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As the Worm Turns: Investigations into Earthworm Control on Airports

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Earthworms, though generally considered beneficial for soil conditioning, can become a hazard at airports. When found in large numbers on runways or taxiways after heavy rainfall, they create slippery conditions for aircraft rolling over them. Additionally, earthworms attract birds, especially gulls, thereby increasing the risk of bird strikes to aircraft that are landing or taking off. For example, during a 35-minute period on 3 September 2004 at Calgary International Airport (YYC), a B737 of Westjet and an A319 of Air Canada aborted takeoffs after multiple strikes with gulls attracted to the runways to feed on earthworms. The B737 had strikes and damage to both engines and the A319 had damage (apparently an uncontained failure) to one engine. There are no pesticides registered for earthworm control. Consequently any application of a pesticide to kill worms would be illegal. Researchers in England, Oregon, and Washington found that incorporating abrasive material into soil reduced the number of worms coming to the surface. Also, by creating a more acidic soil, researchers have reduced the earthworm population in treated areas. We are conducting trials at the USDA's National Wildlife Research Center Ohio Field Station to develop simple procedures to reduce earthworm numbers on runways and taxiways. In lab trials, night crawlers (*Lumbricus terrestris*) have been initially repelled from areas containing phosphate fertilizer, high nitrate fertilizer or ground mustard. Additionally, when placed on recycled coal slag, the worms have not burrowed into the material but tried to leave the test site. We anticipate field trials to investigate an integrated approach involving products that present both chemical and physical irritants. If a successful combination of products is determined, the number of earthworms crawling onto taxiways and runways could be significantly reduced.

Abstract of poster presentation at Bird Strike Committee USA/Canada Meeting, Lake Mary and Sanford, Florida, August 18-21, 2008.