

Treatment statistics visualised in Figure 1.

Biological – cleaner fish used (NDF 2021).

Year	Number of cleaner fish
2011	10 638 660
2012	13 902 779
2013	16 205 974
2014	24 467 170
2015	26 409 129
2016	37 358 628
2017	54 574 561
2018	48 929 019
2019	61 034 968

Mechanical – salmon treated (Barentswatch 2021, NDF 2021)

Year	Ton salmon treated					
	Optilicer	Thermolicer	Hydrolicer	FLS	SkaMik	Total
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	2 375	2 375
2014	2 335	0	0	24 237	31 188	57 760
2015	0	35 845	0	9 085	19 209	64 139
2016	66 592	688 718	226 448	75 734	181 563	1 239 055
2017	803 694	647 490	229 323	83 608	51 424	1 815 540
2018	1 114 264	625 081	378 216	115 915	151 620	2 385 096
2019	1 083 996	807 517	505 284	202 658	259 278	2 858 732

Chemical – active substance used (NIPH 2019)

Year	Kg active substance						
	Aza-methiphos	Delta-methrin	Cyper-methrin	Hydrogen Peroxide	Teflu-benzuron	Diflu-benzuron	Emamectin Benzoate
2011	2 437	54	48	3 144 000	26	704	105
2012	4 059	121	232	2 538 000	751	1 611	36
2013	3 037	136	211	8 262 000	1 704	3 264	51
2014	4 630	158	162	31 577 000	2 674	5 016	172
2015	3 904	115	85	43 246 000	2 509	5 896	259
2016	1 269	43	48	26 597 000	4 209	4 824	232
2017	204	14	8	9 277 000	293	1 803	128
2018	160	10	0	6 735 000	144	622	87
2019	154	10	0	4 523 000	183	1 296	114

Chemical – salmon treated (own calculations)

Ton salmon treated*								
Year	Azameth- -iphos	Delta- methrin	Cyper- methrin	Hydrogen Peroxide	Teflu- benzuron	Diflu- benzuron	Emamectin Benzoate	Total
2011	374708	814974	120737	74823	371	11175	300000	1696789
2012	624103	1826146	583562	60401	10729	25571	102857	3233370
2013	466963	2052528	530740	196625	24343	51810	145714	3468722
2014	711899	2384555	407487	751492	38200	79619	491429	4864681
2015	600271	1735594	213805	1029200	35843	93587	740000	4448299
2016	195119	648961	120737	632975	60129	76571	662857	2397349
2017	31367	211290	20123	220781	4186	28619	365714	882079
2018	24601	150921	0	160284	2057	9873	248571	596308
2019	23679	150921	0	107642	2614	20571	325714	631142
Dosage	6,50E-03	6,63E-05	3,98E-04	4,20E+01	7,00E-02	6,30E-02	3,50E-04	

*Kg active substance/Dosage (kg/tons) = ton salmon treated

Data that is plotted in figure 1.

Million tons of salmon treated, and millions of cleaner fish used			
Year	Biological	Mechanical	Chemical
2011	10,63866	0	1,6967886
2012	13,902779	0	3,23336999
2013	16,205974	0,002375083	3,46872224
2014	24,46717	0,057760134	4,86468107
2015	26,409129	0,064139063	4,44829935
2016	37,358628	1,239055043	2,39734867
2017	54,574561	1,815539694	0,88207892
2018	48,929019	2,385096218	0,59630845
2019	61,034968	2,858732276	0,63114154

References

NDF (Norwegian Directorate of Fisheries) (2021). Retrieved March 5th 2021, from <https://www.fiskeridir.no/Akvakultur/Tall-og-analyse/Akvakulturstatistikk-tidsserier/Rensefisk> (in Norwegian)

Barentswatch (2021). Measures against salmon lice. Retrieved March 5th 2021, from <https://www.barentswatch.no/nedlasting/fishhealth/treatments> (in Norwegian) / Combined with biomass statistics from The Norwegian Directorate of Fisheries.

NIPH (Norwegian Institute of Public Health) (2019). Use of drugs in fish farming. Retrieved March 5th 2021, from <https://www.fhi.no/hn/legemiddelbruk/fisk/2019-bruk-av-legemidler-i-fiskeoppdrett/> (in Norwegian)

Own calculations. The average dosage was defined using chemical treatment data from 2 Norwegian salmon producers operating along the Norwegian coastline. Chemical treatments performed between 2017 and 2019 on 36 localities were extrapolated.

Summary of Product Characteristics (SPC) were also used to cross-reference the sources (<https://www.felleskatalogen.no/medisin/>).