

Using Biodiesel

Use of biodiesel has several differences than pure diesel. Here are some examples:

- Biodiesel must be purchased pre-blended from the supplier. Mixing the diesel fuel and biodiesel on-site can result in a non-homogeneous mixture that can lead to problems. It is the responsibility of the fuel supplier and / or the End User to make sure the right type of fuel and blend are delivered and used.
- Care must be taken when handling the fuel to assure water does not enter the supply. Biodiesel will actually attract water vapors out of the air. Fuel tanks must be kept as full as possible to limit the amount of air and water vapors in them. Drain water from engine mounted fuel filters on a regular basis, at least once a week.
- Due to potential oxidation and stability problems with Biodiesel, the fuel must not be stored in on-site storage tanks for more than 3 months. If it is, it cannot be used as fuel for a diesel engine.
- Likewise, potential oxidation and stability could be a problem with the fuel stored in your machine. Machines must not be stored for more than 3 months with biodiesel blends in the fuel system. If long storage periods are necessary, the engine must run on pure diesel fuel for 20 hours to flush the biodiesel fuel out of the engine fuel system prior to storage (i.e. harvesting equipment).
- When changing over to biodiesel use, it may be necessary to change fuel filters once or twice prior to the normal change interval. Biodiesel can loosen rust and particles from the inside of on-site fuel storage tanks and vehicle fuel tanks that would normally adhere to the sides of the tank and not cause any problems. These particles will

then be trapped by the vehicle fuel filters and cause shortened filter life and filter blockage.

- Complete cleaning of the whole on-site handling system and storage tanks may be required in some instances. Use a fuel filter and water separator and make sure the storage tanks, fuel lines and fittings are compatible with biodiesel.
- Use a biocide during the spring and summer months; this prevents problems with bacterial growth in the system.
- Any spillage of Biodiesel must be cleaned up immediately before it can cause damage to the paintwork of the machine.

Use of animal fat biodiesel can result in plugging of injectors, injection lines and injection pump failures. Use of soy-based biodiesel above B5 or a 5% blend can also cause potential problems with the fuel system. Fairbanks International recently repaired a tractor that had mistakenly been fueled with animal fat biodiesel. The result was damage to the pump, injectors, common rail and all fuel lines, which all had to be replaced.



These fuel samples were retrieved from a tractor damaged by animal fat biodiesel. The sample on the left was found within the fuel system and the other was taken from the fuel filter.

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