



Online Publications

Biofuel Policy, GHG Balances
and Biodiesel

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Subject: Biofuel Policy/iLUC

Rapeseed – Opportunity or risk for the future!?

From the start until the middle of May, the yellow blossoms of rapeseed stamp the agricultural landscape unmistakably across many regions of Germany. The crop was actually sown before winter, at the end of August, and the harvest will begin in July. The vegetation cycle comes to a close in 11 months.



Biodiesel Approval for the Operation of Heavy and Light Duty Vehicles (B100)

The use of Biodiesel has undergone massive changes in recent years. The approvals for passenger cars expired upon the introduction of new exhaust gas after-treatment systems, and the importance of Biodiesel as pure fuel decreased significantly, not least due to the economic framework conditions.



“indirect Land Use Change” (iLUC) – A critical inventory for objective political decision-making

With this article, advice is offered for the second round of legislation on the complex of “Land Use Change” (LUC). It will be shown how the European Commission has derived factors for EU legislation for indirect land use change (so-called iLUC) using econometric model calculations. These factors do not possess adequate legal certainty and would make no contribution to solving the problem of world-wide land use change if they were to be introduced.



UFOP Filling Station Study: Germany-wide filling station sampling of „standard“ diesel fuels – comparative investigation of summer and winter fuel 2013



At 89%, rapeseed oil is, as expected, the most important raw material of the biodiesel component in diesel fuel, followed by palm kernel oil at 6 percent and palm and soya oil at 4 and 1 percent, respectively. This is the result of the renewed investigation of the raw material composition of diesel fuel at public filling stations commissioned by the UFOP.

Study: Determinants for the level and volatility of agricultural commodity prices on international markets



With the world-wide explosion in prices for agricultural commodities and basic foodstuffs in the period 2007 to 2008 and the subsequent collapse in 2009 caused by the recession, an intensive discussion has begun on the possible negative consequences of high and volatile prices for world food security.

Subject: Biodiesel Research

Reducing emissions using biofuel blends from engines with SCR catalytic converters (Offprint MTZ 2/2014)



By optimising the dosing quantity of urea in the exhaust aftertreatment (AdBlue), a further reduction of nitrogen oxides at higher levels of biodiesel in diesel fuel is possible. These are the findings of the project undertaken at the Thünen Institute of Agricultural Technology in Braunschweig, which studied the effects of biofuel blends on the emissions of a commercial vehicle engine with an SCR catalytic converter.

Lowering of the Boiling Curve of Biodiesel by Metathesis



The boiling line of diesel fuels is relevant for the combustion in modern engines. Biodiesel shows a boiling behavior that is very different to diesel fuel. To adapt the boiling line, metathesis reactions were carried out. Different products were obtained by varying the catalysts and the ratio of biodiesel to 1-hexene.

UFOP-funded project for the approval of biodiesel as a pure fuel for DEUTZ Agripower engines



The DEUTZ Agripower engines of the series TCD 7.8 L6, TCD 6.1 L6 and TCD 4.1 L4 can be approved for operation with biodiesel as a pure fuel. This is the result of the project successfully completed by DEUTZ AG. In the course of this project, the engines were subjected to extensive field tests in practice, with a conclusive result for DEUTZ common rail injection systems and exhaust gas aftertreatment systems.

Final report – Screening of suitable monomer crosslinker systems and experiments on molecular recognition of acylated Steryl glycosides (ASG)



The subject of this project, which was initiated by the AGQM, is a feasibility study for the analysis of the field of application of nanostructured molecularly imprinted polymer adsorbent particles (MIPs) for the isolation of minor bio-oil components (useful and/or contaminant materials).

Optimisation of the Post-injection during Particle Filter Regeneration can reduce the Fuel Entry into Engine Oil of Passenger Car Diesel Engines



The bench tests, which were carried out in an operating point with small engine load in the regenerating mode, showed that the fuel entry increased into the engine oil with increasing RME content of the fuel. In this case the RME-concentration increased in the engine oil whereas the DF-concentration decreased.

Project report for the release of DEUTZ Euro IV common rail engines for biodiesel out

With the target of obtaining the release for the TCD 2013 4V of emission level EURO IV with DEUTZ Common Rail injection system in commercial trucks, an engine and function test on the test rig and a field test for making sure of the biodiesel compatibility were performed by DEUTZ AG with financial assistance from the Union zur Förderung von Oel- und Proteinpflanzen e. V. (UFOP).



Final Report: Oil Dilution of a Passenger Car Diesel Engine in Operation with blended Diesel Fuel B10

Currently Biodiesel (RME) is mixed according to EN 14214 and EN 590 with up to 5 % of fossil Diesel fuel. With a further increase of RME fraction to 10 % (B10 blend), there are uncertainties regarding the undisturbed longlife behavior due to variations of the physicochemical properties of RME in comparison to commercial Diesel fuel.



Subject: GHG Balances

ECOFYS Study – „Greenhouse gas impact of marginal fuels“

The study of the institute Ecofys, Netherlands, commissioned by the European Oilseed Alliance, EOA, (UFOP is a member of this alliance), the European Biodiesel Board (EBB) and the European Vegetable Oil&Protein Meals Industry (Fediol), confirms that the existing fossil comparator of 83,8 gCO₂/MJ underestimates the existing emissions of fuels from so called „marginal oils“. Ecofys proposes a comparator of 115 gCO₂/MJ.



DBFZ: Influence of the re-evaluation of residual and waste materials on the GHG balance of first generation biofuels



The Deutsche Biomasseforschungszentrum (DBFZ) in Leipzig comes to the conclusion in its report „Determinants for the re-evaluation of residual and waste materials on the GHG balance of first generation biofuels“ that a re-evaluation and correction is called for in regard to the methodology and values specified in the biofuel directives for calculation of the GHG balance for biofuels from residual and waste materials.

DBFZ: Revision needed regarding the GHG standard values for biodiesel from animal fats and vegetable waste oils



The German Biomass Research Center (DBFZ) has studied the effect of different transport expenditures involved in the collection of animal fats and vegetable waste oils on the greenhouse gas balance of biofuels produced from these. The DBFZ comes to the conclusion that the standard values specified in Renewable Energies Directive (2009/28/EC) have to be revised.

Biodiesel offers great internal engine potential for reducing particulate emissions



Tests carried out by reengineering GmbH, Denkendorf, Germany, on a 1-cylinder test engine confirm great potential for reducing particulates by using biodiesel as opposed to diesel. The reason for this is the specific physical and chemical properties of biodiesel, which combine very well with modern diesel engines.

Element pollution of exhaust aftertreatment systems by using biodiesel (Offprint MTZ 6/2012)



Biodiesel is a particularly attractive fuel for agricultural machinery. However, the introduction of new emission standards has made the use of exhaust gas treatment systems in agricultural vehicles essential. The combination of biodiesel and exhaust gas treatment causes problems, because the biodiesel contains traces of inorganic elements. Deutz and ASG have investigated the impact of current grades of biodiesel on the systems in real-life operation.

US Study on Greenhouse Gas Balance of Soy Based Diesel with Inconsistencies



A new US study on the greenhouse gas (GHG) balance of soy-based diesel has been evaluated by Deutsches Biomasseforschungszentrum (DBFZ). The study published by the United Soybean Board (USB) concludes that biodiesel produced from soy in the United States achieves a greenhouse gas reduction of 52 % based on defaults.

➤ Further publications under: <http://www.ufop.de/medien/downloads/english/general/>

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Date: April 2015

