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## Fish Poisoning Study Shows First Set of Preliminary Data

After only a year of research and analysis, data collected from various sites on St. Thomas has unearthed some interesting findings about the prevalence of ciguatera fish poisoning locally, what might be causing it and how it affects certain populations.

Last December, it was announced that V.I. data would be the driving force behind a monumental three year study geared toward preventing ciguatera fish poisoning in humans. The study, lead by Donald Anderson and Dr. J. Glenn Morris is being funded through a \$1 million grant from the Centers for Disease Control and Prevention, along with grants from the National Science Foundation and Woods Hole Oceanographic Institute, where Anderson works as a senior scientist.

Meanwhile, the Center for Marine and Environmental Studies at the University of the Virgin Islands has been working for the past couple years on collecting trial data for the project from four of the 16 marine sites -- including Benner Bay, Black Point and Flat Cay -- already being used for the center's coral reef health monitoring program. The project, to date, has also pulled in 17 patients treated for fish poisoning at the Schneider Regional Medical Center, who are being monitored for a year.

Ciguatera is caused by eating fish that contain toxins produced by the microalgae *Gambierdiscus toxicus*. At a press conference held last year to unveil the project, Morris and Anderson said ciguatera is the "most frequently reported marine toxin disease in the world," whose symptoms can disappear after a few days or weeks only to reappear a few months or a year down the road.

Interestingly, researchers said at a seminar held Friday to unveil the preliminary data that the number of fish poisoning cases at the hospital so far for 2010 has decreased, from 80 in 2008 down to 45. While Tyler Smith, coral reef researcher for UVI's Center for Marine and Environmental Studies, said later that they're trying to pinpoint exactly why that is, he also said a number of factors -- including climate change -- could be behind it.

He also said afterward that local fishermen, who know the waters and are only passing on the fish they think are safe, are one of the major reasons that the numbers aren't generally higher.

During the seminar, Smith explained that the recent summer months saw high sea surface temperatures, which adds to the potential for coral bleaching and in turn, higher levels of the

gambierdiscus. Samples taken from the four test sites show that the local populations are comprised of at least three species of gambierdiscus, with higher growth rates depending on the temperature, toxicity and light in the water, Mindy Richlen, one of the project's investigators, explained later.

She said the ciguatoxins attached themselves to algae or dead corals, or can be found in sand.

What's different about this year, however, is that the water temperature cooled down once storms such as Earl and Otto blew into the area, and Smith said that could be why the number of cases is lower. Smith also said activities such as dredging can have an impact on the growth of ciguatoxins in a particular area.

Richlen said the algae samples collected so far show the highest levels in the summer and early fall.

More specifically, researchers said that local fish samples sent away for analysis have shown that three-spot damselfish and doctorfish contained the highest toxicity levels. The damsels, according to Food and Drug Administration analyst Alison Robertson, are small, but the toxins contained in their system are metabolized when they're eaten by bigger fish. Meanwhile, the high toxicity levels in the doctorfish could be directly related to their feeding habits.

Local lionfish samples were also found to be toxic, so Robertson said -- despite the recent spike in lionfish recipes circulating across the internet -- residents should keep them out of the kitchen.

Meanwhile, a majority of patients surveyed in Schneider Regional Medical Center's emergency room:

linked barracuda, red hind and snapper bought from local fishermen or at local fish markets to their fish poisoning outbreak;

said they had fish poisoning at least once before, while most of the population said they eat fish three or more times per week; and

complained of diarrhea, abdominal pain, nausea, shakiness and a tingling or numbness in their arms and legs.

A random phone survey of a little more than 400 locals also added Ole Wife, King Mackerel and grouper to the list of toxic fish, which most said were caught on the south side of the island. The sampling also showed that: 29 percent of residents surveyed knew about ciguatera and the dangers; 82 percent said they avoided eating fish species they knew to be poisonous; and 36 percent went to the emergency room for treatment, while 17 percent tried herbal or over-the-counter remedies such as bush tea or charcoal.

The study continues for another two years, and Smith said that at the end, the project's team hopes to have at least some kind of advice on how to prevent or avoid fish poisoning.

"But we really hope to continue, because a lot of these answers only emerge for the short term, and you have to keep analyzing the data to get long term results," he said.

Speaking during the seminar, Morris said he also hopes to one day have the money needed to extend the study to St. Croix, where he said fish poisoning cases are different.

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