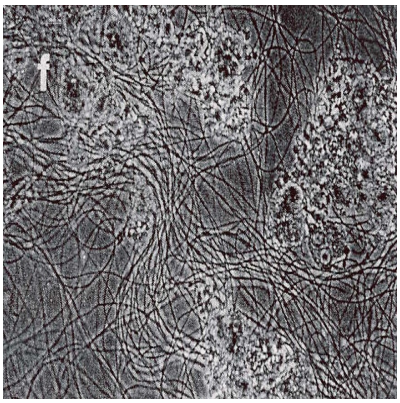
BioFuture Ltd.

Industrial

BFL 5050BC

In the operation of a wastewater treatment plant, the principal aim is always to produce a final effluent that complies with consent requirements. This is successfully achieved by the presence of good floc forming bacteria that will degrade the organic material present and settle out under gravity in the final clarifier, producing a clear, non-turbid final effluent.

When a filamentous biomass develops, it can result in undesirable sludge characteristics which can be expressed as poor sludge settlement, poor sludge thickening, an increase in final effluent BOD/COD and an increase in final effluent total suspended solids. Consents are broken and fines may be incurred by the wastewater treatment facility.



There are many reasons why a filamentous biomass develops. Typical situations include high organic loading, low F/M ratio, lack of nutrients especially micro-nutrients, septicity, presence of oils, fats and greases, etc. These conditions, in association with other factors, can permit filamentous bacteria to dominate at the expense of the desirable floc forming bacteria. The filament extensions reach out for the materials in short supply, thus having a competitive edge over the floc formers. This competitive advantage increases rapidly as the filaments extend out from the floc into the liquid phase due to the larger surface area.

BioFuture harnesses the power of environmental biotechnology to provide products which resolve wastewater treatment problems. BFL 5050BC is a biological product specially formulated to eliminate conditions introduced by a filamentous biomass in aerobic wastewater treatment systems in municipal, dairy and associated dairy industries. BFL 5050BC's combined activities disrupt the unwanted filaments, introduce good floc forming bacteria thus ensuring improved sludge settlement in the final clarifier as well as improving the quality of the final effluent.

Situations where the use of BFL 5050BC is beneficial include: -

Bulking sludge
Poor settlement
Variable loads
Increased TSS in the final effluent
Poor BOD/COD removal

BFL 5050BC uses only harmless, natural micro-organisms that control filamentous conditions in a highly effective and environmentally acceptable way.

What is BFL 5050BC?

BFL 5050BC consists of a carefully selected blend of natural micro-organisms that have been produced as single pure cultures, harvested, stabilised on a cereal base and blended together to produce the final product.

The product also contains a small quantity of a biodegradable effervescent agent, a biodegradable water softener and a biodegradable surfactant. The water softener reduces the hardness of the water thus increasing the ability of the surfactant to reduce surface tension and permit the effervescent agent to

efficiently penetrate and fragment the filaments.

This activity does not interfere with the structure or performance of existing biological flocs, it specifically targets the filaments protruding from the flocs into the supernatant, especially those filaments that interlink with other flocs giving rise to a loose suspended sludge which will not settle.

Once the filaments are fragmented, the floc forming bacteria in BFL 5050BC set about improving floc structure as well as competing for available food so that the filamentous bacteria are selectively suppressed. As the bacterial flocs grow and strengthen, sludge settleability improves, biological performance such as COD and BOD removal improves and the levels of TSS in the final effluent should be dramatically reduced. The bacterial strains in BFL 5050BC grow at a fast rate so that they quickly establish dominance in the biological population. The strains in this product work in harmony with the existing biomass and increase its overall efficiency so that plant performance is restored as quickly as possible. In situations where the filaments are selected for by the presence of oils, fats and greases, the bacteria in BFL 5050BC rapidly produce the enzymes necessary to breakdown these substrates thus making this material unavailable to the filaments and selectively suppressing their dominance.

In addition, BFL 5050BC contains a natural extract providing macro and micro-nutrients. Wastewaters in which filamentous outbreaks occur can be low in nutrients. The combination of essential micro-nutrients, bacteria and biochemical components in BFL 5050BC will introduce a much healthier, robust biomass with good settling characteristics.

Directions for use

The product as supplied is on a cereal base and will be applied directly to the aeration basin at a point of maximum mixing and dispersion.

Since each application is different, it is important to assess the site before deciding on a dosing programme. The Technical Department provides assistance in assessing the site, devising a treatment programme and selecting an appropriate dose point.

Product safety

The micro-organisms in BFL 5050BC have all been isolated from natural environments. They have not been genetically modified in any way. These microbial strains have been classified as being harmless to humans, animals and plants in accordance with EU and WHO guidelines. The product is subjected to independent testing to ensure that it is free of pathogens.

Extensive checks are conducted throughout the production process to ensure purity and quality of the product.

For further information on dosing programmes and product application for BFL 5050BC, please contact: -

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