

Markham's Biodiesel Pilot Project

The Town of Markham implemented a Biodiesel pilot project in some of its parks operations, including some mowers and tractors, in 2003. Biodiesel is a clean, renewable diesel fuel substitute produced from agricultural resources such as soybeans, rapeseed (canola), or even recycled cooking oil from restaurants. It can be burned in any standard, unmodified diesel engine either in its pure form or blended with traditional diesel fuel. Using biodiesel substantially reduces emissions of unburned hydrocarbons, carbon monoxide, sulfates, and particulate matter. The ground-level ozone created by biodiesel's emissions is about 30% less than petroleum fuel.

What is biodiesel?

Biodiesel fuel is made from new or used, non-food grade vegetable oils and animal fats, resources which are non-toxic, biodegradable and renewable. Pure biodiesel contains no petroleum, but it can be mixed with regular diesel to create a biodiesel blend. A blend is useful in colder temperatures because it prevents the coagulation of the liquid, which is a common occurrence in all vegetable and animal fats when they become cold. Because of our northern climate, Markham is currently testing B20 - a blend of 20% biodiesel and 80% regular diesel. We hope to be able to use blends containing as much as 50% biodiesel in the future, during the warmer months.

How is it made?

Fats and oils are chemically reacted with an alcohol (methanol is the usual choice) to produce chemical compounds known as fatty acid methyl esters. Biodiesel is the name given to these esters when they're intended for use as fuel. Glycerol (used in pharmaceuticals and cosmetics, among other markets) is produced as a co-product.

What are the environmental benefits?

Biodiesel is made from renewable, biodegradable resources - making it a much cleaner alternative to tradition fuels. Using biodiesel substantially reduces emissions of unburned hydrocarbons, carbon monoxide, sulphates, and particulate matter (all components of smog). The emissions are further reduced as the amount of biodiesel blended into diesel fuel increases. The best reductions are seen with B100.

Links for more information

Green Fuels – Advantages and Disadvantages of Biodiesel

<http://www.greenfuels.org/bioindex.html>

The Veggie Van Organization – History and Environmental, Economic and Social Benefits of Biodiesel

<http://www.veggievan.org/biodiesel/index.php>