The Basics

Pesticide spray application in the occupied or soon-to-be occupied aircraft cabin and cockpit can be a serious health hazard for crewmembers and passengers. Pesticide/solvent exposure can be significant, and some crewmembers must work in the sprayed environment regularly and repeatedly. Almost 50 countries require pesticide spraying on all or selected flights, apparently to prevent the importation of insects that either carry tropical disease or damage plant/animal health. The cabin may also be pre-treated in a country that does not require pesticide spraying. Airlines do not inform passengers prior to ticket purchase or flight. The sprays contain an active ingredient (typically 2% permethrin or d-phenothrin), solvents, and in some cases, propellants. Reported symptoms include acute respiratory and sinus problems, rash/hives, headache, and anaphylactic shock, as well as chronic immune, respiratory, and neurological problems. Damp mattresses and carpet in the crew bunk rooms have posed particular problems for cabin and cockpit crew. AFA advocates the use of non-chemical means of disinsection such as the air curtain technology being tested at a US Department of Agriculture lab in Florida, under the direction of the Department of Transportation. Delta Airlines is also involved in this project.

In summary, there are four reasons that spraying insecticides in the cabin/flight deck is a bad idea:

1. Chemical spraying can adversely affect the health of passengers and crew, in part because of the sensitivity of some people to the chemical insecticides and in part because of the potential for over-exposure to onboard insecticides due to lax/non-existent exposure control programs.

2. There is evidence that pesticide loadings on aircraft surfaces are lower-than-expected, whether because of transfer to crew/passenger skin and clothing, degradation over time, or both;
3. There is evidence of insect resistance to the types of insecticides sprayed on aircraft, and even without insect resistance, currently-approved chemical disinsection methods only need to kill 80% of bugs on board to be deemed effective; and

4. Chemical spraying is unnecessary because, with some limited R&D work/testing, non-chemical methods could be used on aircraft instead, as described by ICAO in 2010 and 2013.

AFA activity and hot topics

Oct 2016: At its 39th Assembly meeting, the ICAO Council approved a resolution to engage with the World Health Organization to develop performance-based criteria (among other recommendations) for non-chemical methods of disinsection. Read the full resolution.

Sept. 2016: AFA-CWA Flightlog article: “Zika, Pesticides, and Appreciation to a Flight Attendant Who Thinks Outside the Box”

Apr 2016. In response to concerns about transporting insects that could carry the Zika virus, some countries are going to add disinsection (pesticide spraying) rules on either all or selected incoming flights. This matters because crewmembers and passengers do not want to be sprayed with pesticides. Given the legitimate need for countries to prevent the spread of Zika and other vector-borne disease, it is especially important to complete the development/approve the use of a non-chemical option to prevent the transport of such insects in the aircraft cabin/flight deck. Read more here.

Apr 2013. Information on pesticide spraying practices on flights operated by Canadian airlines

Apr 2012. DOT acknowledges passage of law mandating passengers’ right-to-know about pesticides on their planes, but no action yet: The US Department of Transportation acknowledged the Feb. 2012 legislation that requires airlines to inform passengers of onboard pesticide spraying. The DOT notice commits the agency to address the requirements in a “future rulemaking.” As of Nov, 2013 the DOT has still not issued a rule to satisfy the passenger right-to-know legislation, approved by Congress. (Note that the CDC canceled its requirement for routine pesticide spraying on certain incoming flights in 1979 because the exposure to the sprays were deemed to “cause undue discomfort to many passengers and, in some cases, place those exposed at risk of developing acute allergic (anaphylactic) reaction.” The CDC also noted that “the efficacy of the entire procedure is questionable.”)
Feb 2012. **US airlines required to inform passengers of onboard insecticide applications, required to meet foreign quarantine rules (click on link and search for word “insecticides”)** On Feb. 14, 2012, Congress passed legislation to ensure airline passengers are notified of exposure to insecticides that US airlines spray to comply with quarantine regulations of approx. 50 countries listed on this DOT website. (Click on link in title to access Public Law 112-95, section 415(c), § 42303. Use of insecticides in passenger aircraft.) The law covers pesticide spraying in countries that require inflight spraying on all/selected inbound flights, and countries that accept residual spraying but may spray inflight if residual spray expired. It should also notify passengers of onboard insecticide spraying at any additional airports in countries that may not require spraying but are contracted with US airlines to spray the cabin, such that passengers could board a freshly-soaked aircraft prior to boarding. At present (Nov. 2013), it is not clear if the DOT website information is current, airlines are not notifying passengers of insecticide spraying, and DOT has not issued a rule.

2012. Research paper: **Exposure of flight attendants to pyrethroid insecticides on commercial flights: urinary metabolite levels and implications**

Aug 2010. **Information on which flights are sprayed with pesticides (partial list):** Concerned about exposure to pesticides on a flight? Check this list and contact your airline. If you have additional or alternate information compared to what is on this partial list of sprayed flights, please email us.

2008: **WHO issued 2nd edition of revised International Health Regulations, first published in 2005:** This document confirms that the WHO expanded its definition of disinsection to include controlling insect vectors, in addition to killing them. This expanded definition meant that non-chemical/mechanical methods would qualify as disinsection.

Aug 2008. **Pyrethroids more toxic than previously thought:** Center for Public Integrity publishes report titled “Perils of the New Pesticides”

June 2008. **Proposed “passenger right to know” bill:** This bill would require airlines to notify passengers of pesticide spraying rules prior to ticket purchase. It was referred to the House Subcommittee on Aviation on June 25, 2008. The same language was also proposed as part of the failed FAA Reauthorization process in 2008. The Department of Transportation proposed a similar measure in the form of a Notice of Proposed Rulemaking (NPRM) in 1995. During the next three years, airline opposition was strong to the proposed rule. For example, the contents of Docket 50031 reveal that American Airlines told the DOT that “requiring airlines and travel agencies to warn customers of
potential health hazards is an unfair burden and could harm the public” and the ATA said that “if the NPRM is made final, the US Government will have become a willing and active participant in fostering continued aircraft disinsection.” The DOT withdrew its proposed rule in 1998, stating that it was “no longer justified” because a number of countries had dropped their spraying rules. Still, 47 countries require spraying on incoming flights. Transport Canada does recommend that airlines notify passengers of pesticide spraying rules prior to ticket purchase.

Sept 2007. **US asks WHO to consider non-chemical disinsection**: At the 36th Session of the International Civil Aviation Organization (ICAO) assembly, the US Government asked the ICAO Council to urge the World Health Organization to hold a consultation into non-chemical disinsection methods, with the view to the WHO accepting non-chemical methods as an alternative to the currently-approved chemical methods of disinsection. The resolution was accepted and the WHO intends to convene its consultation in late 2008. A summary of WHO and ICAO activity on aircraft disinsection is provided [here](#).

2006. Research paper: **A reassessment of the neurotoxicity of pyrethroid insecticides**

Feb 2005. **Practical advice for crewmembers**: Exposed to pesticides on a flight? Read this and take it to your doctor.

Oct 2004. **International body shows support for non-chemical alternatives to pesticides on planes**: ICAO Assembly adopts a resolution that encourages the exploration of non-chemical means of aircraft disinsection and requests that the ICAO Council assist the WHO in this effort.


Oct 2, 2003. **Letter from AFA President to United Airlines CEO**: Request for United to volunteer to participate in DOT-led testing for non-chemical alternative to spraying pesticides on planes.

Ongoing. **What chemicals are in the sprays?** Association of Flight Attendants, AFL-CIO.

Ongoing action. **The ICAO and the WHO say the sprays are safe. Let your voice be heard...**: Association of Flight Attendants, AFL-CIO.


March 7, 2002. **Ladies and gentlemen, you are about to be sprayed: Aircraft disinsection - what has been, what is, and where to go from here**: Paper presented by Judith Murawski, AFA at the 19th Annual SCSI International Aircraft Cabin Safety Symposium.


Jan 8, 2002. **Letter from AFA President to United Airlines' CEO**: Noted that formal request for United to change the description of the sprays as "safe" in the flight attendants' manual was pointedly ignored.

Nov 2, 2001. **Letter from AFA President to United Airlines' CEO**: Formal notification that it is unacceptable for United to require flight attendants to tell passengers that the pesticide sprays are "safe" when all evidence is to the contrary. Requested change to related text in flight attendant announcement book.

Aug 7, 2000. **Letter from AFA President to United Airlines' CEO**: Description of hazard and request for United to make specific changes to pesticide spraying practices.

**References to news articles**

Jul 24, 2003. **Boston Globe (Copyright IHT)**: "Air passengers bugged about spraying"
Mar 17, 2003. Pesticide Action Network Update Services: "Airline passengers are sprayed for bugs"

Sept 10, 2001. USA Today: "Fliers fume over planes treated with pesticides Some airline passengers, employees say required spraying in cabins can cause health problems, disabilities"


May 16, 2001. New Zealand Herald: "Crews in revolt over plane spraying"


More information


2000. Description of confounding factors, individual differences, and interactions related to pesticide exposure: Chapter 8 in: A Review of the Scientific Literature As It Pertains To Gulf War Illness, Volume 8: Pesticides.
May 14, 1996. **Pesticide Registration Notice 96-3**: US Environmental Protection Agency.

1996. **Australian quarantine: A shared responsibility**: Agriculture Fisheries, and Forestry – Australia, Australia Quarantine & Inspection Service. Nairn, ME; Allen, PG; Inglis, AR; and Tanner, C., Commonwealth of Australia; See Recommendation 67.


**Beyond Pesticides - National Coalition Against the Misuse of Pesticides**

**Californians For Pesticide Reform**

**Northwest Coalition for Alternatives to Pesticides**

**Pesticide Action Network North America**

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