



DUNGBUSTER® AUTOMATIC YARD CLEANING

GREENWASH™

INSTALLATION INSTRUCTIONS

(experimental)



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GREENWASH™

We are currently testing and monitoring Greenwash™ Dungbuster™ installations and this document covers our experience to date. We cannot however guarantee success and this document is released as a draft guide – it will be updated as we learn through working with our customers who install Greenwash™ Dungbuster™ systems.

Warning neither Atelier Tech Limited nor Technipharm NZ Limited can guarantee that the systems recommended below will work on all farms.

Greenwashing with the Dungbuster™

The Dungbuster system can be used with Greenwash™ as long as the solids have been removed. As effluent contains a high solids content this involves careful consideration. The solids are best removed via settling, though, they can also be removed directly from a one pond system with a special continuous backwash strainer pump supplied by Technipharm.

Design considerations

1) Multiple pond systems

Where the effluent flows from one pond to a second pond (aerobic /anaerobic system) and the green water is not stirred the bulk of the particulate matter will have dropped out of solution and formed a sediment in the ponds, while some will have floated to the top. As long as the water is undisturbed it is safe to extract the water from the second pond using a float system that ensures that the water intake is about 300mm below the top surface and never near the sediment layer.

There is currently at least of one working system with this configuration that has been in use for some time.

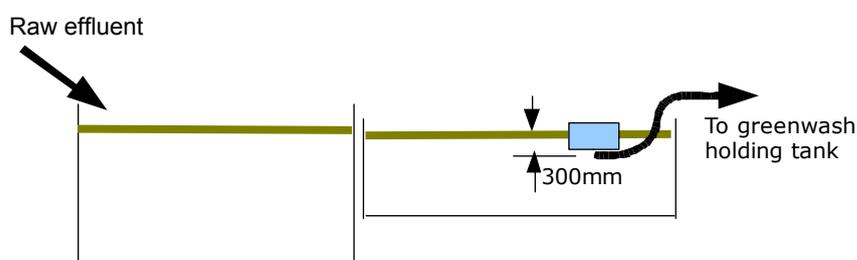


FIGURE 1: 2 Pond system

2) Single pond systems

In single pond systems, particularly stirred systems there are a lot of solids in suspension. In these ponds it is necessary to use the special continuous backwash strainer pump supplied by Technipharm which includes a fine strainer and a continuous backwash system. It is also important to ensure that this pump is never functional when the stirrer is operating nor within 30mins of it stopping. Figure 2 shows a typical single pond system installed.

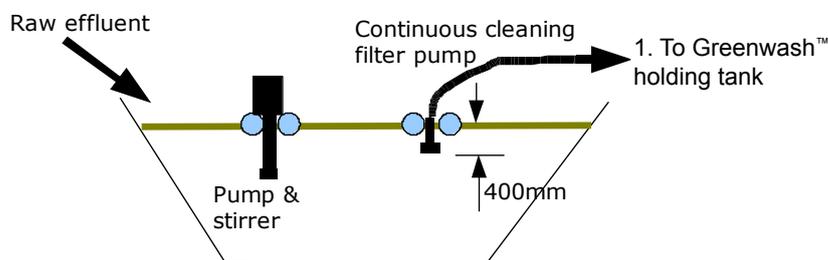


FIGURE 2: Single Pond System

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3) Systems with solids removal

Solids removal will still leave quite large particles in the green water. We have yet to test it but believe that a large holding tank that allows sufficient time for sedimentation, should be sufficient for their removal. Suggest a 30,000 litre tank for a 12m Dungbuster™ system bar system and pay particular care to ensure that filling the tank does not stir the sediment.

We suggest allowing for the use of our continuous backwash strainer/pump should it prove necessary. This would require an initial holding tank/sump which is periodically drained as shown in Figure 3.

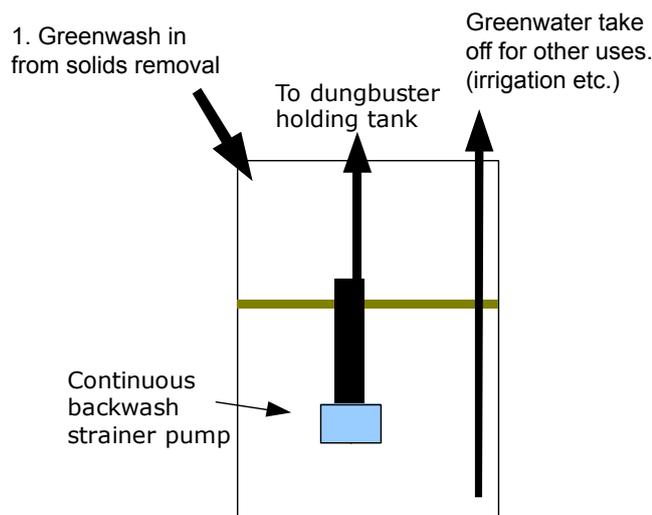


FIGURE 3: Solids Removal

Holding tank

A holding tank near the farm dairy acts as a final settling pond and a reservoir to feed the washdown pump that is dedicated to the dungbuster system. Note that it is important to ensure that water from the Greenwash holding tank cannot under any circumstances enter the milk line wash down system. Green water should not be used with yard hoses or anywhere where people may be exposed to green water droplets. The system needs total separation from all other water systems.

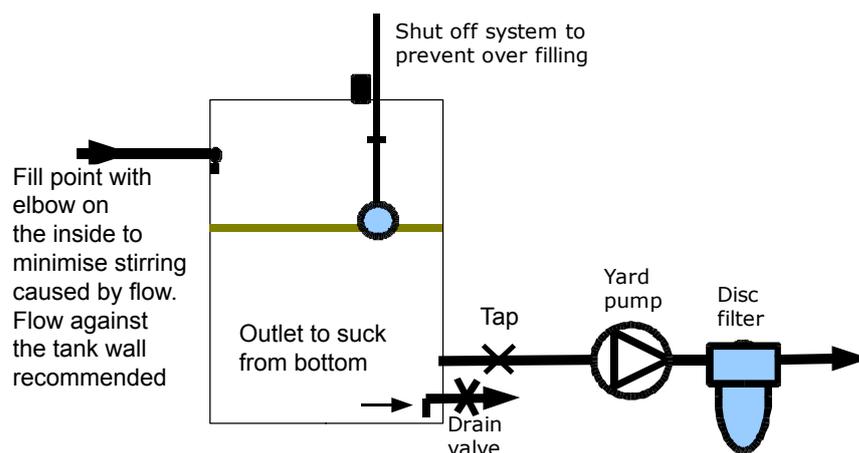


FIGURE 4: Greenwater Holding Tank

Holding tank tips:

- For a 3 dungbuster bar system (total length 9m) we recommend a 10,000 litre holding tank.
- For a 4 or more bar system we recommend a 20,000 litre holding tank.
- The green water should refill the holding tank immediately after milking to allow the maximum settling time possible before the next yard washing.
- The greenwater should enter the tank and wash against the wall of the tank to minimise stirring of the tank contents during filling.
- If you have a single pond with pumped system it is important to ensure that the continuous back wash strainer pump is not activated within 30 minutes of the stirrer being used as this will overload the strainer/backwash system.
- The holding tank should be plumbed to allow sediment drainage, it is necessary to fit an elbow as shown in figure 4.
- The outlet to the yardwash pump should be higher than the drain valve outlet, suggest about 20% of the height of the tank.
- We recommend using an Amiad, TL50TC-130D 50mm disc filter, available from Technipharm.

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Holding tank fill control

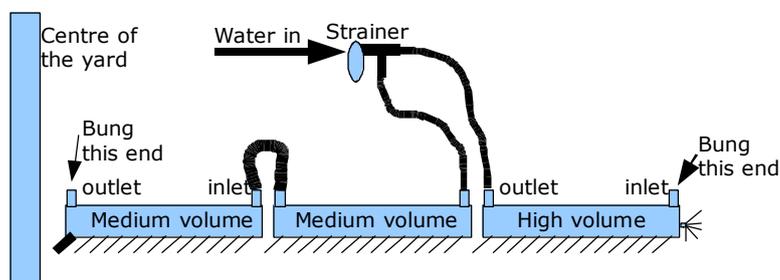
Our experimentation indicates that sufficient settling of the already filtered green water from the continuous backwash pump can be achieved in about 8 hours, if the holding tank is undisturbed. To achieve this we recommend a system that fills the holding tank immediately after milking.

If the system is gravity or continuously feed and a ball cock is used then it is very important to ensure that the inlet is separated from the outlet (opposite sides of the tank) and that the inflow is a gentle flow onto the tank walls.

If you are using a pump from a single pond system then you will need to ensure that the pond stirrer is not switched on when the holding pond is being filled. In addition, it is recommended that you allow 30 minutes for the pond to settle after stirring and before starting the continuous backwash pump to pump water from the pond to the holding tank. Generally this can be arranged with timers.

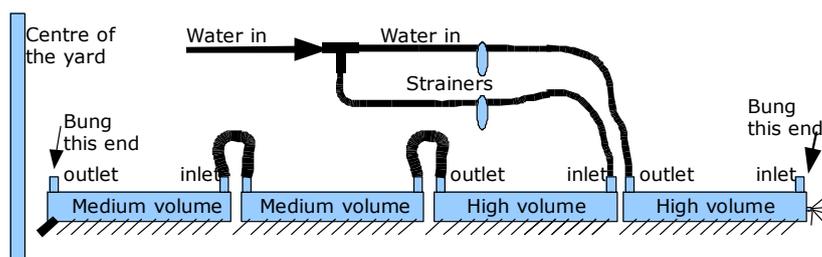
Dungbuster® configurations

To avoid blocking of the Dungbuster® jets it is important that water flow is maintained in the booms over all the jets. This is achieved by ordering your booms specifying that they are for Greenwash™. We will supply the inside boom with a large final hole (4mm) as shown in figures 5 and 6 to ensure flow even in the very end boom.



Plumbing for Greenwash™ 3 bar Dungbuster® system with centre drain. Note the large outlet hole on inside boom - this stops muck settling inside the boom.

FIGURE 5: 3 bar Dungbuster®



Plumbing for Greenwash™ 4 bar Dungbuster® system with centre drain. Note the large outlet hole on inside boom - this stops muck settling inside the boom.

FIGURE 6: 4 bar Dungbuster®

Your feedback is appreciated, please contact Technipharm on 0800 80 90 98 or email: sales@technipharm.co.nz