



**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](mailto: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.*

## Ethanol or Biodiesel More Economically Efficient? Towards an Economic Framework

Dušan Drabik,<sup>1</sup>

[Dusan.Drabik@wur.nl](mailto:Dusan.Drabik@wur.nl)

Thomas J. Venus,<sup>1</sup>

[Thomas.Venus@wur.nl](mailto:Thomas.Venus@wur.nl)

and

Harry de Gorter<sup>2</sup>

[hd15@cornell.edu](mailto:hd15@cornell.edu)

<sup>1</sup> Wageningen University, The Netherlands

<sup>2</sup> Cornell University, USA

*Selected Poster prepared for presentation at the 2016 Agricultural & Applied Economics Association Annual Meeting, Boston, MA, July 31- Aug. 2*

Copyright 2016 by Dušan Drabik, Thomas J. Venus, and Harry de Gorter. 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.

## **Ethanol or Biodiesel More Economically Efficient? Towards an Economic Framework**

Economists consider biodiesel as a relatively inefficient biofuel, partly because it represents only 25 percent of biofuels worldwide and is close to double the price of ethanol. The possibility that biodiesel is so inefficient has important policy implications for the implementation of EU biodiesel-specific mandates and the nested structure of the US mandate with biodiesel tax credits. This paper determines the relative economic efficiency of ethanol and biodiesel using a comprehensive yet practical methodology (building on de Gorter et al. 2015).

We consider several economic advantages of biodiesel over corn-ethanol. First, while both ethanol and biodiesel produce feed by-products (DDGS and meal, respectively), the feed from biodiesel production expands total feed while ethanol production lowers overall feed availability. This means a gallon of biodiesel has a lower impact on food commodity prices than a gallon of ethanol. Second, diesel achieves 35 percent more miles per gallon (mpg) than gasoline. Third, biodiesel achieves 91 percent of the mpg of diesel, while ethanol achieves only 70 percent of the mpg as gasoline.

If the relative price of ethanol and biodiesel is adjusted for all these factors, it can be easily concluded that biodiesel is more efficient. But such a measure should be adjusted to consider what the free market prices of both biofuels would be in the absence of any biofuel policy. This requires accounting for existing (and differing) EU and US biofuel mandates and relative gasoline/diesel taxes. We determine that the observed biodiesel price is below that of the free-market biodiesel price. Finally, relative biodiesel (to diesel) air pollution is lower than that for ethanol (to gasoline).

### **Reference**

de Gorter, H., Drabik, D., and Just, D.R. 2015. The Economics of Biofuel Policies: Impacts on Price Volatility in Grain and Oilseed Markets. Palgrave Studies in Agricultural Economics and Food Policy. Palgrave Macmillan, New York, 316 pages.