

Imidacloprid - A Neonicotinoid Insecticide Toxic to Aquatic Life (June 2020)



Scottish Salmon Watch is [calling for a ban on the use of Imidacloprid \(marketed by Benchmark as BMK08/Ectosan\) in salmon farming](#) with the [Scottish Greens "deeply concerned" about a proposed field trial in Loch Ailort.](#)

 **Don Staniford**
@TheGAAIA

Scottish Greens "deeply concerned" at Mowi's field trial of Neonicotinoid @markruskell @strathearnrose @scotgp @FergusEwingMSP @SP_ECCLR @ScottishEPA "Imidacloprid has been classed as an environmental hazard" @WeAreBenchmark @MowiScotlandLtd @vmdgovuk tinyurl.com/yb3u3ds8



The Scottish Parliament
Pàrlamaid na h-Alba

Mark R
Of
The Scottish

ningham MSP
ary for Environment, Climate Change, and Land Reform

3rd May 2020
Secretary,

Proposed trial of Ectosan at Ardnish salmon farm

to you to raise my concerns over recent reports that imidacloprid (brand name pesticide, may be trialled in Scottish Fish Farms. Following initial information showing industry lobbying to use Ectosan, today I learned that Mowi has agreed to trialling the chemical at their salmon farm at Ardnish.

Ectosan will be handled, and if there have been any other requests to trial this chemical in Scotland, I would also ask that you share any information the Scottish Government have received over the safety of Ectosan in the marine environment, including trials in other countries.

Furthermore, I would like to remind you of the recommendations of the joint inquiry into salmon farming in Scotland, conducted in 2018 by the Rural Economy and Environment, Climate Change and Land Reform Committees. These recommendations included stronger measures on the use of medicines and chemicals in salmon farms, including addressing the data and analysis gaps related to the discharge of medicines and chemicals into the environment; the call on Sepe and the Scottish Government to consider the environmental impact of medicines used by the industry; and recommendation to make information and data on medicine use by the industry publicly available. I would like to ask how these recommendations are being taken into account in the handling of this request to trial Ectosan in Scotland.

I need not remind you that the European Commission previously banned the use of neonicotinoids on plants in 2018 due to the risk to bees. Imidacloprid has been classed as an 'environmental hazard' by US government scientists, who have warned that it could be "very toxic to aquatic life with long lasting effects". I also understand that the Rivers Trust, which represents river management bodies in England, Wales and Ireland, has warned that neonicotinoids in our rivers endanger the lives of fish and other wildlife, but also makes it extremely difficult to effectively bring about change in the industry.

The global biodiversity crisis we face means it has never been more important that Scotland faces up to its responsibility to protect wildlife and habitats. If there is any evidence at all that Ectosan has a detrimental impact on our marine ecosystem, it is not acceptable for in situ trials to take place in Scotland's waters.

I would appreciate any update you are able to provide on this issue, in addition to responding to my questions above.

Yours Sincerely,



6:32 PM · May 21, 2020 · Twitter Web App

Please find enclosed below scientific papers, media coverage, press releases and other background information on Imidacloprid:

Scientific References:

[The new aspects of using some safe feed additives on alleviated imidacloprid toxicity in farmed fish: a review.](#) Reviews in Aquaculture, April 2020

[Coral Reef Organisms: Differential Sensitivities to an Agricultural Pesticide.](#) Ocean Sciences, February 2020

[Environmental pollution from pet parasiticides.](#) Veterinary Record, January 2020

[Sub-lethal Effects of Imidacloprid on Nile Tilapia \(*Oreochromis niloticus*\).](#) Water, Soil & Air Pollution, January 2020

[The effect of air exposure, handling stress and imidacloprid on the susceptibility of *Crassostrea gigas* to ostreid herpesvirus 1 \(OsHV-1\).](#) Aquaculture Environment Interactions, December 2019

[Neonicotinoids disrupt aquatic food webs and decrease fishery yields.](#) Science, November 2019

[Effects of insecticides, fipronil and imidacloprid, on the growth, survival, and behavior of brown shrimp *Farfantepenaeus aztecus*.](#) PLoS One, October 2019

[Acute Toxicity of Imidacloprid on the Developmental Stages of Common Carp *Cyprinus carpio*.](#) Toxicology & Environmental Health Sciences, October 2019

[A neonicotinoid insecticide reduces fueling and delays migration in songbirds.](#) Science, September 2019

[Imidacloprid Induces Adverse Effects on Fish Early Life Stages That Are More Severe in Japanese Medaka \(*Oryzias Latipes*\) Than in Zebrafish \(*Danio Rerio*\).](#) Chemosphere, June 2019

[Trends in Neonicotinoid Pesticide Residues in Food and Water in the United States, 1999-2015.](#) Environmental Health, January 2019

[Neonicotinoid insecticide mixtures: Evaluation of laboratory-based toxicity predictions under semi-controlled field conditions.](#) Environmental Pollution, December 2018

[Neonicotinoid exposure disrupts bumblebee nest behavior, social networks, and thermoregulation.](#) Science, November 2018

[Were the sharp declines of dragonfly populations in the 1990s in Japan caused by fipronil and imidacloprid? An analysis of Hill's causality for the case of *Sympetrum frequens*.](#) Environmental Science & Pollution Research, October 2018

[Chronic effects of an environmentally-relevant, short-term neonicotinoid insecticide pulse on four aquatic invertebrates.](#) Science of the Total Environment, October 2018

[Imidacloprid Poisoning: An Emerging Cause of Potentially Fatal Poisoning.](#) Indian Journal of Critical Care Medicine, November 2017

[An update of the Worldwide Integrated Assessment \(WIA\) on systemic insecticides. Part 2: impacts on organisms and ecosystems.](#) Environmental Science & Pollution Research, November 2017

[Neonicotinoids act like endocrine disrupting chemicals in newly-emerged bees and winter bees.](#) Scientific Reports, September 2017

[Comparative ecotoxicity of imidacloprid and dinotefuran to aquatic insects in rice mesocosms.](#) Ecotoxicology & Environmental Safety, April 2017

[Peer review of the pesticide risk assessment for the active substance imidacloprid in light of confirmatory data submitted.](#) European Food Safety Authority, November 2016

[Contamination of the Aquatic Environment with Neonicotinoids and its Implication for Ecosystems.](#) Frontiers in Environmental Science, November 2016

[Sensitivity of the Early-Life Stages of Freshwater Mollusks to Neonicotinoid and Butenolide Insecticides.](#) Environmental Pollution, November 2016

[A Screening of Multiple Classes of Pharmaceutical Compounds for Effect on Preadult Salmon Lice *Lepeophtheirus Salmonis*.](#) Journal of Fish Diseases, October 2016

[Neonicotinoid contamination of global surface waters and associated risk to aquatic invertebrates: A review.](#) Environment International, January 2015

[Effects of neonicotinoids and fipronil on non-target invertebrates.](#) Environmental Science & Pollution Research, September 2014

[Environmental fate and exposure; neonicotinoids and fipronil.](#) Environmental Science & Pollution Research, August 2014

[Systemic pesticide concerns extend beyond the bees.](#) Current Biology, August 2014

[Risks of large-scale use of systemic insecticides to ecosystem functioning and services.](#) Environmental Science & Pollution Research, July 2014

[A review of the direct and indirect effects of neonicotinoids and fipronil on vertebrate wildlife.](#) Environmental Science & Pollution Research, June 2014

[An overview of the environmental risks posed by neonicotinoid insecticides.](#) Journal of Applied Ecology, June 2013

[Macro-Invertebrate Decline in Surface Water Polluted with Imidacloprid.](#) PLoS One, May 2013

[The neonicotinoid imidacloprid shows high chronic toxicity to mayfly nymphs.](#) Environmental Toxicology & Chemistry, February 2013

[The Neonicotinoid Insecticide Imidacloprid Repels Pollinating Flies and Beetles at Field-Realistic Concentrations.](#) PLoS One, January 2013

[Exposure to multiple cholinergic pesticides impairs olfactory learning and memory in honeybees.](#) Journal of Experimental Biology, 2013

[Cumulative ecological impacts of two successive annual treatments of imidacloprid and fipronil on aquatic communities of paddy mesocosms.](#) Ecotoxicology & Environmental Safety, June 2012

[Effects of imidacloprid exposure on *Chironomus riparius* Meigen larvae: Linking acetylcholinesterase activity to behaviour.](#) Ecotoxicology & Environmental Safety, July 2011

[Behaviour and Growth of *Chironomus riparius* Meigen \(Diptera: Chironomidae\) under Imidacloprid Pulse and Constant Exposure Scenarios.](#) Water, Air, & Soil Pollution, December 2010

[Hazard identification of imidacloprid to aquatic environment.](#) Chemosphere, August 2009

[Acute Human Self-Poisoning With Imidacloprid Compound: A Neonicotinoid Insecticide.](#) PloS One, April 2009

[Fatal Intoxication With Imidacloprid Insecticide.](#) American Journal of Emergency Medicine, June 2008

[Acute and Chronic Toxicity of Imidacloprid to the Aquatic Invertebrates *Chironomus tentans* and *Hyalella azteca* under Constant- and Pulse-Exposure Conditions.](#) Archives of Environmental Contamination & Toxicology, January 2008

[Comparative toxicity of imidacloprid, of its commercial liquid formulation and of diazinon to a non-target arthropod, the microcrustacean *Daphnia magna*.](#) Chemosphere, July 2007

[Acute toxicity of imidacloprid and fipronil to a nontarget aquatic insect, *Simulium vittatum* Zetterstedt cytospecies IS-7.](#) Bulletin of Environmental Contamination & Toxicology, May 2005

Media Articles:

["Mowi asks to trial new lice drug in Scotland"](#)

["What's Bad for Bees Could Be Bad for Marine Life, Too"](#)

["Benchmark sea lice treatment identity revealed"](#)

["Calls for greater transparency over 'toxic' new fish farm product"](#)

["Fish farm companies 'bidding to use bee-harming pesticide'"](#)

["New lice treatment now in hands of regulators"](#)

["Sea Lice Clean Treat"](#)

["Aquaculture biotech group Benchmark raises \\$50 million to launch new sealice treatment"](#)

["Benchmark seeks millions more for novel sea lice treatments"](#)

["Official fears revealed over toxic threat of salmon trade"](#)

["Benchmark: 'Breakthrough' salmon lice treatment combo could be available by end of 2020"](#)

["How the world's most widely used insecticide led to a fishery collapse - Neonicotinoids wiped out plankton and fish in a Japanese lake, and are likely harming aquatic ecosystems worldwide, new research suggest"](#)

["Oysters growers lose battle to use neonicotinoid"](#)

["Oyster growers agree to abandon quest to use controversial insecticide in Southwest Washington tidelands"](#)
["Pesticide banned in oyster farming"](#)
["As pesticide ban looms, oyster growers fear the worst"](#)
["Neonicotinoid pesticides killing songbirds by turning them 'anorexic'"](#)
["Fergus Ewing should stop Michael Russell on pesticides, says leaked email"](#)
["Alarm over toxic pesticide sprayed on Scotland's woodlands"](#)
["Groundbreaking new sea lice treatment: "All the trials have shown 100 per cent efficacy"](#)
["Two-year wait for 'next generation' lice treatment"](#)
["New lice bath '100% effective' and pollution-free"](#)
["Patent sought for neonicotinoid-based sea louse treatment"](#)
["Chemotherapeutants against salmon lice *Lepeophtheirus salmonis* –screening of efficacy"](#)
["Dette er det nye lusemiddelet Salmo Pharma skal teste ut"](#)
["Neonicotinoids: Scottish government calls for ban to be delayed"](#)

Press Releases & Blogs:

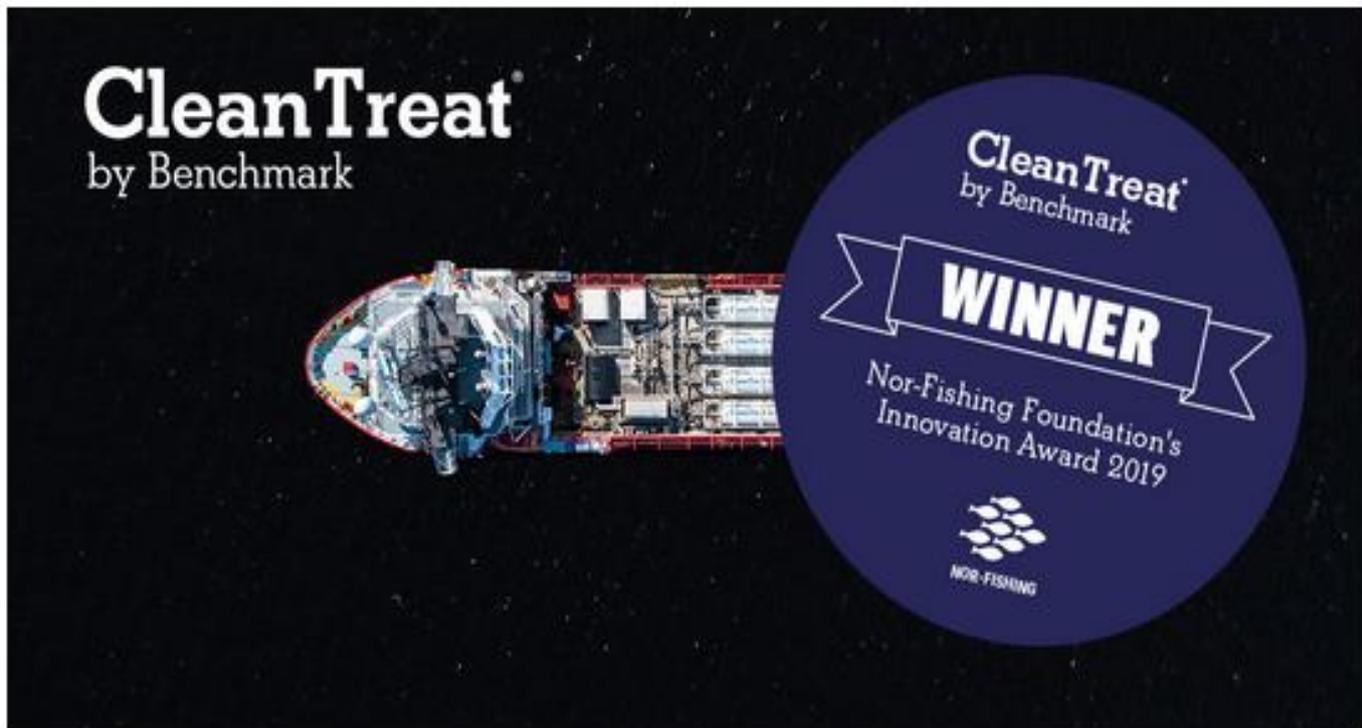
[Scottish Greens "Deeply Concerned" at Mowi's Field Trial of Neonicotinoid Imidacloprid in Loch Ailort](#)
[Letter to the Prince of Wales re. bee-killing Imidacloprid use at royal warrant holder Mowi](#)
[Secret Trials: 'Royal' Salmon Doused with Bee-Killing Insecticide Imidacloprid?](#)
[Follow the Salmoney - the Norwegian tobacco billionaire behind the Neonicotinoid Imidacloprid](#)
[BMK08 & CleanTreat](#)
[Letter to SEPA: Please Come Clean on Imidacloprid!](#)
[Letter to Scottish Ministers, SEPA & the VMD re. Imidacloprid](#)
[FOI requests on Imidacloprid to SEPA, VMD & the Scottish Government](#)
[Revealed: Toxic Neonicotinoid Insecticide Used to 'CleanTreat' Lousy Salmon](#)
[Cleaning Tox-Sick Scottish Salmon](#)
[CleanTreat: FOI Disclosures by the Scottish Government to Scottish Salmon Watch](#)
[ASC interpretation request for Imidacloprid by Mowi Norway](#)
[Agreement Protects Willapa Bay and the Willapa National Wildlife Refuge from Highly Toxic Neonicotinoid Pesticides](#)
[Legal Action Defends Washington's Decision to Keep Neurotoxins Out of Willapa Bay, Grays Harbor](#)
[Heavy Neonicotinoid Insecticide Contamination Damaging British Rivers](#)
[NRDC to EPA: Red Flags on Imidacloprid Health Risks](#)
[Further evidence shows bees at risk from neonicotinoid pesticides](#)

European Legislation Banning Imidacloprid in 2018:

[Further restrictions on neonicotinoids agreed](#)
[Commission Implementing Regulation \(EU\) 2018/783 of 29 May 2018 amending Implementing Regulation \(EU\) No 540/2011 as regards the conditions of approval of the active substance imidacloprid](#)
[Environment Secretary backs further restrictions on neonicotinoid pesticides](#)
[UK will back total ban on bee-harming pesticides, Michael Gove reveals](#)
[UK Expert Committee on Pesticides advice: Risks arising from the use of neonicotinoid pesticides](#)
[Neonicotinoid and fipronil insecticides harm birds and fish and reduce their food supply](#)

Videos:

Find out more at <http://cleantreat.no/>



Search



D10 Aquatic Blast Breakthru Pitch

189 views • Dec 5, 2014

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Patents:

[US Patent - Fish feed compositions containing a neonicotinoid for preventing and treating parasite infections](#)

[WO2015198247 - FISH FEED COMPOSITIONS CONTAINING A NEONICOTINOID FOR PREVENTING AND TREATING PARASITE INFECTIONS](#)

[Patent sought for neonicotinoid-based sea louse treatment](#)



US 20170135956A1

(19) **United States**
(12) **Patent Application Publication** (10) **Pub. No.: US 2017/0135956 A1**
O'HALLORAN et al. (43) **Pub. Date: May 18, 2017**

(54) **FISH FEED COMPOSITIONS CONTAINING A NEONICOTINOID FOR PREVENTING AND TREATING PARASITE INFECTIONS**

(71) Applicants: **John O'HALLORAN**, Old Ridge (CA); **John Terence DROST**, Douglas (CA)

(72) Inventors: **John O'HALLORAN**, Old Ridge (CA); **John Terence DROST**, Douglas (CA)

(21) Appl. No.: **15/321,896**

(22) PCT Filed: **Jun. 24, 2015**

(86) PCT No.: **PCT/IB2015/054749**
§ 371 (c)(1),
(2) Date: **Dec. 23, 2016**

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A61K 9/16 (2006.01)
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A23K 10/30 (2006.01)
A61K 31/4439 (2006.01)
A23K 50/80 (2006.01)

(52) **U.S. Cl.**
CPC *A61K 9/167* (2013.01); *A61K 31/4439* (2013.01); *A61K 9/1617* (2013.01); *A61K 9/1658* (2013.01); *A61K 9/0053* (2013.01); *A23K 50/80* (2016.05); *A23K 20/158* (2016.05); *A23K 10/30* (2016.05); *A23K 20/10* (2016.05)

(57) **ABSTRACT**
The present disclosure relates to methods of preventing or treating parasite infection in a plurality of fish in need thereof, comprising administering to the fish an effective amount of a medicated fish feed. The medicated fish feed comprises fish feed granules or pellets coated with a composition comprising a neonicotinoid such as imidacloprid and a carrier having a high apparent digestibility coefficient such as a processed/cooked corn protein concentrate.

Related U.S. Application Data

(60) Provisional application No. 62/016,389, filed on Jun. 24, 2014.

[Norwegian patent in 2013](#)

Norsk varemerketidende internasjonale

(111) **Int.reg.nr:** 1104453
(151) **Int.reg.dat:** 2011.12.03
(180) **Registreringen utløper:** 2021.12.03
(210) **Nasj. ref.nr:** 201200992
(220) **Notifikasjonsdato:** 2012.02.02
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(540) **Gjengivelse av merket:**

ECTOSAN

(541) Merket er et **ordmerke i standard font**
(730) **Innehaver:**
FVG Ltd, 22 Carsegate Road, GB-IV38EX
INVERNESS, Storbritannia
(740) **Fullmektig:**
Zacco Norway AS, Postboks 2003 Vika, 0125 OSLO,
Norge
(511) **Vare-/ tjenestefortegnelse:**
Klasse:5 Veterinary preparations; disinfectants;
preparations for destroying vermin; pesticides.
Besluttet gjeldende dato i Norge:
2013.03.13
(450) **Kunngjøringsdato:** 2013.03.18

Imidacloprid - a toxic neonicotinoid insecticide "very toxic to aquatic life" and "hazardous to the aquatic environment"

Imidacloprid

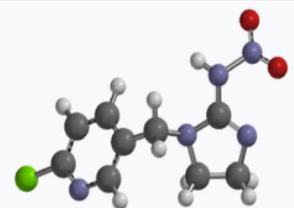
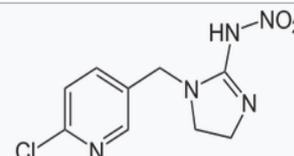
From Wikipedia, the free encyclopedia

Imidacloprid is a systemic [insecticide](#) that acts as an [insect neurotoxin](#) and belongs to a class of chemicals called the [neonicotinoids](#) which act on the [central nervous system](#) of insects. The chemical works by interfering with the transmission of stimuli in the insect nervous system. Specifically, it causes a blockage of the [nicotinic neuronal pathway](#). By blocking [nicotinic acetylcholine receptors](#), imidacloprid prevents [acetylcholine](#) from [transmitting](#) impulses between nerves, resulting in the insect's paralysis and eventual death. It is effective on contact and via stomach action.^[1] Because imidacloprid binds much more strongly to insect neuron [receptors](#) than to mammal neuron receptors, this [insecticide](#) is more toxic to insects than to mammals.^[2]

As of 1999, imidacloprid was the most widely used insecticide in the world.^[3] Although it is now off patent, the primary manufacturer of this chemical is Bayer CropScience (part of [Bayer AG](#)). It is sold under many names for many uses; it can be applied by soil injection, [tree injection](#), application to the skin of the plant, broadcast foliar, ground application as a granular or liquid formulation, or as a pesticide-coated [seed treatment](#).^{[4][5]} Imidacloprid is widely used for pest control in agriculture. Other uses include application to foundations to prevent termite damage, pest control for gardens and turf, treatment of domestic pets to control fleas,^[2] protection of trees from boring insects,^[6] and in preservative treatment of some types of lumber products.^[7]

[Contents](#) [\[hide\]](#)

Imidacloprid^[1]



Names

IUPAC name

N-{1-[(6-Chloro-3-pyridyl)methyl]-4,5-dihydroimidazol-2-yl}nitramide

PubChem Imidacloprid (Compound)

12 Safety and Hazards



12.1 Hazards Identification



12.1.1 GHS Classification



Showing 1 of 4 [View More](#)

Pictogram(s)	<p>Irritant Environmental Hazard</p>
Signal	Warning
GHS Hazard Statements	H302: Harmful if swallowed [Warning Acute toxicity, oral] H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard] H410: Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Imidacloprid, [according to the Material Safety Data Sheet of one of the insecticide formulations on the market](#), is "highly toxic to aquatic invertebrates" and the chemical company warns users "do not apply directly to water" and "do not contaminate water when disposing of equipment washwaters".

MATERIAL SAFETY DATA SHEET

Quali-Pro[®] Imidacloprid 2F Turf & Ornamental

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This product is highly toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Another [Imidacloprid formulation warns](#):

Kohinor 350 SC

Synonyms

Imidacloprid 350 SC



Signal word

Warning

Hazard Statements

H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

P102 - Keep out of reach of children

P501 - Dispose of contents/ container to an approved waste disposal plant

More information on 'Marine Pollutant' labelling is [available via ChemSafe Pro](#):



**Environmentally hazardous
substance mark**

Read more via "[Environmentally Hazardous Labels](#)":

LABELLING & MARKING MARINE POLLUTANTS

If a package containing a marine pollutant is to travel by sea at any time during transport, you must comply with the more stringent IMO regulations and label and mark as such.



Benchmark refuse to admit that BMK08/Ectosan is Imidacloprid:

The Norwegian-owned company behind Imidacloprid use in salmon farming only publicly conceded that BMK08/Ectosan is Imidacloprid in March 2020 [following media exposure](#). A [media release from Benchmark on 20 March 2020](#) included:



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20 MARCH 2020

BMK08 & CleanTreat®

We are aware of the recent coverage surrounding our new sea lice medicine, BMK08, and our CleanTreat® purification system. As BMK08 is in the regulatory process we are restricted in what we can say about the medicine and cannot promote the product before a Marketing Authorisation is granted. The statements below are a summary of facts and not in any way a promotion of the product.

- BMK08 is a new sea lice medicine, that will be used exclusively together with our water purification system CleanTreat®
- The medicine will only be used in closed treatment systems and the water will be purified before being returned into the sea (CleanTreat® purifies the water, find out more [here](#))
- A team of chemists on board the vessel control the system ensuring only purified water is returned to the Ocean
- The medicine has been developed under strict European Union guidelines.
- Field trials have been successfully carried out exclusively in Norway proving BMK08 is an effective and safe medicine for the treatment of sea lice on salmon.
- CleanTreat® has proven to be efficient, controlled and effective at full scale operations with BMK08



Medicine

BMK08 is a new generation of medicine developed under the strict veterinary medicinal products guidelines of the European Union (Directive 2001/82 as amended). The active ingredient is imidacloprid, as published by the [Aquaculture Stewardship Council](#) in March 2019, as part of their assessment and subsequent classification as part of their quality compliance scheme (Pesticide Treatment Index), where BMK08 used with the propriety CleanTreat® system was given a score of zero, the highest score for environmental protection and sustainability.

Closed treatment system

BMK08 has been developed to work exclusively in a closed treatment system (e.g. wellboats) where fish are treated with BMK08 in the wells of a wellboat and then separated from treatment water, rinsed to remove any residue on the surface and returned to the sea pens. All medicine is retained in the wellboat and not exposed to the environment. The treatment water is then processed in Benchmark's CleanTreat® purification system to remove the medicine and capture the medicine before returning purified water back to the sea. This is a transformative step for the industry to reduce the risk of environmental impact while helping to manage the most significant parasite in Salmon farming, sea lice.



Medicine removal – CleanTreat® technology

CleanTreat® is a technology developed to remove medicines from treatment water on a large scale. The process has been shown to be effective at removing several classes of medicine from water. BMK08 will only be licenced to be used with the CleanTreat® system.

During the CleanTreat® process the water is constantly tested to ensure only purified water is returned to the sea. A quality certificate will be generated for every use of the system to ensure compliance to the highest standards. Testing is carried out real time onboard the vessels and the purification process is overseen by a team of chemists.

CleanTreat® has the added benefit of removing organic material from the treatment water including sea lice and sea lice egg strings so helping to prevent resistance development against the medicine. The waste, including collected medicine, is removed and incinerated, and certification of the safe disposal of each batch will be issued.

Media Reports on Field Trial in Loch Ailort by Mowi:

Fish Farming Expert [reported \(22 May 2020\)](#):

Mowi asks to trial new lice drug in Scotland



The CleanTreat system on trial in Norway, where Ectosan has proved 99% effective. Photo: Benchmark.

Mowi Scotland has taken a first step towards the use of Benchmark's lice medicine Ectosan in the country's salmon farming industry.

By [Gareth Moore](#)

The company has asked the Scottish Environment Protection Agency (SEPA) for its support in carrying out a field trial at its Ardnish site, Loch Ailort, which is used for research.

Mowi, Scotland's largest salmon farmer, discussed the possibility of a trial at a liaison meeting with SEPA staff and followed it up with a letter to the agency in March, although there has been no advancement since then.

Imidacloprid

Ectosan, now called BMK08 by Benchmark, is based on the neonicotinoid insecticide imidacloprid, which as of 1999 was the most widely used insecticide in the world.

Its use in terrestrial farming was banned by the European Union in April 2018 along with the use of two other neonicotinoids after the European Food Safety Authority reported that the substances posed a serious danger to bees, although no such threat would apply to its use in a closed system in fish farming.

Benchmark has previously pointed out that BMK08 was developed under the strict veterinary medicinal products guidelines of the European Union (Directive 2001/82 as amended).

Social Media:

 **Don Staniford**
@TheGAALA

Preliminary research shows that a popular insecticide hampers arthropods in the ocean.
hakaimagazine.com/news/whats-bad... via
[@hakaimagazine](#)



What's Bad for Bees Could Be Bad for Marine Life, Too | Hakai Magazine
Preliminary research shows that a popular insecticide hampers arthropods in the ocean.
hakaimagazine.com

7:46 AM · May 22, 2020 · Twitter Web App

 **ProtectOurShore**
@ProtectOurShore

Imidacloprid in aquatic ecosystems: 5 products, 5 warning labels, all saying "Do not apply directly to water". All "toxic to aquatic invertebrates". What's in your Scottish salmon?
[#salmon](#) [#imidacloprid](#) [#neonicotinoids](#)
[@CenterForBioDiv](#) [@CFSTrueFood](#) [@ScottishEPA](#)

Dominion 2L ENVIRONMENTAL HAZARDS
This product is highly toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

QualiPro Imidacloprid .5g ENVIRONMENTAL HAZARDS
This product is highly toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

Prime Source Imidacloprid 2F ENVIRONMENTAL HAZARDS
This product is highly toxic to aquatic invertebrates. Do not apply to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

QualiPro Imidacloprid 2F ENVIRONMENTAL HAZARDS
This product is highly toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

Bayer Advanced 701525 ENVIRONMENTAL HAZARDS

- This pesticide is toxic to aquatic invertebrates.
- Do not allow equipment washwater, rinsate or spray to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying

8:38 PM · May 21, 2020 · Twitter Web App



Don Staniford
@TheGAAIA

Does @RoyalFamily support the use of the bee-killing toxic neonicotinoid Imidacloprid by royal warrant holder @MowiScotlandLtd? Prince Philip visited Loch Ailort in 1974 leading to pharmed salmon supplied to Buckingham Palace #WorldBeeDay #WorldBeeDay2020 tinyurl.com/ycn2nqrf



Clarence House and 7 others

10:45 AM · May 20, 2020 · [Twitter Web App](#)



Don Staniford
@TheGAAIA

How can the Prince of Wales be a champion of 'sustainable' salmon farming when it plans to use the bee-killing neonicotinoid Imidacloprid in Loch Ailort? @MowiScotlandLtd @ClarenceHouse tinyurl.com/ycnw2rwx @RoyalFamily #WorldBeeDay #WorldBeeDayDay2020 @WeAreBenchmark #BMK08



RSPCA Assured and 9 others

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Salmon Research
@salmonresearch

It's #internationalbeeday and the salmon farm industry are trialling a BEE KILLING PESTICIDE on their lice-ridden salmon:

Don't let them get away with this. Speak to your MP.
#bees #aquaculture @SSPOsays @GeorgeMonbiot @ChrisGPackham



Don Staniford @TheGAAIA · 35m

Secret Trials: 'Royal' Salmon Doused with Bee-Killing Insecticide Imidacloprid? tinyurl.com/ycn2nqrf FOI reveals proposed 'field trial' of toxic neonicotinoid @MowiScotlandLtd at Ardnish in Loch Ailort @ScottishEPA @WeAreBenchmark @marinescotland @FerdOwner @vmdgovuk #BMK08

[Redacted]
Scottish Environment Protection Agency
Angus Smith Building
6 Parklands Avenue
Eurocentral
Holytown
North Lanarkshire ML1 4WQ

10 March 2020

Dear [Redacted]

**THE WATER ENVIRONMENT (CONTROLLED ACTIVITIES) (SCOTLAND) REGULATIONS 2011
ECTOSAN SEALICE TREATMENT TRIAL - ARDNISH**

At our recent liaison meeting with your colleagues held at our Ardnish site we discussed the possibility of carrying out a field trial of Ardnish involving the new medicine Ectosan. Trials carried out to date have demonstrated that the medicine shows very high levels of efficacy against sea lice with no adverse environmental impacts when the treatment is coupled with a proprietary purification system, which removes any detectable traces of medicinal residues prior to the release of the treatment water. It would be our intention to further support development studies by carrying out such a trial at Ardnish. This would also involve treating the treatment water in a scaled and equivalent purification system to remove any remaining medicine components prior to release.

8:47 AM · May 20, 2020 · Twitter for iPhone



Don Staniford
@TheGAAIA

Secret Trials: 'Royal' Salmon Doused with Bee-Killing Insecticide Imidacloprid? tinyurl.com/ycn2nqrf FOI reveals proposed 'field trial' of toxic neonicotinoid @MowiScotlandLtd at Ardnish in Loch Ailort @ScottishEPA @WeAreBenchmark @marinescotland @FerdOwner @vmdgovuk #BMK08



MOWI

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Scottish Salmon Producers Organisation and 9 others

8:30 AM · May 20, 2020 · Twitter Web App



Don Staniford
@TheGAAIA

Mark Ruskell MSP: "There is a startling lack of transparency, with @FergusEwingMSP always ready to approve the next sticking plaster approach to the chronic animal health and welfare issues caused by the industry" tinyurl.com/txozcte @markruskell @scotgp @ScottishEPA



Fish farm companies 'bidding to use bee-harming pesticide'
Scotland's salmon farming industry is planning to start using a toxic pesticide that has been banned in terrestrial agriculture because of dangers to bees.
theferret.scot

10:42 AM · Mar 17, 2020 · Twitter Web App



Don Staniford
@TheGAAIA

Revealed: Toxic Neonicotinoid Insecticide Used to 'CleanTreat' Lousy Salmon tinyurl.com/s3fohsb
@WeAreBenchmark @MowiScotlandLtd @scotseafarms @salmon_scottish @GriegShetland @ScottishEPA @SSPOsays @IntraFishNorge @FergusEwingMSP @ASC_aqua @marinescotland @rspcaassured

Scottish Salmon Watch, 17 March 2020



SCOTTISH SALMON WATCH

CHEMICALS

Toxic Neonicotinoid Insecticide Used to 'CleanTreat' Lousy Salmon

Chemical marketed as BMK08 & Ectosan unmasked as 1,3-dithiothiazolidine 4-carboxamide, 2,6-dimethyl-4-isoxazolidinone, classified as 'Very Toxic to Aquatic Life' & an 'Environmentally Hazardous Substance'. It is a potent neurotoxin that can lead to potentially life-threatening complications & acute poisoning. It was banned in the UK for use in agriculture due to its impact on bees. In a bid to keep documents secret citing commercial confidentiality, Scottish Salmon Watch & Marine Scotland refused to disclose documents via FOIA. Scottish Salmon Watch appealed to the Scottish Information Commission & the Aquaculture Stewardship Council for authorisation back in 2017. Documents revealed that Mowi "wants to get this off the ground" & Cabinet Secretary for Rural Economy lobbied to "speed this up" at five salmon farms in Norway & maybe already in Scotland. - Lunched as D10 Aquatic Blast in 2014 in Canada

are calling on the Scottish Environment Protection Agency (SEPA) to come clean on plans by Benchmark to use the controversial neonicotinoid insecticide Imidacloprid in Scottish salmon farming. Scottish Salmon Watch filed an appeal with the Scottish Information Commission for documents on Benchmark's secret 'CleanTreat' system and BMK08.



owned by Norwegian investors including FERD and Kverva - also known as SalMar which owns Scottish Sea Farms - and the Royal Bank of Scotland. Scottish Salmon Watch is calling on the Scottish Environment Protection Agency (SEPA) to come clean on plans by Benchmark to use the controversial neonicotinoid insecticide Imidacloprid in Scottish salmon farming. Scottish Salmon Watch filed an appeal with the Scottish Information Commission for documents on Benchmark's secret 'CleanTreat' system and BMK08.

10:06 AM · Mar 17, 2020 · Twitter Web App



Don Staniford
@TheGAAIA

"Submission of our regulatory dossier for BMK08, our novel sea lice treatment, is a significant milestone" [@WeAreBenchmark tinyurl.com/uapfokz](https://www.wearebenchmark.com/press-releases/2020/02/29/new-lice-treatment-now-in-hands-of-regulators) "needs separate approval in each of the countries" [@ScottishEPA](#) What is BMK08? Will the public find out how toxic AFTER approval?!



6:30 AM · Feb 29, 2020 · Twitter Web App



Don Staniford
@TheGAAIA

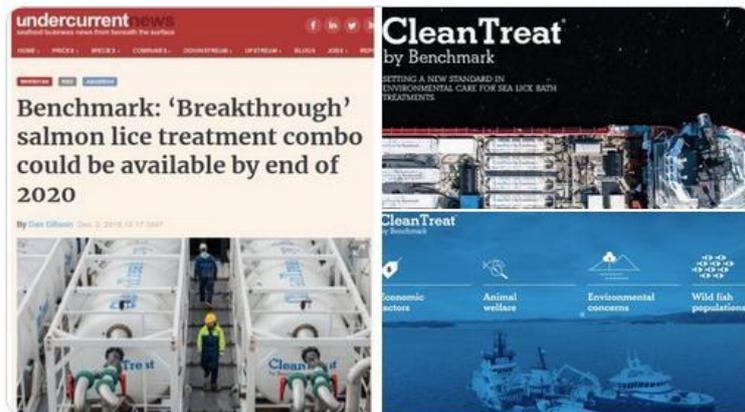
Benchmark makes £2m loss [tinyurl.com/txszcg7](https://www.salmonfarming.com/news/benchmark-makes-2m-loss-for-first-quarter) [@salmonfarming1](#) "Increased expenditure related to launch preparations for its new lice treatment, BMK08" [@WeAreBenchmark](#) Regulatory dossier submitted [@ScottishEPA](#) [@marinescotland](#) Still no public disclosure!! [tinyurl.com/wlmyx8q](https://www.wlmyx8q.com)



11:16 AM · Feb 28, 2020 · Twitter Web App

 **Don Staniford**
@TheGAAIA

Please come clean on BMK08! Why is @ScottishEPA & @GreenerScotland refusing to disclose details on Clean Treat? @WeAreBenchmark tinyurl.com/wlmyx8q Whilst investors pump in £££££s the public are kept in the dark @FOIScotland @undercur @thefishsite @IntraFishNorge @SSPOsays



11:44 AM · Feb 27, 2020 · Twitter Web App

 **Don Staniford**
@TheGAAIA

Benchmark plans share issue to fund CleanTreat scale-up fishfarmingexpert.com/article/benchm...
@ewangkennedy @SalmonFeedlots @ScottishEPA
@WeAreBenchmark What is BMK08?



Benchmark plans share issue to fund CleanTreat scale-up - FishFarmingExpert.com
Aquaculture health, nutrition and genetics business Benchmark Holdings has revealed plans to raise a net sum of £41.5 million through share issues.
fishfarmingexpert.com

4:22 PM · Jan 30, 2020 · Twitter Web App

Cartoons & Graphics:



