Trends, 2022 Edition. Available online: <https://brewersofeurope.org/site/index.php>

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