



1. Why was a public health investigation conducted?

Acute pesticide-related illness and injury is listed as a notifiable disease in the State of Florida under Statute 381.0031, Rule 64D-3, *Florida Administrative Code (F.A.C.)*. As a part of our surveillance efforts, the Florida Department of Health (DOH) carries out a public health investigation for all reports of illness or injury potentially associated with exposure to pesticides.

2. What does a public health investigation involve?

Public health investigations include surveillance, interviews, medical record reviews, review of supporting documentation (e.g., Florida Department of Agriculture and Consumer Services investigation reports), and determination of case status. Interviews were conducted among individuals reporting health effects potentially associated with the Paladin application using a standard questionnaire designed to obtain demographic, exposure, and health effect information.

3. How is case status determined?

A case is classified as confirmed, probable, or suspect based on information regarding their exposure, health effects, and the causal relationship between reported symptoms and the specific pesticide exposure (cases classified as confirmed have the strongest evidence that their health effects are related to a pesticide exposure; cases classified as suspect have less evidence [more detail is provided in question 5]). DOH has adopted guidelines from the National Institute of Occupational Safety and Health's (NIOSH) Sentinel Event Notification System for Occupational Risk (SENSOR) program to classify cases. A detailed explanation of the DOH case classification for acute pesticide-related illness and injury can be found at <http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/documents/cd-pesticide.pdf>.

4. How many cases of acute pesticide-related illness and injury were identified during this investigation?

Of the 66 individuals interviewed, 43 (65.2%) matched the case classification for a suspect case of pesticide-related illness and injury. The remaining 23 individuals interviewed were determined not to be a case. (See question 3, 5, and 6 for more information about case classification)

5. Why were all cases of acute pesticide-related illness and injury classified as suspect and not confirmed or probable?

All individuals who were interviewed that met the DOH case classification for an acute pesticide-related illness and injury were determined to be suspect cases (n=43). A suspect case classification was given, instead of confirmed or probable, because laboratory, clinical, or environmental evidence indicating a Paladin exposure was not available and health effects characteristic of a Paladin exposure were not reported by a licensed health care professional. In addition, health effects characteristic of a Paladin exposure are very broad and could be indicative of a number of other conditions (e.g., upper respiratory tract infection). All suspect cases were further classified as "possible" or "suspicious." To receive a "possible" classification, evidence of exposure is based solely upon written or verbal report (e.g., a strong odor reported by the case or a witness), not from laboratory or clinical evidence (e.g., results from air, soil, or biological samples); evidence of adverse health effects is based on the individual's report, not

by a licensed health care professional; and evidence for the causal relationship is based on whether the reported health effects are consistent with the known toxicology of Paladin. A “suspicious” classification is assigned when there is not enough toxicological information available to determine the causal relationship between Paladin and the individual’s reported health effect(s). For example, when a health effect has been shown to be associated with other sulfur products, but not shown to be associated with Paladin (i.e., listed in the Safety Data Sheet).

6. Why weren’t all individuals interviewed classified as a case of acute pesticide-related illness and injury?

There are three classifications for individuals not classified as a case: unlikely, insufficient information available, or unrelated.

Unlikely: Evidence of exposure-health effect relationship is not present: a temporal relationship does not exist or the constellation of health effects are not consistent based on the known toxicology.

Insufficient information available: Insufficient data available about the exposure or the health effects (e.g., having only one new post-exposure abnormal sign/symptom).

Unrelated: Illness determined to be unrelated to pesticide exposure based on no history of pesticide exposure or evidence of non-pesticide causal agent.

7. How is case severity determined?

Severity of illness is determined for cases of acute pesticide-related illness and injury using the NIOSH guidelines and is based on the reported symptoms, number of days hospitalized, and/or the number of days absent from work or normal activities. Severity of illness is categorized as death, high severity, moderate severity, or low severity. More information about guidelines for classifying severity can be found on the NIOSH website at <http://www.cdc.gov/niosh/topics/pesticides/case.html>.

8. How many cases of acute pesticide-related illness and injury were identified with a high severity of illness or death?

There were no cases reported with a high severity of illness or death. Among the 43 suspect cases, thirty-eight cases (88.4%) were classified with a low severity of illness and five cases (11.6%) were classified with a moderate severity.

One individual interviewed during this investigation died of a pulmonary embolus. Following review of this individual’s records, it was determined that Paladin exposure was unlikely to be the cause of death. This individual was not classified as a case.

9. How was distance from the individual’s home to the application site determined?

Locations of the application sites and residential addresses for all interviewed individuals that indicated home exposure were mapped using Google Earth. Distance from the residence to the closest border of an application site was calculated in miles.

10. Were cases of pesticide-related illness and injury more likely to live closer to an application site?

Yes, individuals classified as a suspect case were more likely to live within 0.25 miles and less likely to live more than 1 mile away from an application site compared to individuals not classified as a case.

11. Did you find any cases of acute pesticide-related illness and injury with work-related exposure?

There were no cases with work-related exposure identified during this investigation.

12. Are there any reports of health effects associated with Paladin from other states?

DOH reached out to the Florida Department of Agriculture and Consumer Services and the manufacturer to find out if Paladin was being used in other states and, if so, were they receiving odor and health effect complaints. Paladin was registered for use in 26 states, with Florida reported as using the largest volume. The manufacturer reported that they have not received complaints in other states from the distributors, consumers, or state agricultural agencies. DOH also reached out to other states who conduct pesticide-related illness and injury surveillance to find out if they received any complaints of health effects related to Paladin. There were no cases related to Paladin reported in Michigan, Louisiana, North Carolina, Washington, and Texas.

13. What can I do if I am exposed to Paladin and I believe it is making me sick?

- If inhaled, move to fresh air. If breathing is difficult, get medical attention.
- Seek medical attention from your physician or hospital emergency department.
- Call the Florida Poison Information Center Network (FPICN) at 1-800-222-1222. Trained staff can provide specific poison information and treatment recommendations related to the exposure.
- To report health effects due to a pesticide exposure, contact your local Health Department or contact the Department of Health, Bureau of Epidemiology at 1-800-606-5810.

14. As a result of this investigation, what will DOH do in preparation for the 2015 application season?

- DOH will continue to work with partners (e.g., Florida Department of Agriculture and Consumer Services, Environmental Protection Agency) prior to the 2015 application season to exchange information and prepare for anticipated public concerns and potentially related health effects.
- DOH plans to perform outreach activities to local health care providers to inform them of past issues associated with the application of Paladin, identification of individuals with health effects that may be related to Paladin, and reporting to DOH for public health investigation.
- DOH will target public health surveillance activities during Paladin applications in Hillsborough and other Counties.

For additional information, contact the Florida Department of Health in Hillsborough County at (813) 307-8010 or the Florida Department of Health, Bureau of Epidemiology pesticide hotline at 1-800-606-5810.