Supplementary Information

Purgar and Kapetanović et al. 2023: Dataset AqADAPT: Physicochemical parameters, *Vibrio* abundance, and species determination in water column of two Adriatic Sea aquaculture sites

Table S1: Limit of detection and determination of the tested water quality indicators.

Indicator	**Limit detection**
Temperature	0.1 °C
Salinity	0.01 ppt
TDS	1 mg/L
pH	0.01 units
Dissolved Oxygen (% saturation)	0.1 %
Conductivity	1 µS/cm
Transparency	0.5 m
Nitrates	0.01 mgN/L
Nitrites	0.001 mgN/L
Ammonia	0.01 mgN/L
Total phosphorus	0.001 mgP/L
Total nitrogen	0.1 mgN/L
Total particulate matter	Determined according to Paterson et al. 2003
Particulate organic matter	Determined according to Paterson et al. 2003
Particulate inorganic matter	Determined according to Paterson et al. 2003
Vibrio spp.	1 CFU/1mL
HPC	1 CFU/1mL
Total coliforms	1 organism/100mL
E. *coli*	1 organism/100mL
Enterococci	1 organism/100mL

Table S2: Measured abundances of: heterotrophic (total) bacteria (HPC), total coliforms (TC), *E. coli* and enterococci for each sampling site (Cres - Control, Cres - Fish Farm, Vrgada - Control and Vrgada - Fish Farm).

Date	Season	Location	Depth	HPC (CFU/ml)	TC (MPN/100mL)	*E. coli* (MPN/100mL)	Enterococci (MPN/100mL)
1.7.2019	Summer	Vrgada - Fish Farm	Surface	220	88	25,5	10
1.7.2019	Summer	Vrgada - Fish Farm	6m	260	81,5	10	<10,0
1.7.2019	Summer	Vrgada - Fish Farm	12m	780	20	10	<10,0
1.7.2019	Summer	Vrgada - Fish Farm	Bottom	660	20,5	<10,0	<10,0
1.7.2019	Summer	Cres - Fish Farm	Surface	90	487,0	<10,0	<10,0

1.7.2019	Summer	Cres - Fish Farm	6m	545	588,0	<10,0	<10,0
1.7.2019	Summer	Cres - Fish Farm	12m	295	1034	<10,0	<10,0
1.7.2019	Summer	Cres - Fish Farm	Bottom	185	10	<10,0	<10,0
10.12.2019	Autumn	Vrgada - Fish Farm	Surface	960	<10,0	<10,0	<10,0
10.12.2019	Autumn	Vrgada - Fish Farm	6m	960	<10,0	<10,0	<10,0
10.12.2019	Autumn	Vrgada - Fish Farm	12m	1760	<10,0	<10,0	<10,0
10.12.2019	Autumn	Vrgada - Fish Farm	Bottom	290	<10,0	<10,0	20
16.7.2020	Summer	Cres - Fish Farm	Surface	2800	1239,0	< 10,0	10,0
16.7.2020	Summer	Cres - Fish Farm	6m	3800	410,0	< 10,0	< 10,0
16.7.2020	Summer	Cres - Fish Farm	12m	6800	75	< 10,0	< 10,0
16.7.2020	Summer	Cres - Fish Farm	Bottom	28800	10	< 10,0	< 10,0
16.7.2020	Summer	Cres - Control	Surface	5000	< 10,0	< 10,0	< 10,0
16.7.2020	Summer	Cres - Control	6m	10100	< 10,0	< 10,0	< 10,0
16.7.2020	Summer	Cres - Control	12m	2300	< 10,0	< 10,0	< 10,0
16.7.2020	Summer	Cres - Control	Bottom	1100	< 10,0	< 10,0	< 10,0
18.7.2020	Summer	Vrgada - Fish Farm	Surface	30800	63	<10,0	<10,0
18.7.2020	Summer	Vrgada - Fish Farm	6m	1600	<10,0	<10,0	<10,0
18.7.2020	Summer	Vrgada - Fish Farm	12m	5600	20	<10,0	<10,0
18.7.2020	Summer	Vrgada - Fish Farm	Bottom	3500	441	<10,0	<10,0
18.7.2020	Summer	Vrgada - Control	Surface	8600	<10,0	<10,0	<10,0
18.7.2020	Summer	Vrgada - Control	6m	2700	<10,0	<10,0	<10,0
18.7.2020	Summer	Vrgada - Control	12m	18300	20	<10,0	<10,0
18.7.2020	Summer	Vrgada - Control	Bottom	13900	86	<10,0	<10,0
7.10.2020	Autumn	Cres - Fish Farm	Surface	9800	110,0	<10,0	<10,0
7.10.2020	Autumn	Cres - Fish Farm	6m	29000	243,0	<10,0	<10,0
7.10.2020	Autumn	Cres - Fish Farm	12m	19000	227	<10,0	<10,0
7.10.2020	Autumn	Cres - Fish Farm	Bottom	6300	<10,0	<10,0	<10,0
7.10.2020	Autumn	Cres - Control	Surface	20500	10	<10,0	<10,0
7.10.2020	Autumn	Cres - Control	6m	10900	<10,0	<10,0	<10,0
7.10.2020	Autumn	Cres - Control	12m	8200	738	<10,0	<10,0

7.10.2020	Autumn	Cres - Control	Bottom	1300	1467	<10,0	<10,0
5.10.2020	Autumn	Vrgada - Fish Farm	Surface	3400	408	<10,0	<10,0
5.10.2020	Autumn	Vrgada - Fish Farm	6m	600	933	30	<10,0
5.10.2020	Autumn	Vrgada - Fish Farm	12m	1400	1376	41	<10,0
5.10.2020	Autumn	Vrgada - Fish Farm	Bottom	800	933	10	<10,0
5.10.2020	Autumn	Vrgada - Control	Surface	2100	155	<10,0	<10,0
5.10.2020	Autumn	Vrgada - Control	6m	2100	226	10	<10,0
5.10.2020	Autumn	Vrgada - Control	12m	400	537	<10,0	<10,0
5.10.2020	Autumn	Vrgada - Control	Bottom	7600	364	<10,0	<10,0
17.2.2021	Winter	Cres - Fish Farm	Surface	16000	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Fish Farm	6m	26600	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Fish Farm	12m	9900	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Fish Farm	Bottom	200	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Control	Surface	36500	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Control	6m	10700	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Control	12m	12500	<10,0	<10,0	<10,0
17.2.2021	Winter	Cres - Control	Bottom	25200	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Fish Farm	Surface	36800	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Fish Farm	6m	18700	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Fish Farm	12m	19200	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Fish Farm	Bottom	39800	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Control	Surface	28900	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Control	6m	500	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Control	12m	1900	<10,0	<10,0	<10,0
15.2.2021	Winter	Vrgada - Control	Bottom	300	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Fish Farm	Surface	550	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Fish Farm	6m	50	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Fish Farm	12m	1450	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Fish Farm	Bottom	450	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Control	Surface	4500	<10,0	<10,0	<10,0

28.4.2021	Spring	Cres - Control	6m	950	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Control	12m	900	<10,0	<10,0	<10,0
28.4.2021	Spring	Cres - Control	Bottom	2400	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Fish Farm	Surface	2100	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Fish Farm	6m	750	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Fish Farm	12m	500	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Fish Farm	Bottom	250	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Control	Surface	3900	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Control	6m	2500	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Control	12m	10500	<10,0	<10,0	<10,0
27.4.2021	Spring	Vrgada - Control	Bottom	2750	<10,0	<10,0	<10,0
1.7.2021	Summer	Cres - Fish Farm	Surface	17550	937	70	<10.0
1.7.2021	Summer	Cres - Fish Farm	6m	2950	1235	105	<10.0
1.7.2021	Summer	Cres - Fish Farm	12m	8350	1095	100	<10.0
1.7.2021	Summer	Cres - Fish Farm	Bottom	20800	469	51	<10.0
1.7.2021	Summer	Cres - Control	Surface	11650	1075	10	<10.0
1.7.2021	Summer	Cres - Control	6m	20450	144	10	<10.0
1.7.2021	Summer	Cres - Control	12m	39200	1010	<10.0	<10.0
1.7.2021	Summer	Cres - Control	Bottom	3850	350	41	<10.0
3.7.2021	Summer	Vrgada - Fish Farm	Surface	14000	720	30	<10.0
3.7.2021	Summer	Vrgada - Fish Farm	6m	18150	787	10	<10.0
3.7.2021	Summer	Vrgada - Fish Farm	12m	4600	898	31	<10.0
3.7.2021	Summer	Vrgada - Fish Farm	Bottom	8000	937	73	<10.0
3.7.2021	Summer	Vrgada - Control	Surface	6000	1055	108	<10.0
3.7.2021	Summer	Vrgada - Control	6m	750	975	10	<10.0
3.7.2021	Summer	Vrgada - Control	12m	1800	663	20	<10.0
3.7.2021	Summer	Vrgada - Control	Bottom	700	1075	119	<10.0
25.8.2021	Summer	Cres - Fish Farm	Surface	1050	51	<10.0	<10.0
25.8.2021	Summer	Cres - Fish Farm	6m	6100	<10.0	<10.0	<10.0
25.8.2021	Summer	Cres - Fish Farm	12m	1800	<10.0	<10.0	<10.0

25.8.2021	Summer	Cres - Fish Farm	Bottom	250	<10.0	<10.0	10
25.8.2021	Summer	Cres - Control	Surface	2350	<10.0	<10.0	<10.0
25.8.2021	Summer	Cres - Control	6m	1600	<10.0	<10.0	<10.0
25.8.2021	Summer	Cres - Control	12m	1200	<10.0	<10.0	<10.0
25.8.2021	Summer	Cres - Control	Bottom	300	<10.0	<10.0	<10.0
24.8.2021	Summer	Vrgada - Fish Farm	Surface	1000	<10.0	<10.0	<10.0
24.8.2021	Summer	Vrgada - Fish Farm	6m	500	307	20	<10.0
24.8.2021	Summer	Vrgada - Fish Farm	12m	350	744	199	<10.0
24.8.2021	Summer	Vrgada - Fish Farm	Bottom	200	30	<10.0	<10.0
24.8.2021	Summer	Vrgada - Control	Surface	2700	151	<10.0	10
24.8.2021	Summer	Vrgada - Control	6m	1900	<10.0	<10.0	<10.0
24.8.2021	Summer	Vrgada - Control	12m	250	<10.0	<10.0	<10.0
24.8.2021	Summer	Vrgada - Control	Bottom	6200	<10.0	<10.0	<10.0

Table S3: Results of molecular identification of bacterial isolates from the Cres - Fish Farm (Ramljak et al. 2022).

Sample type	**Skin (n=28)**		**Seawater (n=32)**		**Sediment (n=21)**	
Species (percent identity, %)	**No.**	**%**	**No.**	**%**	**No.**	**%**
Alcaligenes faecalis (97,97 %)	1	3,6				
Aliivibrio finisterrensis (99,05 %)			1	3,1		
Alteromonas macleodii (99,61 %)			2	6,3		
Bacillus aquimaris (99,71-99,81 %)					7	33,3
Bacillus horikoshii (99,62 %)					1	4,8
Bacillus hwajinpoensis (99,44-100,00 %)	2	7,1			3	14,3
Bacillus idriensis (99,81 %)					1	4,8
Bacillus tianshenii (99,71 %)					1	4,8
Microbacterium oxydans (99,61 %)	1	3,6				
Paenisporosarcina quisquiliarum (99,52 %)					1	4,8
Photobacterium aphoticum (99,04-99,90 %)					4	19,0
Pseudoalteromonas arabiensis (99,22-99,52 %)	3	10,7				
Pseudoalteromonas hodoensis (99,52 %)			1	3,1		
Pseudoalteromonas phenolica (99,81 %)			1	3,1		
Pseudoalteromonas shioyasakiensis (99,42-99,71 %)			3	9,4		
Pseudoalteromonas tetraodonis (99,72-99,90 %)			3	9,4		
Pseudoalteromonas undina (100,00 %)	1	3,6				
Pseudochrobactrum saccharolyticum (98,92-99,53 %)	4	14,3				
Pseudomonas zhaodongensis (99,42 %)	1	3,6				
Shewanella marinintestina (99,91 %)					1	4,8
Vibrio alginolyticus (99,60-100,00 %)	5	17,9	2	6,3		
Vibrio chagasii (98,21-98,87 %)			6	18,8		
Vibrio crassostreae (99,14 %)			1	3,1		
Vibrio cyclitrophicus (99,47-100,00 %)	4	14,3				
Vibrio europaeus (99,79 %)			1	3,1		
Vibrio fortis (99,18-99,33 %)			2	6,3		
Vibrio gigantis (99,61 %)			1	3,1		
Vibrio harveyi (99,71-100,00 %)	4	14,3	1	3,1		
Vibrio hyugaensis (99,71 %)			1	3,1		
Vibrio kanaloae (99,23-100,00 %)			3	9,4		
Vibrio neocaledonicus (99,80-99,81 %)	2	7,1				
Vibrio toranzoniae (98,55-99,90 %)					2	9,5
Vibrio tubiashii (96,18-99,32 %)			3	9,4		

Table S4: Results of molecular identification of bacterial isolates from the Vrgada - Fish Farm (Ramljak et al. 2022).

Sample type	**Skin (n=20)**		**Seawater (n=22)**		**Sediment (n=22)**	
Species (percent identity, %)	**No.**	**%**	**No.**	**%**	**No.**	**%**
Achromobacter spanius (98,75 %)	1	5				
Aeromonas molluscorum (99,71 %)	1	5				
Agrococcus sp. (98,94 %)	1	5				
Erwinia billingiae (99,62 %)	1	5				
Ewingella americana (99,33-99,42 %)	2	10				
Halomonas aquamarina (99,52 %)			1	4,5		
Halomonas boliviensis (99,81 %)					1	4,5
Marinobacter litoralis (99,42-100,00 %)			13	59,1	2	9,1
Paenalcaligenes suwonensis (99,62-99,71 %)					2	9,1
Photobacterium lutimaris (98,40-98,80 %)					4	18,2
Pseudoalteromonas tetraodonis (99,90 %)			2	9,1	4	18,2
Pseudoalteromonas undina (99,52-99,81 %)			4	18,2	1	4,5
Pseudomonas azotoformans (99,81 %)	1	5				
Pseudomonas gessardii (99,81 %)	1	5				
Pseudomonas kribbensis (99,90 %)			1	4,5		
Pseudomonas poae (98,84 %)	1	5				
Pseudomonas sp. DSM 28142 (99,90 %)	1	5				
Pseudomonas zhaodongensis (99,71 %)			1	4,5		
Shewanella arctica (99,05-99,52 %)	3	15				
Vibrio anguillarum (98,87-99,71 %)	4	20				
Vibrio kanaloae (96,38-99,52 %)					2	9,1
Vibrio toranzoniae (99,42-100,00 %)	3	15			6	27,3

References

1. Paterson, K.J.; Schreider, M.J.; Zimmerman, K.D. Anthropogenic effects on seston quality and quantity and the growth and survival of Sydney rock oyster (Saccostrea glomerata) in two estuaries in NSW, Australia. Aquaculture 2003, 221, 407–426

2. Ramljak A, Vardić Smrzlić I, Kapetanović D, Barac F, Kolda A, Perić L, Balenović I, Klanjšček T, Gavrilović A. Skin Culturable Microbiota in Farmed European Seabass (*Dicentrarchus labrax*) in Two Aquacultures with and without Antibiotic Use. Journal of Marine Science and Engineering. 2022; 10(3):303. https://doi.org/10.3390/jmse10030303