



## XVII<sup>th</sup> World Congress of the International Commission of Agricultural and Biosystems Engineering (CIGR)

Hosted by the Canadian Society for Bioengineering (CSBE/SCGAB)  
Québec City, Canada June 13-17, 2010



### POWER FROM TRITICALE STRAW

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#### CSBE100804 – Presented at Section IV: Rural Electricity and Alternative Energy Sources Conference

**ABSTRACT** With the increasing concerns of global warming, there is a lot of interest in renewable energy technologies. Among various renewable energy technologies, biomass energy sources have a high potential and are at various stages of development, demonstration and commercialization. The objective of this study is to look at the feasibility of using triticale straw for production of power in Canada. Triticale is a manmade hybrid of wheat and rye and it has a high potential of growth in Canada. The study involves estimation of cost of production power (\$/MWh) from triticale straw through development of a data intensive techno-economic model. This study also determines the optimum size of a biomass power plant (MW) which is a trade-off between capital cost of the plant and transportation cost of biomass. This analysis will develop cost curves to assess the impact of scale on power production costs. The techno-economic model is affected by the location of the power plant and the future expansion of triticale. The scope of the work includes all the processes starting from collection of straw to conversion to electricity through direct combustion at the power plant. Preliminary results of the study indicate that the cost of power is higher than the coal based electricity in Western Canada

**Keywords:** Triticale straw, power, techno-economic model, yield, direct combustion, electricity, optimum size.