

Chilean Farmed Salmon – Chronology of Chemical Contamination

Since 2003, Chilean farmed salmon has been found by food safety agencies in the United States, Canada, Japan, the UK, the Netherlands and Germany to be contaminated with a variety of chemicals including the pesticides Malachite/Leucomalachite Green, Abamectin, Ivermectin, Emamectin Benzoate and crystal violet, and the antibiotics Oxytetracycline, Oxolinic Acid, Flumequine and Amphenicols.

A calendar of reported cases is enclosed below along with web-links to scientific reports or papers.

Chronology of Chemical Contamination

October 2008 – Crystal violet, Abamectin and Oxytetracycline: The German Federal Office for Consumer Protection and Food Safety (Bundesamt für Verbraucherschutz und Lebensmittelsicherheit/BVL) report the detection of illegal residues of crystal violet (2 ppb) and abamectin (8.7 ppb) as well as two instances when permitted levels of oxytetracycline were found (58 ppb and 3 ppb).¹

April 2008 – Flumequine and Oxolinic Acid: Testing by the University of Austral's Institute of Pharmacy in Chile detects levels of flumequine (up to 15.2 ppb) and oxolinic acid (up to 16.1 ppb).²

April 2008 – Amphenicols: The Canadian Food Inspection Agency issues an Import Alert for Amphenicols against Aguas Claras (AquaChile).³

October 2007 – Emamectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against the Chilean processor of farmed salmon Pesquera Los Fiordos Ltda. for Emamectin/Ivermectin.⁴

September 2007 – Leucomalachite Green: Taiwan's Bureau of Food Sanitation under the Cabinet-level Department of Health reports illegal residues of leucomalachite green (1.7 ppb) in salmon imported from Chile by Costco's branch in Kaohsiung, Taiwan.⁵

July 2007 – Emamectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against Salmones de Chile S.A. for Emamectin/Ivermectin.⁶

¹ http://www.farmedsalmonexposed.org/pdfs/an_Gross_zu_Ergebnissen_2008.pdf (German) and http://www.farmedsalmonexposed.org/pr_ecoceanos.html (Spanish)

² http://www.nacion.cl/prontus_noticias_v2/site/artic/20080427/pags/20080427205202.html and

³ <http://fis.com/fis/worldnews/worldnews.asp?monthyear=4-2008&day=11&id=28033&l=e&country=&special=&ndb=1&df=0> (English)

http://www.olach.cl/index.php?option=com_content&task=view&id=1165&Itemid=87 Spanish)

⁴ CFIA issue Import Alerts for fishery products from Chile via:

<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

⁵ <http://www.chinapost.com.tw/taiwan/2007/09/23/123666/Salmon-imports.htm>

June 2007 – Emamectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against Marine Harvest Chile S.A. for Emamectin/Ivermectin.⁷

May 2007 – Emanectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against Marine Harvest Chile S.A. for Emamectin/Ivermectin.⁸

April 2007 – Crystal Violet: The United Kingdom’s Veterinary Medicines Directorate reports that “the Chief Veterinary Officer wrote to the Director of the Ministry of Agriculture in Chile to notify him of the finding and asked to be kept informed of the outcome of any investigation. Since then we have exchanged correspondence with the Head of the Fisheries Health Department in Chile, which has responsibility in this area. The Fisheries Health Department is carrying out extensive investigations.”⁹

March 2007 – Emamectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against Patagonia Salmon Farming S.A. for Emamectin/Ivermectin.¹⁰

March 2007 – Emamectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against Mainstream Chile S.A. for Emamectin/Ivermectin.¹¹

February 2007 – Emamectin/Ivermectin: The Canadian Food Inspection Agency issues an Import Alert against Fjord Seafood Chile (Cultivadora de Salmones Linao, Ltda.) for Emamectin/Ivermectin.¹²

⁶ CFIA issue Import Alerts for fishery products from Chile via:
<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

⁷ CFIA issue Import Alerts for fishery products from Chile via:
<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

⁸ CFIA issue Import Alerts for fishery products from Chile via:
<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

⁹ <http://www.vmd.gov.uk/Publications/MAVIS/Full/mavis62.pdf>

¹⁰ CFIA issue Import Alerts for fishery products from Chile via:
<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

¹¹ CFIA issue Import Alerts for fishery products from Chile via:
<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

¹² CFIA issue Import Alerts for fishery products from Chile via:
<http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=20> (Import Alerts are deleted however)

February 2007 – Oxolinic Acid and Flumequine: Marine Harvest Chile and other Chilean salmon farming companies report, via the Declaración de Impacto Ambiental, the use of oxolinic acid and flumequine at various sites.¹³

February 2007 – Crystal Violet: SalmonChile reveals that the contaminated farmed salmon of December 2006 was likely grown by AquaChile, the country's largest Chilean-owned farmed fish company, and the Norwegian-owned entity Marine Harvest Chile.¹⁴

December 2006 – Crystal Violet: The United Kingdom issues a Rapid Food Alert through the European Commission's Health and Consumer Protection Directorate for crystal violet in farmed salmon (1.8 ppb) imported from Chile via Thailand.¹⁵ The UK's Food Standards Agency issued a Product Recall for salmon skewers sold by Findus in the UK through Tesco and Farm Foods stores and also in the Republic of Ireland through Dunnes Stores.¹⁶

February 2006 – Oxolinic Acid: The United States Food and Drug Administration issues an Import Alert against Salmenes Friosur for oxolinic acid residues in farmed salmon (farmed salmon – everything relates to Chilean farmed salmon: hence the title “Chilean farmed salmon.....”) at a level of 15.6 ppb.¹⁷

December 2004 – Triphenylmethane dyes (Malachite Green and Gentian [Crystal] Violet): The Canadian Food Inspection Agency issues an Import Alert against Fiordo Blanco S.A. for “Triphenylmethane dyes (MG & Gentian [Crystal] Violet).”¹⁸

September 2004 – Malachite green: *Reuters* reports that in August, health authorities in The Netherlands rejected a container bound for France that was packed with 20 tons of frozen farmed salmon after detecting the fungicide malachite green.¹⁹

August 2004 – Malachite green: The Dutch sanitary authorities retain frozen farmed salmon shipment from Chile for containing residues of the carcinogenic fungicide malachite green.²⁰

¹³ <http://farmedsalmonexposed.org/pdfs/preliminary-environmental-information-Chilean-Patagonia.pdf> (English) and <http://www.e-seia.cl/> (Spanish)

¹⁴ http://www.lanacion.cl/prontus_noticias/site/artic/20070222/pags/20070222205658.html (Spanish) and http://www.panoramaacuicola.com/noticia.php?art_clave=3411 (English)

¹⁵ http://www.lanacion.cl/prontus_noticias/site/artic/20070220/pags/20070220212227.html and http://www.lanacion.cl/prontus_noticias/site/artic/20070217/pags/20070217204416.html (Spanish) <http://www.vet-residues-committee.gov.uk/Reports/vrcar2006.pdf> and <http://www.food.gov.uk/news/newsarchive/2006/dec/crystalviolet> and <http://www.vmd.gov.uk/Publications/MAVIS/Full/mavis61.pdf> and http://ec.europa.eu/food/food/rapidalert/reports/week50-2006_en.pdf (English)

¹⁶ <http://www.food.gov.uk/enforcement/alerts/2006/dec/findusskewers>

¹⁷ According to the FDA's Barbara Montwill (barbara.montwill@fda.hhs.gov): “Salmenes Friosur S.A. Ave. L. O'Higgins 1980, Santiago, Chile: Oxolinic acid residues detected in salmon at level of 15.6 ppb. The processor was placed on IA 16-124 in February 2006. The Chilean processor had five subsequent shipments in-compliance and he is no longer listed on the detention without physical examination”: http://www.fda.gov/ora/fiars/ora_import_alert_list.html

¹⁸ <http://active.inspection.gc.ca/scripts/fispoi/ial/IALresults.asp?ICountry=CHILE&lang=e&m=40>

¹⁹ <http://www.planetark.com/dailynewsstory.cfm/newsid/27349/newsDate/27-Sep-2004/story.htm>

²⁰ <http://www.allbusiness.com/environment-natural-resources/toxic-hazardous/9680209-1.html>

August 2004 – PBDEs (flame retardants): The journal *Environmental Science & Technology* reports chemical flame retardants (PBDEs) in Chilean farmed salmon.²¹

April 2004 – Leucomalachite green: The UK's Veterinary Medicines Directorate reports that six samples of imported farmed fish, four of salmon from Chile and two of catfish from Taiwan, have been found to contain residues of leucomalachite green, a metabolite of malachite green, at concentrations between 2.6 and 20 µg/kg (ppb).²²

January 2004 – Leucomalachite green: The UK's Veterinary Medicines Directorate reports that one sample of farmed salmon imported from Chile was found to contain residues of leucomalachite green, a metabolite of malachite green, at a concentration of 2.6 µg/kg (ppb).²³

January 2004 – PCBs, dioxins, dieldrin, DDT and toxaphene: The journal *Science* reports 14 organochlorine contaminants in Chilean farmed salmon including PCBs, dioxins, dieldrin, DDT and toxaphene.²⁴

November 2003 – Malachite green: The UK issues a Rapid Food Alert through the European Commission's Health and Consumer Protection Directorate for malachite green in farmed salmon from Chile.²⁵

October 2003 – Leucomalachite green: The UK's Veterinary Medicines Directorate reports that three samples of farmed salmon imported from Chile and two samples of farmed catfish imported from Taiwan were found to contain residues of leucomalachite green, a metabolite of malachite green, at concentrations between 2.6 µg/kg and 20 µg/kg (ppb).²⁶

September 2003 – Oxytetracycline: Japanese health officials threaten to shut their market to Chilean farmed salmon after finding excessive levels of the antibiotic oxytetracycline in a random sampling of fish.²⁷

August 2003 – Malachite green: Dutch food safety authorities issue three Rapid Food Alerts through the European Commission's Health and Consumer Protection Directorate for malachite green in frozen farmed Atlantic salmon from Chile.²⁸

July 2003 – Malachite green: Dutch food safety authorities issue four Rapid Food Alerts through the European Commission's Health and Consumer Protection Directorate for malachite green in frozen farmed Atlantic salmon from Chile.²⁹

²¹ <http://www.ewg.org/node/16623>

²² <http://www.vmd.gov.uk/Publications/MAVIS/Full/mavis50.pdf>

²³ <http://www.vmd.gov.uk/Publications/MAVIS/Full/mavis49.pdf>

²⁴ <http://www.sciencemag.org/cgi/content/abstract/303/5655/226>

²⁵ http://ec.europa.eu/food/fs/sfp/ras_week46_en.pdf

²⁶ <http://www.vmd.gov.uk/Publications/MAVIS/Full/mavis48.pdf>

²⁷ <http://www.wildnesswithin.com/langman.html> and <http://www.bluefish.org/untested.htm>

²⁸ http://ec.europa.eu/food/fs/sfp/ras_week33_en.pdf

²⁹ http://europa.eu.int/comm/food/fs/sfp/ras_week28_en.pdf

March 2003 – Malachite green: The United Kingdom issue three Rapid Food Alerts through the European Commission's Health and Consumer Protection Directorate for malachite green in frozen farmed Atlantic salmon fillets from Chile from Sociedad Jimenez Guitierrez y Cia Ltda. and Salmones Multiexport Ltda.³⁰

January 2003 – Leucomalachite green: The United Kingdom's Veterinary Medicines Directorate reports that three samples of farmed salmon imported from Chile and collected by Port Health officials at a Border Inspection Post contained residues of leucomalachite green, a metabolite of malachite green, at concentrations of 4–18 µg/kg (parts per billion).³¹

³⁰ <http://www.salmonfarmmonitor.org/documents/malachite.doc>

³¹ <http://www.vmd.gov.uk/Publications/MAVIS/Full/mavis45.pdf>