



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

**Economic Costs and Environmental Performance for Three Cellulosic
Biofuel Pathways**

By

***Sajeev E.M:** Department of Agricultural Economics,
Purdue University, sem@purdue.edu

***Tianyun Ji:** Department of Agricultural Economics,
Purdue University, ji12@purdue.edu

Wallace E. Tyner: Department of Agricultural Economics,
Purdue University, wtyner@purdue.edu

Benjamin M. Gramig: Department of Agricultural Economics,
Purdue University, bgramig@purdue.edu

**presenting authors*

***Selected Paper prepared for presentation at the Agricultural & Applied Economics
Association's 2012 AAEA Annual Meeting, Seattle, Washington, August 12-14,
2012***

*Copyright 2012 by Sajeev E.M., Tianyun Ji, Wallace E. Tyner and Benjamin M. Gramig.
All rights reserved. Readers may make verbatim copies of this document for non-
commercial purposes by any means, provided that this copyright notice appears on all
such copies.*

Economic Costs and Environmental Performance for Three Cellulosic Biofuel Pathways

Abstract: This paper provides the first comprehensive economic and life cycle analysis for three major proposed cellulosic feedstocks for biofuels: corn stover, miscanthus, and switchgrass. This economic and environmental evaluation is needed to determine if (how) the emissions reduction requirement in the Renewable Fuel Standard (RFS) is (can be) satisfied and can inform decisions about the structure of policies going forward. The study provides an integrated framework for the estimation of emissions and costs associated with cellulosic biofuel production. Costs for each feedstock are estimated under a range of assumptions, and the costs of conversion via both biochemical and thermochemical pathways are estimated to provide total biofuel costs. The cost and emissions results are presented in the context of the RFS, and the economic and environmental implications of the results are analyzed through the lens of environmental and energy policy.