



NIVA RESULTS

MAT-KULING FRESHWATER PROTEIN SKIMMERS

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The **Norwegian Institute for Water Research (NIVA)**, Norway's leading Non For Profit Institute for fundamental and applied research on marine and freshwaters. NIVA's world-class expertise is multidisciplinary with a broad scientific scope.

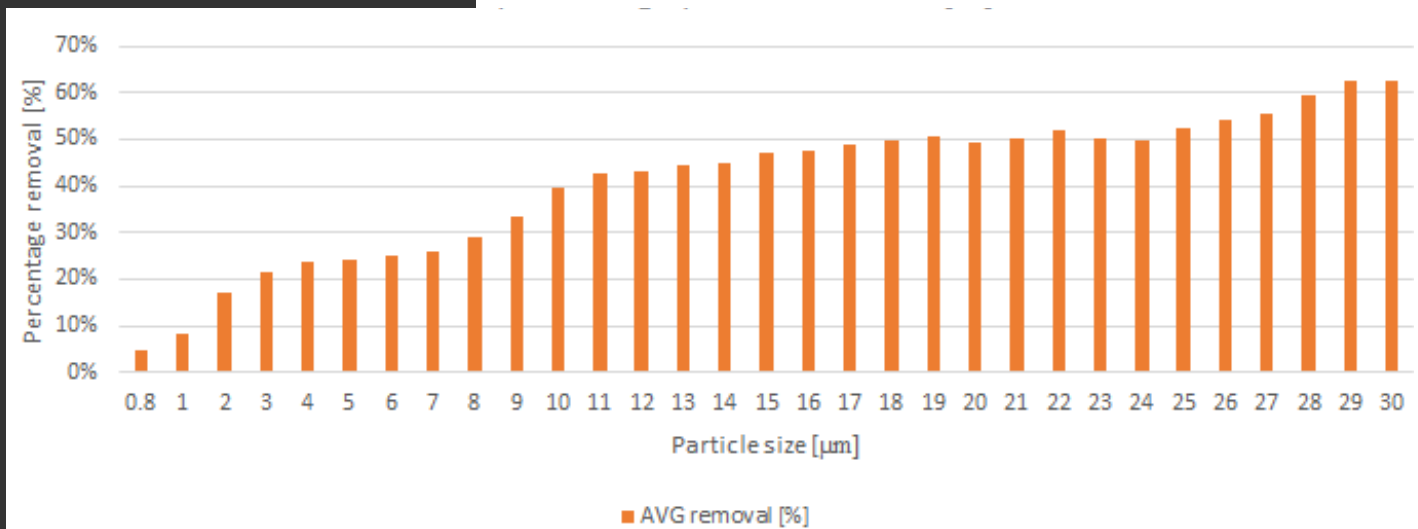
NIVA officials, performed an independent, nonpaid field trial on **MAT-KULING's** freshwater protein skimmer performance in an undisclosed salmon farm facility in Norway.

The trial occurred between 12.08.2020 and 10.09.2020. NIVA collected water samples before the installation of MAT-KULING freshwater skimmer and continued collecting samples after the installation of the Protein Skimmers for about 1 month.

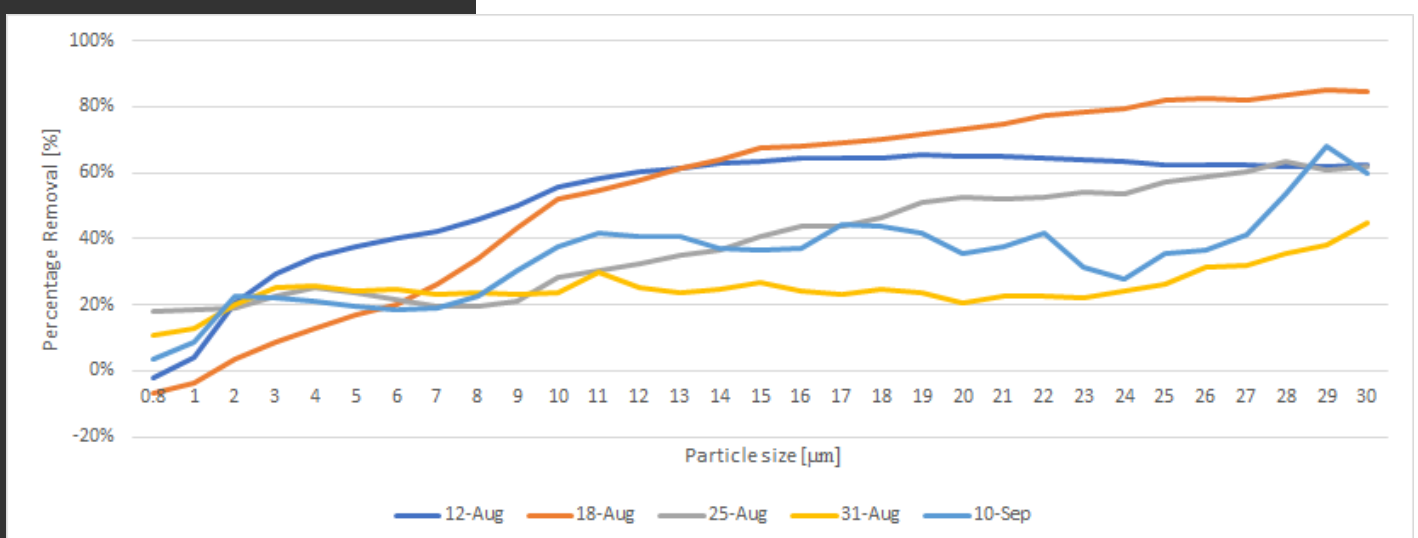
During the trial the pre-smolt pool was operated in full capacity and following the standard farming protocol.

The results as they can be observed on the diagrams presented, were better than expected. There was significant removal in small, medium and large particles. This resulted in improvement in several water quality chemical parameters.

AVERAGE PARTICLE (%) REMOVAL



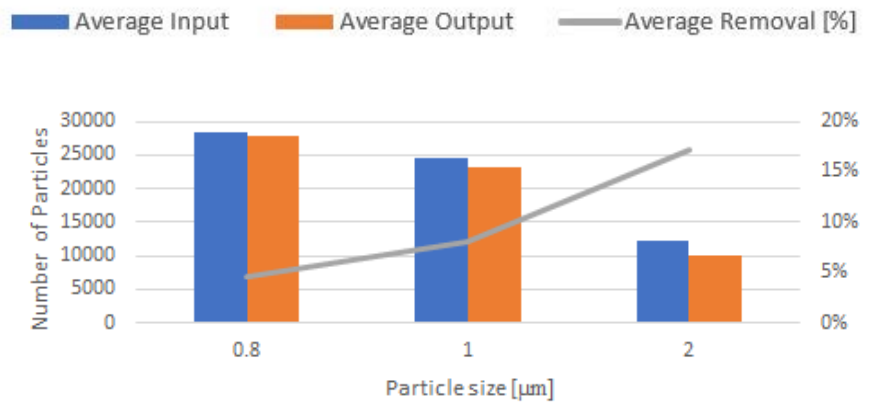
PARTICLE REMOVAL (%) DURING 12 AUG - 10 SEPT



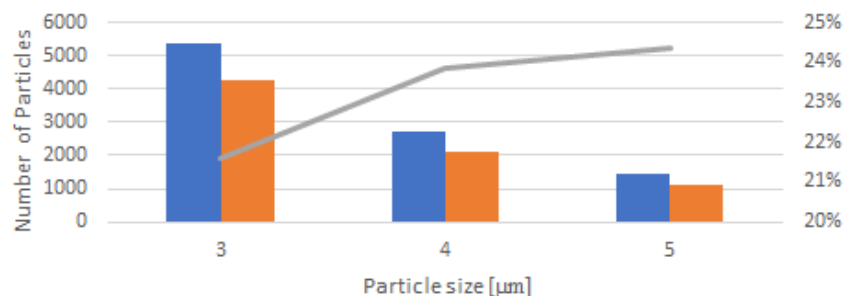
**UP TO 70%
PARTICLES
REMOVAL**

PARTICLES AT INLET VS OUTLET

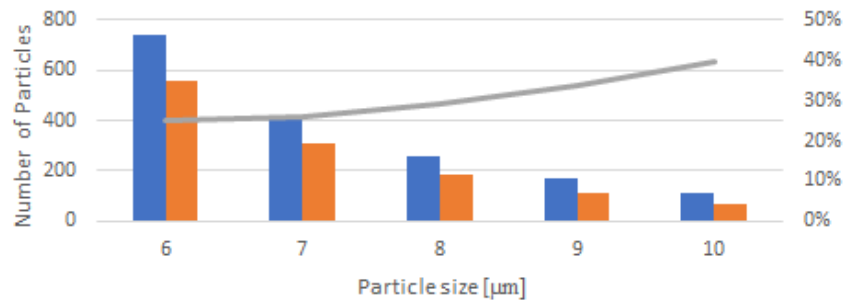
**Particle Range
0.8 - 2 μm**



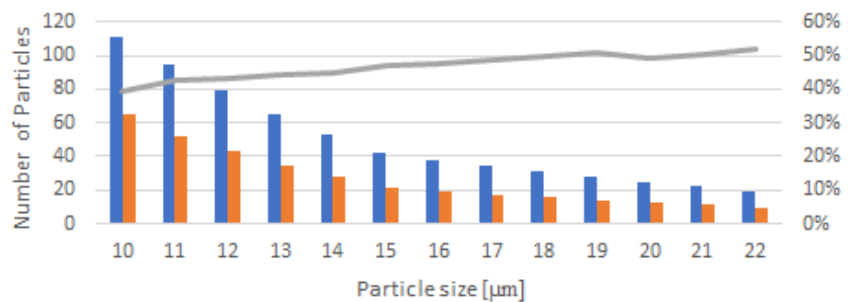
**Particle Range
3 - 5 μm**



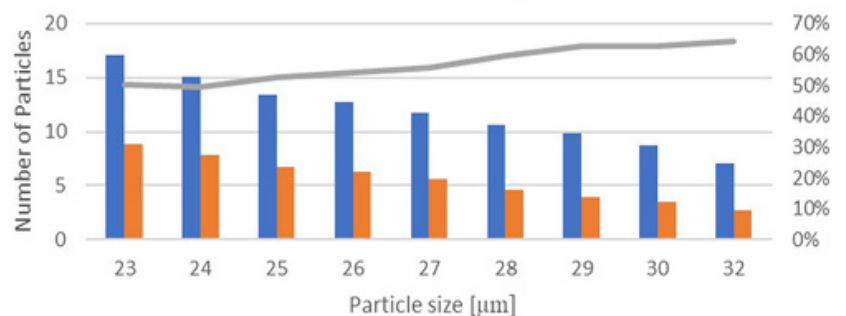
**Particle Range
6 - 10 μm**



**Particle Range
10 - 22 μm**



**Particle Range
23 - 32 μm**





PROTEIN SKIMMERS FOR PRE-SMOLT SALMON

Freshwater Farms, specifically salmon farmers, requested MAT to develop a Freshwater Protein Skimmer able to perform in fresh and brackish water conditions and installed in salmon pre-smolt stage tanks.


Our equipment is designed from scratch and delivers the best quality of protein removal from any other equivalent foam fractionator in the market.

Better water quality results to more fish and feed in the same pool. The protein skimmer can perform as an add-on to the existing filtration setup.

By adding a protein skimmer to the hatchery filtration RAS, the farm aims for 20% or more enhancement of water quality and significant improvement in biomass capacity per tank, by better mechanical filtration and higher oxygen levels.

The protein skimmer / fractionator produces fine and thick constant air bubbles in order to generate sufficient skimming.

The skimmer is designed to be installed in pre-smolt stage freshwater tanks. This is the stage that farms seek to optimize water parameters to achieve maximum salmon growth.



The problem is that these pre-smolt tanks run on fresh water and traditional protein skimmers designed for salt water could not achieve significant foam fractionation.

MORE FISH & FEED IN THE SAME POOL

MAT-KULING spent over 12 months testing different venturi injectors on skimmer bodies while feeding tank water with special venturi pumps to obtain the needed pressure and achieve high levels of air infusion into the water cyclone within the skimmer body. After many trials and FEA studies our fresh water protein skimming is now achieving equal, if not better to salt water viscous results.

The new freshwater protein skimmer has an upgraded body, high efficiency protein cap collector, higher head pump, new specially designed Venturi and optionally, we offer foam level automated controllers.

The new automation is a must have addition for those farms that seek to operate under controlled fresh water conditions. [Contact us](#) today to receive technical data, specifications and competitive pricing for your salmonid hatchery or any other demanding fresh water aquaculture application.

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[VIEW FW PROTEIN SKIMMERS](#)





OPTIONAL FEATURES

MODEL	Electrical Control Panel	Fom Collector Autowash	ORP Control	Ozone Generator	Recommend ed Ozone Dosage [g/h]	Recommend ed Ozone Dosage [oz/h]	Foam Level Automation	Operational Platform	ORP Probe Wet-Tap	Overflow Switch
MAT PS-300F	Optional	Optional	Optional	Optional	1	0.035	N/A	N/A	Optional	N/A
MAT PS-500F	Optional	Optional	Optional	Optional	2	0.071	N/A	N/A	Optional	Optional
MAT PS-630F	Optional	Optional	Optional	Optional	2	0.071	N/A	N/A	Optional	Optional
MAT PS-750F	Optional	Optional	Optional	Optional	4	0.141	N/A	N/A	Optional	Optional
MAT PS-1000F	Optional	Optional	Optional	Optional	8	0.282	Optional	N/A	Optional	Optional
MAT PS-1250F	Optional	Optional	Optional	Optional	12	0.423	Optional	N/A	Optional	Optional
MAT PS-1500F	Optional	Optional	Optional	Optional	25	0.882	Optional	Optional	Optional	Optional
MAT PS-2000F	Optional	Optional	Optional	Optional	36	1.270	Optional	Optional	Optional	Optional
MAT PS-2350F	Optional	Optional	Optional	Optional	50	1.764	Optional	Optional	Optional	Optional
MAT PS-2650F	Optional	Optional	Optional	Optional	75	2.646	Optional	Optional	Optional	Optional
MAT PS-3000F	Optional	Optional	Optional	Optional	100	3.527	Optional	Optional	Optional	Optional

FRESHWATER PROTEIN SKIMMER SPECIFICATIONS

METRIC SYSTEM

MODEL		MAT PS-300F	MAT PS-500F	MAT PS-630F	MAT PS-750F	MAT PS-1000F	MAT PS-1250F	MAT PS-1500F	MAT PS-2000F	MAT PS-2350F	MAT PS-2650F	MAT PS-3000F
Footprint [mm]	Depth	850	1065	1080	1250	1900	1850	2000	2350	2900	2840	3500
	Width	955	1150	1280	1500	1370	2350	2800	3350	4000	3220	4770
Diameter	[mm]	315	500	630	750	955	1250	1500	2000	2300	2650	2885
Height	[mm]	1880	1945	2280	2412	2650	3102	3654	3987	3940	4770	4670
Power Consumption	[kW/h]	1.20	2.50	3.30	3.30	4.50	4.50	9.00	12.00	12.00	12.00	18.00
Supply Voltage (50Hz)	[V]	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230	3~400/230
Inlet Size	[mm]	63	75	90	110	160	200	225	315	355	355	400
Inlet Qty	[pcs]	1	1	1	1	1	1	1	1	1	2	2
Inlet Level	[mm]	1196	1165	1410	1500	1590	1778	2300	2185	2210	2950	2723
Outlet Size	[mm]	75	90	110	140	225	250	280	315	400	315	400
Outlet Qty	[pcs]	1	1	1	1	1	1	1	1	1	2	2
Outlet Level	[mm]	1236	1252	1343	1518	1585	1845	2259	2179	2340	3000	2560
Body Volume	[m³]	0.09	0.24	0.47	0.71	1.29	2.74	4.50	8.09	11.00	18.7	20.5
@1.5 min Dwell Time Flow Rate	[m³/hr]	3.6	9.6	18.8	28.4	51.6	109.6	180.0	323.6	440.0	748.0	819.6
@2 min Dwell Time Flow Rate	[m³/hr]	3	7	14	21	39	82	135	243	330	561	615
Dry Weight	[kg]	102	137	180	210	330	420	730	975	1185	1400	2150
Operational Weight	[kgs]	192	435	700	970	1730	3265	5365	9800	13585	20500	25000
Body Material		PP	PP	PP	PP	PP	PP	PP	PP	PP	PP	PP

*USA Specifications
available upon request

VIEW FW PROTEIN SKIMMERS

RELATED EQUIPMENT

COLD PLASMA OZONE GENERATOR



DRUM FILTER



CONTACT INFORMATION

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