

## The Environmental and Health Benefits of Biodiesel

- Biodiesel is biodegradable, reducing the impact of spills and other accidents on the environment. In the event of a spill, pure biodiesel (B100) almost completely biodegrades after about thirty days. Blending biodiesel with petroleum diesel can accelerate the biodegradation of biodiesel blends.<sup>1</sup>
- Pure biodiesel reduces harmful vehicle emissions:
  - Tailpipe particulate matter is reduced by 47% in an unmodified diesel engine;
  - Unburned hydrocarbons are reduced by 67%; and
  - Carbon monoxide is reduced by 48%.<sup>2</sup>
- A blend of biodiesel with petroleum diesel also reduces emissions:
  - Tailpipe particulate matter;
  - Unburned hydrocarbons; and
  - Carbon monoxide.<sup>2</sup>
- Nitrous Oxide (NOx) emissions may increase or decrease slightly depending on the type of engine being used. Newer engine technology, designed to meet stringent NOx emissions standards, eliminate NOx almost entirely regardless of the fuel used.<sup>3</sup>
- Biodiesel virtually eliminates sulfur oxide and sulfates, which cause acid rain.<sup>4</sup>
- Biodiesel also produces significantly less polycyclic aromatic hydrocarbons (PAH) and nitrated PAH which can cause cancer.<sup>5</sup>
- Biodiesel made using canola as a feedstock contains 10% oxygen by weight. This creates a reduction in emissions of hydrocarbons, toxic compounds, carbon monoxide and particulate matter.<sup>6</sup>

<sup>1</sup> National Biodiesel Board, *Environmental & Safety Information*, [http://www.biodiesel.org/pdf\\_files/fuelfactsheets/Environment\\_Safety.pdf](http://www.biodiesel.org/pdf_files/fuelfactsheets/Environment_Safety.pdf), accessed on 01/09/09.

<sup>2</sup> Canadian Renewable Fuels Association, *Biodiesel FAQ – What are the emissions of biodiesel in relation to diesel?*, <http://www.greenfuels.org/biofaq.php?id=c1fa7953-4285-102b-b3dc-0030488d2a96>, accessed on 01/09/09; U.S. Environmental Protection Agency, *A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions: Technical Draft Report*, <http://www.epa.gov/otaq/models/analysis/biods/p02001.pdf>, accessed on 01/09/09.

<sup>3</sup> Canadian Renewable Fuels Association, *Biodiesel FAQ – What are the emissions of biodiesel in relation to diesel?*, <http://www.greenfuels.org/biofaq.php?id=c1fa7953-4285-102b-b3dc-0030488d2a96>, accessed on 01/09/09.

<sup>4</sup> National Biodiesel Board, *Biodiesel Emissions Information*, [http://www.biodiesel.org/pdf\\_files/fuelfactsheets/emissions.pdf](http://www.biodiesel.org/pdf_files/fuelfactsheets/emissions.pdf), accessed on 01/09/09.

<sup>5</sup> Canadian Renewable Fuels Association, *Biodiesel FAQ – Is biodiesel better for your health than regular diesel fuel?*, <http://www.greenfuels.org/biofaq.php?id=55cf1bc3-4286-102b-b3dc-0030488d2a96>, accessed on 01/09/09.

<sup>6</sup> Biodiesel Magazine, February 2008, “Count on Canola for Your Biodiesel”, [http://www.biodieselmagazine.com/article.jsp?article\\_id=2063&q=&page=3](http://www.biodieselmagazine.com/article.jsp?article_id=2063&q=&page=3), accessed on 01/09/09.