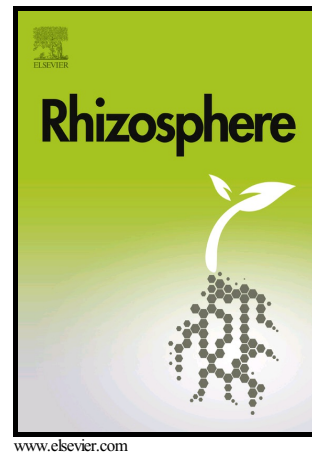


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1. Introduction

Soil microorganisms are essential to nutrient cycling and ecosystem functioning, however, little is known about the composition, temporal and spatial variabilities and ecological functions of soil bacteria (Daims et al., 2015). Soils are the ecosystems with the greatest biodiversity in our planet containing an estimated 1,000 Gbp of microbial genome sequences per gram of soil (Vogel et al., 2009). In comparison, the Human Genome project sequenced 3 Gbp (IHGNSC 2004). A study of the ocean microbiome generated a microbial reference catalogue of > 40 million mostly novel sequences from viruses, prokaryots and picoeukaryots (Sunagawa et

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