

BMT Biofilter: A Biological Water Treatment System[®]

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What the BMT Biofilter Can Do. The BMT biofilter is a filter for **biological treatment of water**. It is not a filter in the common sense, that it filters particles from the water, but rather it reduces the amount of soluble substances, such as:

- Certain chemicals, for instance it converts NH_4^+ (ammonia) to NO_3^- (nitrate),
- Pathogenic organisms,
- BOD (oxygen demanding chemicals),
- TOC (toxic oxygen demanding chemicals).

What it Can Not do.

The BMT biofilter will not:

- Remove nutrients except for some metals during the start up phase,
- Lower the concentration of salts. It will for instance not remove nitrogen and phosphorus, or remove particles from the water, that are not biologically degradable,
- Produce a sterile water. Rather it will produce a water with a **biological balance**.

What to Think About. The BMT biofilter is a biological water-treatment system. This means that it is not possible to control what actually goes on in the BMT biofilter. The only thing we can do is to provide the necessary input for the process that we desire.

To provide an environment that is necessary for the biological process to function properly, the following must be fulfilled:

- 1) The temperature must not go below 12°C. Otherwise it gets too cold for the bacteria and they will not grow properly.
- 2) The oxygen content in the incoming water must be higher than 80% of oxygen saturation at the desired temperature, preferably higher. If not, there is a risk that the biological process will change from an aerobic (oxygen demanding) to an anaerobic (non-oxygen demanding) process. The anaerobic process will produce toxic chemicals.
- 3) There must be a continuous flow of water through the filter. Otherwise the oxygen in the BMT biofilter will be consumed and an anaerobic process will start.

Research. Research on cucumbers infected with *Pythium aphanidermatum* and melon necrotic spot carmovirus MNSC, conducted at the Norwegian Crop Research Institute, shows that the total harvest is not affected compared with the noninfected plants (Toppe et al., 1999).

LITERATURE CITED

Toppe, B., M. Verheul, and D.-R. Blystad. 1999. Norwegian Crop Research Institute, P.O. Box 100, N-1431, AAS, Norway.