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Dear David,

Increasing Use of Toxic Chemicals on 'Scottish' Salmon Farms

In view of the shocking increase in the use of toxic chemicals and the chemical contamination under salmon farm sites across Scotland, what action and new scientific research is SEPA conducting?

According to data obtained via FOI from SEPA's 'Scottish Pollutant Release Inventory', the use of toxic chemicals on Scottish salmon farms more than doubled between 2008 and 2011 and has increased twelve-fold since 2005.

Almost twice every day for the last four years (2008-2011), toxic chemicals known to be lethal to lobsters and other shellfish were used on salmon farms in Scotland. Chemicals were used 2,756 times including Emamectin (1,028); Deltamethrin (914); Azamethiphos (487); Cypermethrin (315) and Teflubenzuron (12).

The alarming rise in chemical use from 2008 to 2011 is five times more than the percentage increase in salmon farming production: whilst Scottish farmed salmon production steadily increased by 22% between 2008 and 2011 (up from 128,606 tonnes to 157,385 tonnes) the use of toxic chemicals increased by a shocking 110% - more than doubling from 188076g to 394631g).

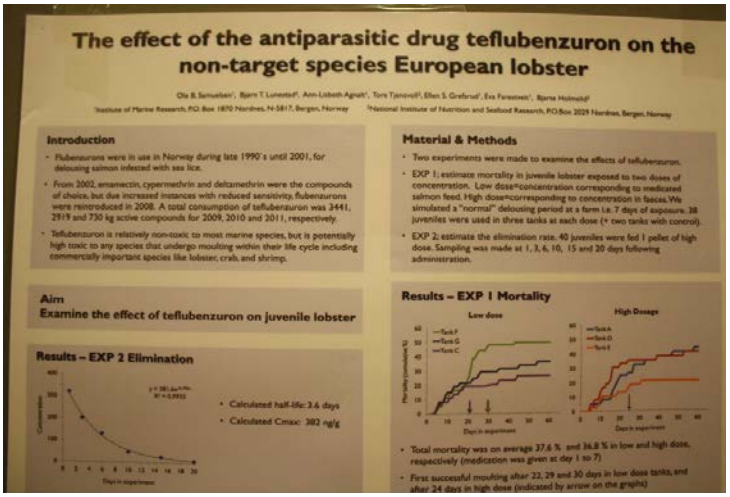
Using data back to 2005 the increase in the use of chemicals is a staggering 1094% - a twelve-fold increase up from 33060g in 2005 to 394631g in 2011. That's over fifty times the percentage increase in Scottish farmed salmon production (which rose 21%)!

For more information please visit FishyLeaks and read Dossier of Chemical Use on Scottish Salmon Farms 2008-2011

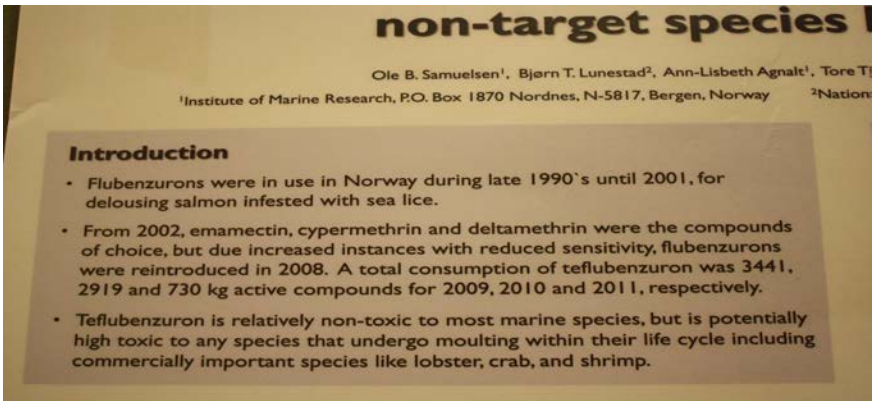
Consequently, is SEPA conducting any new scientific research on the killing of lobsters by chemicals used by salmon farms?

SEPA is over a decade out of date on the latest scientific information. SEPA's policy and risk assessement on Teflubenzuron (Calicide) - #29 – was last updated in 1999 for example! And your policy - #17 – on Azamethiphos (Salmosan) was last updated in 1998!

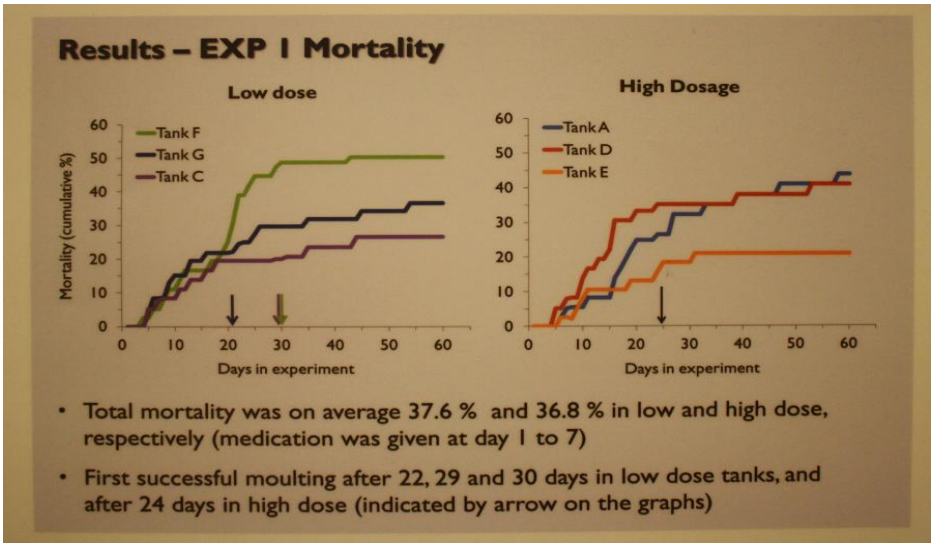
Scientific research presented at the Sea Lice 2012 conference in Norway in May revealed that Teflubenzuron killed lobsters.

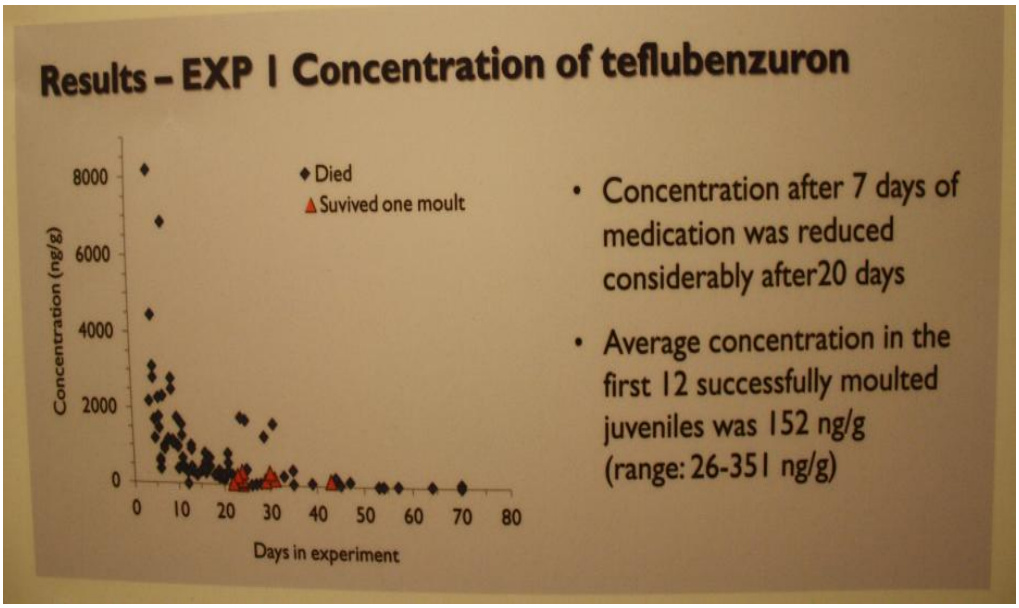


The research led by Dr .Ole Samuelsen at t-he Institute of Marine Research in Bergen showed that Teflubenzuron "is potentially high toxic to any species that undergo moulting within their life cycle including commercially important species like lobster, crab and shrimp."

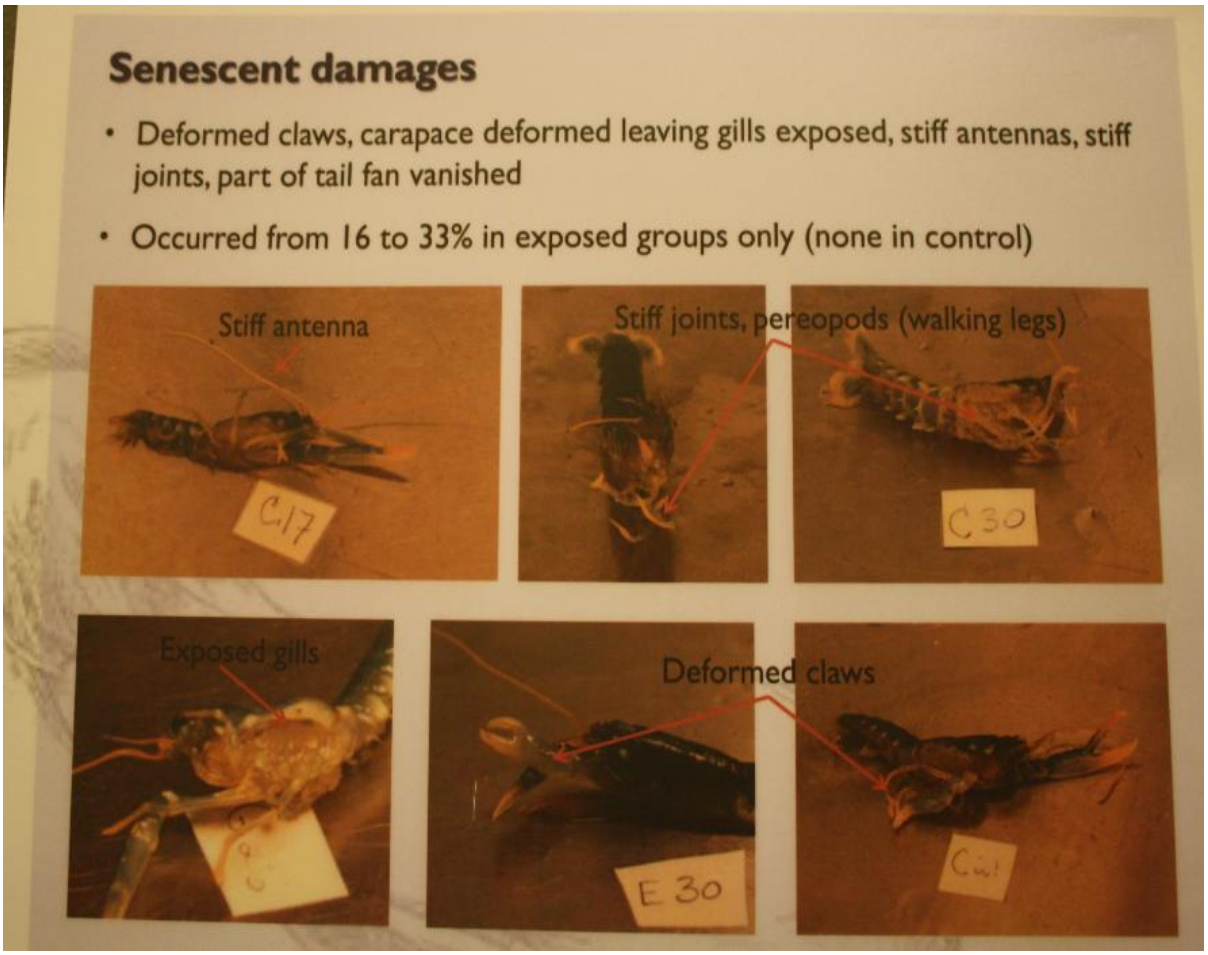


Teflubenzuron killed over a third of lobsters tested – at both high and low doses:

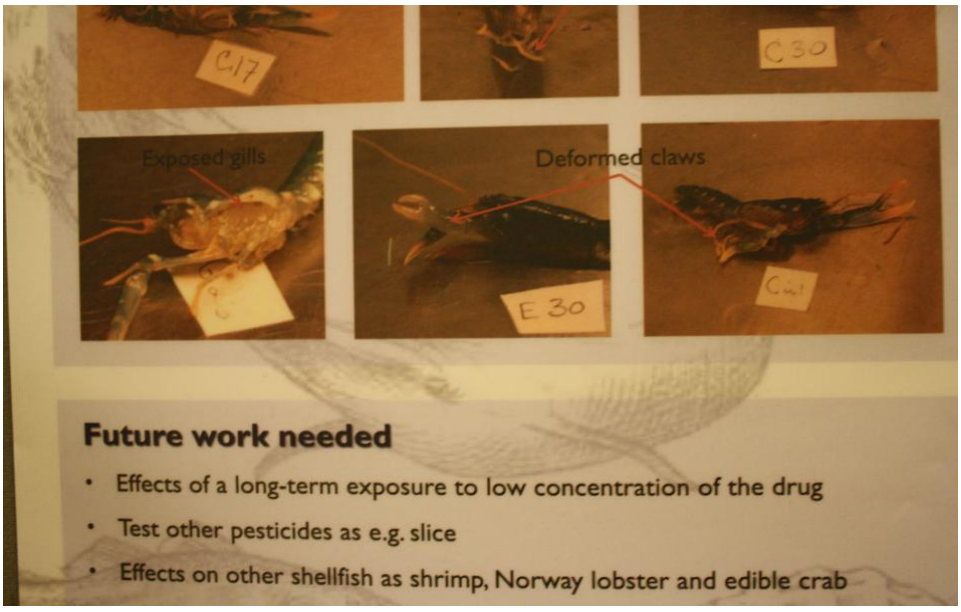


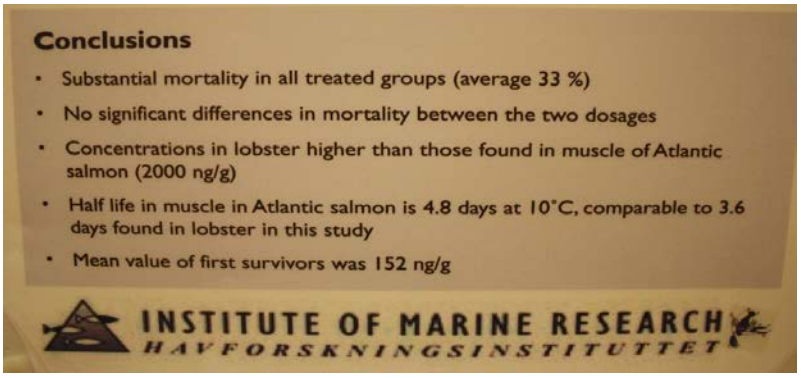


Teflubenzuron was so toxic it could premature ageing in lobsters including deformities in the claws and carapace with tail damage:



Further work is recommended to test the effects on other shellfish species such as shrimp and crab – and other chemicals such as SLICE (Emamectin benzoate):





Download the poster presentation in full online here

Is SEPA carrying out any of this work in Scotland?

Scientific research either dismissed or ignored by SEPA has also shown that Azamethiphos and Cypermethrin are lethal to lobsters and Emamectin benzoate can induce premature moulting in lobsters. Deltamethrin is lethal to both shrimp and lobsters.

"Pesticides killed my business" reported The Sunday Herald in 2011 following reports by SEPA of chemical contamination near salmon farms: "I'm convinced that the prawns were killed by the chemicals used by fish farmers to treat sea lice," said creel fisherman Donald Macleod. "There's hardly any prawns to be found in Loch Shell any more unless you go some distance from the salmon cages, he claims," continued The Sunday Herald. "And prawns aren't that different from the sea lice that the chemicals are designed to kill."

20.11.11

'These chemicals destroyed my business'

DONALD Macleod knew he had a problem when he found dead prawns in the creels he used to catch live shellfish. Since then, his 20-year-old fishing business has collapsed and he has sold his boat. Two months ago, he left his native Isle of Lewis to try to make a new life in Wales.

Macleod, 43, used to fish prawns in Loch Shell on Lewis. But in 2009 he noticed that they were starting to die, and began asking questions.

Scientists from the Scottish Environment Protection Agency came to investigate, and detected traces of two fish-farming pesticides in the loch sediments. At Macleod's suggestion, they also took away some dead prawns to analyse.

Unfortunately, Sepa's Stornoway office was unable to analyse them, and it appears that they were thrown away.

"The worst thing is not knowing for sure, not being able to prove anything," Macleod says. "But I'm convinced that the prawns were killed by the chemicals used by fish farmers to treat sea lice."

There are hardly any prawns in Loch Shell now unless you go some distance from the salmon cages, he claims. Prawns are not that different from the sea lice that the chemicals are designed to kill.

"It has become obvious that fish farmers can do almost anything they want and no-one has the ability to deal with the mess they can create," Macleod says.

Read more via "Revealed: the toxic pesticides that pollute our lochs"

Surely there is now a need to update SEPA's policy on the use of toxic chemicals on salmon farms?

Given the increase in the use of toxic chemicals and their persistent nature it is sadly not surprising that testing by SEPA has revealed chemical contamination of the seafloor under salmon farms. The latest SEPA survey published in 2011 detected Teflubenzuron in Loch Linnhe with Diflubenzuron detected in Loch Ewe and Loch Nevis. Another SEPA survey published in 2011 detected Teflubenzuron and Emamectin benzoate in all six areas sampled: Loch Kanaird, Summer Isles, Loch Fyne, Portree Bay, Loch Slapin and Loch na Keal.

For more information from SEPA read the following survey reports: "The Occurrence of Chemicals used in Sea Lice Treatments In Sediments Adjacent to Marine Fish Farms"

Results of Screening Surveys During 2009 (459k)
Results of Screening Surveys During 2008 (557k)
Results of Screening Surveys During 2006 (260k)
Results of Screening Surveys During 2005 (597k)
Results of Screening Surveys During 2004 (124k)
Results of Screening Surveys During 2003 (191k)

Available online via SEPA's web-site

Based on the information above, the Sunday Herald detailed "The Lochs Contaminated by Pesticides" in 2011:

Loch Linnhe, Fort William: teflubenzuron and emamectin
Loch Ewe, Poolewe: diflubenzuron and emamectin
Loch Nevis, near Mallaig: diflubenzuron and emamectin
Loch Kanaird, near Ullapool: teflubenzuron, diflubenzuron and emamectin
Summer Isles, Achiltibuie: teflubenzuron, diflubenzuron and emamectin
Loch Fyne. Lochgilphead: emamectin
Portree Bay, Skye: teflubenzuron and emamectin
Loch Slapin, Skye: teflubenzuron and emamectin
Loch na Keal, Mull: teflubenzuron and emamectin

Read more details via "Revealed: the toxic pesticides that pollute our lochs" and "Beauty-spot Lochs Contaminated by Toxic Chemicals"

Further information obtained from SEPA by the Salmon & Trout Association in 2012 via Freedom of Information revealed:

• The failure of fish-farmers to report to SEPA self-monitored data concerning sea-lice chemical residues in the sea-bed of Scottish sea lochs: SEPA recorded approximately 16% of fish-farms as failing to supply Slice residue data between 2005 and 2010 in accordance with regulations
• Sea-lice chemical residues in excess of Environmental Quality Standards: Approximately 13% of fish-farms reported self-monitored samples to SEPA of sea-bed residues in excess of EQS between 2005 and 2010
• A reduction in audit or 'check' monitoring of sea-bed residues of sea-lice chemicals by SEPA, despite its role as Scotland's environmental regulator

Hughie Campbell Adamson, Chairman of S&TA Scotland, told BBC News: "The information from SEPA raises serious concerns over the impact of in-feed sea lice treatments. While the control of sea lice on fish-farms is essential, it would not be environmentally responsible to threaten marine shellfish populations as a consequence."

Read more via "Salmon & Trout Association exposes sea-bed pollution of Scottish sea-lochs"

Chemical contamination has also been detected in Scottish farmed salmon. In June 2012, the Veterinary Residues Committee reported: "One sample of salmon muscle contained a residue of emamectin at a concentration of 150 µg/kg. Officers from Marine Scotland have been asked to carry out a follow-up investigation and the results will be reported to a later meeting of the Committee." Testing by the Veterinary Residues Committee in 2005 also found Emamectin benzoate in four samples of farmed salmon. According to SEPA, farmed salmon will absorb 90% of Emamectin benzoate while 10% will be immediately excreted in the faeces (in the case of Teflubenzuron it is the converse with 90% excreted via faeces – hence the problem with contamination of sediments).

SEPA's policy of sanctioning ever increasing use of toxic chemicals is nothing short of shameful. Since the Scottish Government has pledged to increase salmon farming production by 50% on 2009 levels to 210,000 tonnes by 2020, will SEPA once again stand idly by as toxic chemical use increases by another 1000% or maybe 2000% by 2020?

Please also note a letter sent to the OSPAR Commission on the UK's failure to reduce toxic chemicals in contravention of PARCOM Recommendation 94/6 on Best Environmental

Practice for the Reduction of Inputs of Potentially Toxic Chemicals from Aquaculture Use – read online here.

Please pass this letter onto members of the SEPA Board and file "Increasing Use of Toxic Chemicals on 'Scottish' Salmon Farms" as an agenda item at the next SEPA Board meeting.

Yours sincerely,

Don Staniford

Global Alliance Against Industrial Aquaculture

Cc:

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