Extraction of Bio-Ethanol from Rice Straw and Utilization of Rice Straw Residues for Animal Feeding

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Production of bio-ethanol from rice straw has some limitations, as it can also be used for important cattle feed. Ideally, research is needed to develop a protocol that can produce bio-ethanol from rice straw as well as use rice straw residues for cattle feeding. The objectives of this study are twofold: 1) to compare the bio-ethanol production by full and partial hydrolysis from rice straw for the aspect of quantity and 2) to compare the digestibility of different rice straw residues generated from partial hydrolysis procedures of rice straw for cattle feeding using a total feces collection method. Although partial hydrolysis produced less amount of bio-ethanol compared to full hydrolysis, rice straw residues generated from partial hydrolysis was able to use cattle feeding. In addition, significant differences were observed in dry matter digestibility among raw rice straw, NaOH-pretreated rice straw, and partially hydrolyzed rice straw. This study demonstrated that rice straw residues generated from a partial hydrolysis procedure for the production of bio-ethanol are a good resource for cattle feeding compared to raw rice straw, and this protocol can provide production of bio-ethanol as well as cattle feeding.

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