MUTAG
WATER MATTERS

Reference: AR Aqua, Bagno, Poland

Aquaculture RAS system for rainbow trout

Project: New facility established in 2021

Facts & figures:
280 ltr/sec in the fingerling module and 600 ltr/sec in the grow-out module are being treated in the biofilter which is operated with Mutag BioChip™ in this recirculated aquaculture system at the rainbow trout farm.

	Fish tank size	Biofilter size	Flow rate	Temperature	Mutag Bio-Chip^{tm} volume	Mutag Bio-Chip^{tm} volume total	Feeding	Estimated generated TAN amount
Fingerling	9 x 32 ^{m3}	2 x 27 ^{m3}	280 mltr/ sec	11-13 dgr, C	2 x 9 ^{m3}	18 ^{m3}	200 kg/day	9 kg/day
Grow-out	4 x 160 ^{m3}	4 x 27 ^{m3}	600 mltr/ sec	11-13 dgr, C	4 x 8 ^{m3}	32 ^{m3}	200 kg/day	13,2 kg/day

Task:
Effectively remove ammonia/TAN by means of a long-lasting MBBR solution and thereby, securing good water quality for both, the growth of rainbow trout fingerlings and fullygrown fish, respectively.

Solution:
With its high surface area and efficiency, the Mutag BioChip™ was chosen to be integrated as part of this MBBR solution. As a result, the aforementioned water quality, a good and efficient production capacity in both fingerling and grow-out stages are being maintained. An appropriate aeration system for proper mixing as well as retentions screens for protecting the carrier media against leaving the biofilter were installed, ensuring smooth operation of the biofilter.

Results:
The biofilter equipped with Mutag BioChip™ as well as the associated removal of ammonia / TAN is working satisfyingly, ensuring good water quality and a safe environment for the fish all the time. The biofilm on the Mutag BioChip™ with its brownish colour is clearly visible, whereas it is well oxygenated at all times due to the self-cleaning effect of the Mutag BioChip™. The plant is running since 2021, whereas the effluent quality for the growth of rainbow trout is reliably attained all the time, with a level of NO2 and NH4 at 1 mg.

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