

Wee tim'rous beastie

What is lurking at the bottom of your fuel tank?

David Fletcher has some further advice on bio-fuels as winter approaches

Last time in NN, I wrote about the uncertainties of the red diesel fuel market and the impact on we users of the bio content. As always on the towpath, the discussion continues, and I have put together some ideas on how to manage this difficult situation. Remember that whenever you buy fuel it is possible, and indeed very likely, that it contains at least a small percentage of bio-fuel and maybe as much as 7%. If the fuel is carefully stored ashore and in the boat, and it is kept free of water and turned over (used) regularly, then there is no problem. But real life is different, and that is when the diesel bug strikes. RCR are seeing regular engine failures because of this.

Fuel additives are going to be one of the main methods of managing this situation. There are many on the market, and I am keen to gather good experiences and learn from the bad. So please tell us what happens to you! Some additives are designed to mop up small amounts of water by holding it in the fuel and so preventing the bugs from feeding on it until it is burnt in the engine or stove. You will never know it was there. One tip is not to overdose: apparently the engine can only tolerate so much water in the fuel/additive mix. Perhaps if there is too much, the water comes out of solution under pressure. So stick to the instructions and don't add more than needed. I have used Fortran and Fuel Set in the past, but that proves nothing as I have no idea whether I am using fuel with added bio! I have no trouble with elephants either.

Other types of additives work like bleach to kill the bugs or stop them breeding and these are very useful if

you have a case of bio sludge build up, as it can break it down and leave the fuel usable again. Some boaters use them all the time as a preventative measure. You should identify which problem you have and buy a product to suit. Marine 16 and Racor Parker have products for clean up if you are in trouble, but I have no personal experience.

So if you are to avoid a breakdown, I suggest that a good starting point is to know what you have in the bottom of your tank. Is there sludge or dirt or water, or is it all clean and dry? Any free water that has got in from whatever source will lie in the bottom of the tank under the diesel, and the bacteria will use the bio part



of the fuel to grow and form sludge. And sludge will sooner or later move to the fuel system and block filters. So knowing what is there and doing something about it is a very good start.

I experimented with two ways to find out. I bought a tube of something called 'water finding paste' on ebay for about £12. This comes in a tube like toothpaste and is orange in colour. I smeared some of this on the end of the dipstick and put it in the fuel tank (to the bottom), and then pulled it out again. The paste turns from orange to red on contact with water. So very easily I can tell if there is free water there, and I can also check before and after each refuel. There is enough in the tube for many uses, so buy one and share it with others. In my case, and the boat next door, there was no water and no evidence of sludge or debris.

Also I bought a 1 meter length of aluminium tube 3 mm diameter from B&Q for about £3. Copper gas or central heating pipe would do too.

I found a squeezey fuel priming bulb in my garage and connected it to the tube and used this to suck from the bottom of the fuel tank to get a sample. The bulbs are in chandlers for a few pounds. This worked well and easily lifted the fuel, and water had there been any there. If the water-finding paste found a lot of water and you have no drain cock, this would be a method to get most of it out. The tube would be too small for sludge but hopefully there would be traces on the dipstick or tube if it had been there.

And what if you find water? Well get as much out as you can by sucking, or draining if you have a low point drain, and then dose the remaining fuel with an additive that will mop up the remaining water. Then use the fuel up as soon as you can, and only then refill with new fuel. You should also think about how the water got in there. Leaking filler plugs and condensation are the most likely causes, but it is also just possible that it arrived with a fuel fill up.

And what if you find sludge? Assuming that it is not just dirt but diesel bugs then there are three options, getting progressively more expensive. First you can dose with a bug killer as already mentioned and hope it clears in a few days. You can expect to flush pipes to the engine filter and change the filter elements several times before the system cleans up.

If you can limp on, then go to one of the few boatyards who have the equipment to flush the tank and clean up the fuel with an external pump unit. This involves use of the additives and pumping the fuel through filters to remove solids. And if you have a very bad case, you could expect to have the top of the tank cut open so that the sludge and waste can be removed manually. Not a happy thought.

Please let us know about your experiences so we can pass them on to other members.

So heading for winter layup, what are the best things to do?

- Check to make sure that there is no water or sludge in the tank, and do something about it if there is.
- Check to make sure that rain cannot get into the tank via the filler.
- Use up as much of the summer fuel as you can.
- Refill to full with winter grade fuel, bio free if you can get it, and check for free water after filling.
- Dose with an additive.
- Use the fuel as soon as you can in the Spring.

