# Supplementary file

## Sources for Table 1 and Table 2

|  |  |
| --- | --- |
| **Country** | **Available information on use of organophosphates (OP) and pyrethroids (PYR)** |
| Canada | OP not allowed from 2000 to November 20091. OP has been allowed, with restrictions, since 20091. Use in 2016: 878.5 kg active ingredient2. PYR allowed from mid 2009 to mid 20103.  |
| Iceland | No delousing chemicals have been used. Pers. Comm. Bernhard Laxdal, fish veterinarian Iceland. |
| Faroe Islands | Statistics provided by Hjalti Gunnarstein, National Pharmacy Service |
| Shetland | Database: http://aquaculture.scotland.gov.uk/data/data.aspx |
| Scotland | Database: http://aquaculture.scotland.gov.uk/data/data.aspx |
| Ireland | OP was not available from 2002 to 2007, and not after 20124. PYR have been available since 20024. PYR use in kg active ingredient: 2004: 1.83 kg, 2005: 2.44 kg, 2006: 3.3 kg5. |
| Norway | Database: https://www.fhi.no/hn/legemiddelbruk/ |

1. ACFFA. 2017. 2016 New Brunswick Annual Sea Lice Management Report. https://static1.squarespace.com/static/56e827cb22482efe36420c65/t/58e3b26b893fc0130751d5ce/1491317360506/2016+Sea+Lice+Mgt+Report.pdf

2. Database: https://static1.squarespace.com/static/56e827cb22482efe36420c65/t/58e3b26b893fc0130751d5ce/1491317360506/2016+Sea+Lice+Mgt+Report.pdf

3. Whyte SK, Westcott JD, Jimenez D, Revie CW, Hammell KL. 2014 Assessment of sea lice (*Lepeophtheirus salmonis*) management in New Brunswick, Canada using deltamethrin (AlphaMax®) through clinical field treatment and laboratory bioassay responses. *Aquaculture* **422-423,** 54-62.

4. National Survey of Sea lice (*L. salmonis* Krøyer and *C. elongatus* Nordmann) on Fish Farms in Ireland. Yearly reports by O’Donohoe et al. from 2002 to 2017. <https://oar.marine.ie/>

5. Marine Institute. 2007. Veterinary treatments and other substances used in finfish aquaculture in Ireland. [https://oar.marine.ie/bitstream/handle/10793/859/Veterinary%20treatments%20and%20other%20substances%20used%20in%20finfish%20aquaculture%20in%20Ireland%20Final%5b1%5d.pdf?sequence=1&isAllowed=y](https://oar.marine.ie/bitstream/handle/10793/859/Veterinary%20treatments%20and%20other%20substances%20used%20in%20finfish%20aquaculture%20in%20Ireland%20Final%5B1%5D.pdf?sequence=1&isAllowed=y)

## Table S1

## Overview of *L. salmonis* samples and genotype results (S or R to PYR. SS, RS or RR to OP). Hosts marked with (W) are wild, the rest are farmed.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region/year** | **Host** | **N** | **S-RR** | **S-RS** | **S-SS** | **R-RR** | **R-RS** | **R-SS** |
| Russia 2000 | Atlantic salmon (W) | 31 | 0 | 4 | 27 | 0 | 0 | 0 |
| Finnmark 2000 | Atlantic salmon | 30 | 0 | 6 | 24 | 0 | 0 | 0 |
| Scotland 2002 | Atlantic salmon | 30 | 10 | 20 | 0 | 0 | 0 | 0 |
| Canada 2002 | Atlantic salmon | 30 | 0 | 7 | 23 | 0 | 0 | 0 |
| Western Norway 2002 | Atlantic salmon | 29 | 0 | 9 | 20 | 0 | 0 | 0 |
| Sørlandet 2002 | Atlantic salmon | 30 | 0 | 0 | 30 | 0 | 0 | 0 |
| Western Norway 2009 | Atlantic salmon | 93 | 0 | 8 | 62 | 0 | 0 | 25 |
| Northern Norway 2009 | Atlantic salmon | 90 | 0 | 3 | 26 | 0 | 7 | 54 |
| Ireland 2009 | Atlantic salmon | 95 | 11 | 9 | 21 | 16 | 13 | 25 |
| Shetland 2009 | Atlantic salmon | 96 | 0 | 0 | 1 | 1 | 10 | 84 |
| Faroes 2009 | Atlantic salmon | 96 | 0 | 5 | 91 | 0 | 0 | 0 |
| Canada 2009 | Atlantic salmon | 96 | 0 | 33 | 63 | 0 | 0 | 0 |
| Iceland 2016 | Atlantic salmon | 66 | 0 | 8 | 50 | 0 | 1 | 7 |
| Ireland 2016 | Atlantic salmon | 66 | 7 | 35 | 10 | 4 | 7 | 3 |
| Faroes 2016 | Atlantic salmon | 56 | 14 | 22 | 18 | 0 | 1 | 1 |
| Greenland 2016 | Atlantic salmon (W) | 65 | 1 | 9 | 43 | 0 | 4 | 8 |
| Scotland 2016 | Atlantic salmon | 66 | 32 | 2 | 0 | 30 | 2 | 0 |
| Canada 2017 | Atlantic salmon | 69 | 63 | 6 | 0 | 0 | 0 | 0 |
| Finnmark 2014 | Sea trout (W) | 50 | 1 | 1 | 26 | 2 | 8 | 12 |
| Namsfjord (W Norway) 2014 | Sea trout (W) | 50 | 4 | 3 | 11 | 14 | 16 | 2 |
| Trondheimsfjord (W Norway) 2014 | Sea trout (W) | 50 | 1 | 3 | 2 | 26 | 11 | 7 |
| Romsdalsfjord (W Norway) 2014 | Sea trout (W) | 177 | 0 | 6 | 12 | 22 | 86 | 51 |
| Sognefjord (W Norway) 2014 | Sea trout (W) | 48 | 1 | 1 | 0 | 11 | 20 | 15 |
| Hardangerfjord (W Norway) 2014 | Sea trout (W) | 50 | 1 | 5 | 1 | 12 | 20 | 11 |
| Rogaland (W Norway) 2014 | Sea trout (W) | 48 | 2 | 1 | 7 | 4 | 25 | 9 |
| Sørlandet (S Norway) 2014 | Sea trout (W) | 50 | 0 | 3 | 42 | 0 | 1 | 4 |
| Finnmark 2014 | Atlantic salmon (W) | 49 | 2 | 3 | 35 | 0 | 4 | 5 |
| Namsfjord (W Norway) 2014 | Atlantic salmon (W) | 50 | 1 | 3 | 38 | 0 | 2 | 6 |
| Romsdalsfjord (W Norway) 2014 | Atlantic salmon (W) | 50 | 0 | 5 | 31 | 1 | 6 | 7 |
| Storfjord (W Norway) 2014 | Atlantic salmon (W) | 50 | 2 | 5 | 31 | 5 | 4 | 3 |
| Hardangerfjord (W Norway) 2014 | Atlantic salmon (W) | 50 | 0 | 2 | 26 | 8 | 7 | 7 |
| Rogaland (W Norway) 2014 | Atlantic salmon (W) | 45 | 1 | 7 | 22 | 3 | 4 | 8 |
| Sørlandet (S Norway) 2014 | Atlantic salmon (W) | 10 | 1 | 0 | 7 | 1 | 0 | 1 |

## Figure S1

Figure S1: Yearly production in Norway by region. The numbers represent tons of slaughtered salmon and rainbow trout. Data obtained from Statistics Norway (https://www.ssb.no/jord-skog-jakt-og-fiskeri/statistikker/fiskeoppdrett/aar).