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Short Communication

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***Flammulina velutipes* treatment of non-sterile tall wheat grass for enhancing biodegradability and methane production**

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Abstract

In this study fungal pretreatment of non-sterile tall wheat grass via the white rot fungi *Flammulina velutipes* was studied and the effect on biodegradability of lignocellulosic biomass and methane production, was evaluated. Degradation of lignin, cellulose, hemicellulose, and dry matter in non-sterile tall wheat grass during 28 days of fungal pretreatment using different inoculum ratio (0%–50%) and moisture content (MC) (45% MC, 65% MC, and 75% MC) were assessed via comparison to untreated biomass. Pretreatment with *F. velutipes* was most effective at 65% MC and 40% inoculum ratio, resulting in 22% lignin removal. The corresponding methane yields were 181.3 Ndm³·kg VS⁻¹, which were 280% higher than for the untreated tall wheat grass.

Keywords: tall wheat grass, *Flammulina velutipes*, fungal pretreatment, laccase, methane

1. Introduction

Over the past years, one of the main conditions for sustainable development is the production of appropriate fuels from biomass, which can be utilized as an alternative

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