



# Correction: Biodiesel production from transesterification of Australian *Brassica napus* L. oil: optimisation and reaction kinetic model development

M. A. Hazrat<sup>1</sup> · M. G. Rasul<sup>1</sup> · M. M. K. Khan<sup>2</sup> · N. Ashwath<sup>3</sup> · I. M. R. Fattah<sup>4,5</sup> · Hwai Chyuan Ong<sup>6</sup> · T. M. I. Mahlia<sup>7</sup>

© The Author(s) 2022

## Correction to: Environment, Development and Sustainability <https://doi.org/10.1007/s10668-022-02506-0>

Unfortunately, the original article contains error in Sect. 3.3. Fuel Composition. The correct data have been provided below in this correction article.

### 3.3. Fuel composition

The fatty acid composition of the produced biodiesel through the optimisation process is shown in Table 8. From the table, it can be seen that Australian canola oil is mostly composed of methyl oleate, with 42.47 wt% included in the composition. This is followed by 27.85 wt% and 16.65 wt% methyl linoleate and methyl linoleate, respectively. A

---

The original article can be found online at <https://doi.org/10.1007/s10668-022-02506-0>.

✉ M. A. Hazrat  
alihazrat20@gmail.com

✉ I. M. R. Fattah  
IslamMdRizwanul.Fattah@uts.edu.au

<sup>1</sup> School of Engineering and Technology, CQUniversity Australia, Rockhampton, QLD 4701, Australia

<sup>2</sup> School of Engineering and Technology, CQUniversity Australia, Melbourne, VIC 3000, Australia

<sup>3</sup> School of Health, Medical and Applied Sciences, CQUniversity Australia, Rockhampton, QLD 4701, Australia

<sup>4</sup> Centre for Technology in Water and Wastewater (CTWW), School of Civil and Environmental Engineering, University of Technology Sydney, Ultimo, NSW 2007, Australia

<sup>5</sup> Department of Mechanical Engineering, College of Engineering, Universiti Tenaga Nasional, Kajang 43000, Selangor Darul Ihsan, Malaysia

<sup>6</sup> Future Technology Research Center, National Yunlin University of Science and Technology, Douliou, Taiwan

<sup>7</sup> Centre for Green Technology (CGT), School of Civil and Environmental Engineering, University of Technology Sydney, Ultimo, NSW 2007, Australia

**Table 8** Fatty acid composition of the produced canola biodiesel

FAME group	Linear structure	Canola biodiesel (wt%)	Canola oil (wt%) (Issariyakul and Dalai 2010)
C8:0	$\text{CH}_3(\text{CH}_2)_6\text{COOCH}_3$ (Methyl caprylate)	0.19	–
C10:0	$\text{CH}_3(\text{CH}_2)_8\text{COOCH}_3$ (Methyl caprate)	0.1	–
C12:0	$\text{CH}_3(\text{CH}_2)_{10}\text{COOCH}_3$ (Methyl laurate)	0.1	–
C14:0	$\text{CH}_3(\text{CH}_2)_{12}\text{COOCH}_3$ (Methyl myristate)	0.1	–
C16:0	$\text{CH}_3(\text{CH}_2)_{14}\text{COOCH}_3$ (Methyl palmitate)	6.35	4.36
C16:1	$\text{CH}_3(\text{CH}_2)_5\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOCH}_3$ (Methyl palmitoleate)	–	0.16
C18:0	$\text{CH}_3(\text{CH}_2)_{16}\text{COOCH}_3$ (Methyl stearate)	5.65	1.96
C18:1	$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOCH}_3$ (Methyl oleate)	42.47	60.92
C18:1(OH)	$\text{CH}_3(\text{CH}_2)_5\text{CH}(\text{OH})\text{CH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOCH}_3$ (Methyl ricinoleate)	–	2.89
C18:2	$\text{CH}_3(\text{CH}_2)_4\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOCH}_3$ (Methyl linoleate)	16.65	18.70
C18:3	$\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOCH}_3$ (Methyl linolenate)	27.85	6.79
C20:0	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$ (Methyl arachidate/Arachidic acid)	0.2	0.59
C22:0	$\text{CH}_3(\text{CH}_2)_{20}\text{COOCH}_3$ (Methyl behenate/hydroflo acid)	0.2	–
C22:1	$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_{11}\text{COOCH}_3$ (Methyl erucate/Heneicosanoic acid)	0.14	–

similar FAC was observed by Issariyakul and Dalai (2010) with slight difference in methyl oleate and methyl linolenate percentages. The main component of their canola oil biodiesel is methyl oleate which contains 60.92 wt% of this component. Based on the composition, canola biodiesel contains a total of 12.89 wt% saturated FAME component, 42.61 wt% monounsaturated FAME and 44.5 wt% polyunsaturated FAME. Table 9 compares the properties of produced canola biodiesel and diesel. According to the table, canola oil biodiesel has a 21.5% higher cetane number but a 6% lower LHV than diesel fuel.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.