

Composting increases BRIS soil health and sustains rice production.

ABSTRACT

Beach ridges interspersed with swales (BRIS) soil (> 90% of sand) is unsuitable to produce rice due to its poor physical and chemical properties. In this study, we investigated the effects of compost on BRIS soil health in relation to rice production. We measured rice yield, yield parameters, chlorophyll content, relative water content (RWC), and soil pH. The tiller and panicle numbers, filled grains per panicle, rice yield, and straw yields were significantly lower in BRIS soil than in a mixture of compost and BRIS soil. On the other hand, plant heights, 1000 seeds weight, and unfilled grains per panicle were not significantly different. Adding compost to BRIS soil significantly increased chlorophyll content but not the RWC of leaves. The pH of BRIS soil was significantly increased by the application of compost which indicates an increase of BRIS soil health. These results suggest that addition of compost to BRIS soil might improve BRIS soil health and increase rice yield.

Keyword: Chlorophyll content; Relative water content; Soil pH.