Beer and sustainable farming: How brewing waste can disinfect soil and increase yields

Despite the simplicity, beer brewing generates substantial amounts of by-products, including large amounts of spent grain, which are difficult and cumbersome to eliminate.

Given their composition, this waste actually can be used in many different applications, including pet food, cheap materials for the extraction of compounds for the food industry and component in biotech processes.

Now, a team from the Neiker Basque Institute for Agricultural Research and Development in Spain has found a new application for this product as the basis for a biodisinfestation treatment to be used in agriculture. The aim is to disinfect soils, protect soil microorganisms and increase crop yields.

Nematodes are a common parasite in soils, with some able to penetrate the plants’ root to lay their eggs. Not surprisingly, this damages the root and prevents the plant from absorbing nutrients effectively, leading to poor growth and low crop yields. However, after beer bagasse and rapeseed cake applications, the researchers noticed significantly less damage to the root. In addition, after just 12 months after the first applications, crop yields increased any around 15%, and the soil experienced a boost in healthy soil microbes, as demonstrated by a significantly higher soil respiration rate.

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