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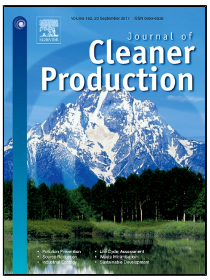

An integrated algal-bacterial system for the bio-conversion of wheat bran and treatment of rural domestic effluent

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PII:	S0959-6526(17)31562-7
DOI:	10.1016/j.jclepro.2017.07.119
Reference:	JCLP 10122
To appear in:	*Journal of Cleaner Production*
Received Date:	18 March 2017
Revised Date:	29 June 2017
Accepted Date:	16 July 2017

Please cite this article as: Yaqiang He, Ruolan Wang, Giurgiulescu Liviu, Qian Lu, An integrated algal-bacterial system for the bio-conversion of wheat bran and treatment of rural domestic effluent, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.07.119

An integrated algal-bacterial system for the bio-conversion of wheat bran and treatment of rural domestic effluent

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Abstract

Environmental pollutions caused by wheat bran and domestic effluent are two common problems in many rural areas. This work combines the digestion of wheat bran and the treatment of rural domestic effluent by developing a microbiological system consisting of *Chlorella vulgaris* and *Bacillus* sp., which was isolated from wheat bran fermentation and identified by molecular technique. *Bacillus* sp. converts solid organics of wheat bran into soluble nutrients which are essential to algae growth. The addition of digested wheat bran balances the nutrients profile of rural domestic effluent and increases the biomass yield of algae. After treatment, the rural domestic effluent was converted into farmland irrigation water and valuable algal biomass was produced. In practice, the results of this work may be useful in reconstructing domestic wastewater treatment systems in some rural areas.