

KILLER IN THE TANK

There could be something nasty lurking in your diesel that could not only damage your engines but also hamper performance. **Brian Weatherley** looks through the microscope.

Everyone knows water and diesel don't mix—literally. The trick, in fact, is keeping them apart. Water contamination in diesel fuel is a common problem throughout the transport industry and one which, if left untreated, can do irreversible damage to an engine's fuelling system and injectors, as well as severely affecting its performance.

Most hauliers probably cast an eye over the water-separator during a service, and drain off the offending liquid. But there could be something far nastier than just water lurking in your fuel tank or diesel bunker.

Two tiny micro-organisms known as *Cladsporium Resinae* and *Hormoconis Resinae* are drawn to the water in diesel like moths to a flame and, as managing director of lubrication and fuel separation specialists Expresslube Chris Roos explains, they can have a serious effect.

"They're airborne fungal spores that get into the tank when it's filled up. And once inside they migrate to the water that's in the fuel, feeding off the oxygen content, and creating

a thick black sludge that's drawn up into the pre-filter creating a major blockage.

"The first sign of any trouble is that the engine slows down as it struggles to get sufficient fuel under full load."

Unfortunately, truck tanks are an ideal home for the fungal spores. "They love it," reports Roos. "The return fuel into the engine is often nice and warm. The fungus growth is peculiar to diesel; it lives off it, eats it – and it will thrive as long as there's water. Once it's in the tank, that's it – it stays there."

Very few operators are even aware of it, admits Roos. "They don't even know they have a problem. Some of them drain the water off the bottom of the tank, or even throw away the tanks. Or they put a tap into the bottom of the tank and drain it off that way, and then flush the tank through with fuel. But if you fit a drain in a tank it can be very easy for someone to then steal the fuel." Others, says Roos, simply go through pre-filters at an alarming rate.

However, Expresslube offers what it describes as a "dialysis" service for truck diesel

tanks, using a portable separator to extract the fuel from a tank and remove the water that the fungi needs to live on. Without the water, they die.

Expresslube runs two portable units, which can cycle 1,200 to 1,500-litres of contaminated diesel per hour.

The tank contents are also agitated via the fuel return, which helps to release any stubborn biomass sludge. The separated waste material is then disposed of by Expresslube, which burns the residue.

Roos says the contents of an average-sized 300-litre artic tank would typically be cycled three or four times "depending on how bad the contamination was, so it would take around two hours in total".

Once the fuel has been cleaned, Expresslube then treats it with an additive which Roos says "has the ability to break down any residue of the now-dead bug into micro particles, allowing this to pass through the filters and pump/injectors without harming the engine".

The cost of washing-out a 300-litre truck

▲ Fungal spores feed off the water in diesel to form dense mycelial "mats" which clog engine filters.

tank is around £250 within an 80-mile radius of Expresslube's West Sussex site. Alternatively, the company will travel to a haulier's premises to treat a number of trucks at the same time. "Ideally we'd like to do five or six [vehicles] in a day which is cheaper," says Roos.

In addition to cleaning truck tanks, Expresslube will also tackle bulk storage tanks (either above or below ground) as well as construction and plant equipment, marine engines, static generators and heating systems.

Operator experience

Broadstairs-based MGI Marine Express suffered serious problems with diesel bug contamination on its Mercedes 1848 Powerliner, used for boat transport and STGO work.

Boss Martyn Gardner says the problem of contamination in the Powerliner's tank almost drove him to distraction. "We first built a new 500-litre all-aluminium tank to stop it – but, after a short while, we started to get this black

oily deposit floating in the fuel again. We made our own device to 'vacuum' the stuff out—it was like road tar. But it came back again and we kept having the problem with the diesel pre-filter clogging up. On the M-B V engine it's a bit awkward to get to, you have to tilt the cab. It got so I didn't want to look at it.

"The 1848 doesn't do many miles; we're not running up and down the road. The truck gets a short run down to the garage, which warms up the fuel, and then it stands again – so you get condensation in the tank."

A chance encounter with Expresslube's Roos proved the turning point for Gardner. "Our tank had over 100 litres in it—but you couldn't see the bottom! He said he'd never seen it so bad," says Gardner. "Bearing in mind our mileage, I've never seen pre-filters going so quick; we were changing them within 13 weeks." The blocked filter was badly affecting the 1848's power as it struggled for fuel, confirms Gardner. "I was going up Detling Hill in Kent and was passed by a laden 360hp Volvo; it was terrible." He agreed for Expresslube to

clean out the tank. "When they finished, the fuel was crystal clear," says Gardner.

MGI has continued to treat the diesel in the 1848's tank with the additive provided by Expresslube which is enough to treat 4,000 litres of fuel.

MGI has not seen a return of the black fungus—even with condensation in the large tank. Gardner has also noticed a significant improvement in the Merc's performance. ■

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