

Diesel changes - and 'bug'

ENVIRONMENTAL pressures have produced a diesel requirement very different to 30 years ago.

With increasing bio-diesel percentages, the fuel can already contain excess saturated water - and potentially diesel bug. Refiners now extract twice more fuel from a barrel of crude oil than they did in the 1980s and the barrels are now from oil fields that were classed uneconomical and poor quality in the 1990s.

This has led to phenomenal technical changes in refinery techniques, driven by the need to remove the sulphur.

But removing the sulphur has led to the diesel losing its lubricant, causing issues similar to when lead was removed from petrol.

There are two types of 'red diesel' available

'Road fuel' with a red dye containing bio-diesel up to a minimum seven per cent and standard red diesel which is A2 Gas oil, but can also contain up to seven per cent bio-diesel, which is not often known.

Bio-diesel is very hygroscopic, ie it 'sucks' water out

of the air which, along with water leaking into the tank and sometimes from the supplier, lies in the bottom of the tank and becomes the breeding ground for 'diesel bug'.

Diesel bug is the collective name for moulds, yeasts and bacteria that live in the water and feed off the fuel above. They double in number every 20 minutes and live for about 36 hours before dying and forming a sludge on the tank bottom.

They are an increasing modern problem; just one millionth of a gramme can grow into Biomass, a few centimetres thick in just 12 hours under ideal conditions, and the diesel tank in the summer provides ideal conditions.

The tank has a plentiful low sulphur fuel source and is perfectly still and dark. It gently warms up during the day, then cools at night, adding more oxygenated water from condensation. This sinks to the bottom of the tank.

Previously high sulphur levels in fuel used to hold back diesel bug, but no longer.

Even the food source is better; the bio-diesel is made



THE PROBLEM: An example of diesel bug

from rapeseed oil.

If you find it in your filters, there could be a significant layer of sludge on the bottom of the tank already as fuel suction pipes don't suck from the very bottom.

As the sludge builds it becomes acidic, further increasing the degradation of the diesel leading to another modern fuel problem - system deposits forming gumming and lacquering.

These deposits begin to coat

the fuel system, resulting in smoking exhausts as the fuel systems struggle to operate efficiently.

This soon leads to increased fuel consumption, by as much as five per cent even before it becomes apparent.

If you are using 1,000 litres a month, that's 50 litres of wasted diesel a month.

Have you found:

- The need to replace fuel filters more often? (diesel bug)
- Failing fuel injectors or fuel pumps? (lack lubricant in the fuel)
- Black excessive exhaust smoke? (deposits in the fuel system)
- Increase in fuel consumption? (deposits in the fuel system)
- Difficult starting? (deposits in the fuel system, low cetane number)
- Fuel discolouration/smell? (fuel degradation, diesel bug)
- Increase in lube oil consumption? (deposits in fuel system and injector)

So what can I do?

Clean, dry, uncontaminated diesel is essential if you want reliability from your modern

engines.

Refiners sell fuel to use, not to store - they put in additives to maintain quality up to six months and recommend fuel is not stored much longer than this.

Your fuel is probably at least two months old when you get it, having been transferred up to seven times as it works through the supply chain.

n Only buy from a reputable trusted supplier. There is a lot "cheap" fuel around. A2 gas oil should have a lubricant added at manufacture but it's costly and often has only the very minimum added, with the result being premature failure of fuel pumps and injectors. Less reputable suppliers even leave it out!

■ MarShips' recommendation, along with the OEM manufacturers, would be to use red diesel from EN590 road fuel, which is better regulated, has a higher cetane number and often better lubricity.

■ Drain the storage tanks of water from the drain valve (if you have one) at least once per week or talk to MarShip about a simple dewatering system. Basically, remove the water

and you remove the diesel bug. Essential on bonded tanks without a drain.

■ Treat the fuel with a detergent and lubricity improver to ensure deposits cannot form and the lubricity requirement is guaranteed. DieselAid @ LDB puts you in control of the quality of your fuel and has a biocide to kill bug. One litre is enough for 4,000 litres of fuel.

So as you fire up your expensive tractor in the morning, spare a thought for your fuel - do you have a tiger in your tank, or a black sludge sloth to ruin your day?

MarShip UK specialises in diesel fuel, whether it's fuel conditioning, cleaning or maintaining and storing. They have a complete range for maintaining diesel and welcome the opportunity to provide advice free of charge. They exhibit regularly at agricultural show and are members of the NAAC.

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