



California Notice 2016-02  
Revised 4-28-16

## NOTICE OF INITIATION OF HUMAN HEALTH RISK ASSESSMENT FOR THE ACTIVE INGREDIENT **FIPRONIL**

This notice informs stakeholders that the Department of Pesticide Regulation (DPR) is initiating the human health risk assessment process for registered pesticide products containing the active ingredient fipronil.

### **Background**

Food and Agricultural Code (FAC) sections 13121-13130 require DPR to review the toxicology database of all registered pesticide active ingredients. FAC section 13134 requires DPR to assess dietary risks associated with the use of pesticides. In addition, FAC section 12824 requires DPR to endeavor to eliminate from use in California any pesticide that endangers the agricultural or nonagricultural environment.

During the risk assessment process, DPR evaluates the significance of any adverse effects to human health. If DPR decides that use of, or certain uses of, pesticide products containing the active ingredient undergoing risk assessment result in a significant adverse effect to human health, action must be taken to mitigate the adverse effect.

### **Basis for Risk Assessment Initiation**

DPR identified fipronil as having potential adverse health effects in studies of sufficient quality to allow risk characterization. Specifically, DPR is initiating the human health risk assessment process for the active ingredient fipronil for the following reasons:

1. DPR has concerns regarding toxicity in animal studies:
  - **Chronic toxicity:**
    - **Convulsions** and other neurological disturbances in rats and dogs
    - **Oncogenicity** in rats (thyroid tumors) and mice (liver tumors)
  - **Acute neurotoxicity** in rats (convulsions)
2. No-Observed-Effect Levels (NOELs) are low (0.02 – 0.05 mg/kg/day) for acute, subchronic, and chronic exposures. The lower the NOEL, the greater the concern is for adverse effects in humans (if there is a potential for human exposure).



3. As required by adverse effects disclosure requirements (FAC section 12825.5), fipronil registrants notified DPR of a relatively large number of alleged adverse effects incidents to human health occurring nationwide from 2002-2015 arising predominantly from the use of fipronil in dog and cat spot-on products for flea and tick control. Although these incidents are typically self-reported by the public and are not confirmed to be attributed to actual fipronil use or exposure, they indicate a potential for human exposure and suggest that further investigation of fipronil is warranted.

### **Recent Revisions to DPR's Human Health Risk Assessment Process**

In 2013, DPR requested that the National Academy of Sciences (NAS) conduct an independent peer review of DPR's risk assessment practices. In April 2015, the National Research Council (NRC), an external committee of NAS, completed its review and issued its report including recommendations to improve DPR's risk assessment process and risk characterization document (RCD). NRC recommended that DPR conduct a problem formulation/scoping phase prior to drafting the RCD. During this phase, DPR risk managers and risk assessors will discuss the scope of the risk assessment for a specific pesticide. Information and data relevant to the pesticide are evaluated to determine the scope of the risk assessment. The information and data evaluated include toxicology, pesticide use reports, pesticide sales, illness reports including adverse effects reports, primary uses of the pesticide, exposure scenarios identified on product labels, relevant United States Environmental Protection Agency (U.S. EPA) risk assessments, important sources of uncertainty and variability in the data, potential exposure pathways, and mitigation options that could address these potential exposure pathways.

### **Request for Relevant Fipronil Data**

Fipronil is the first pesticide active ingredient that will undergo a human health risk assessment using the revised approach recommended by NRC. As part of the fipronil problem formulation phase, DPR is seeking data and information on all registered uses of fipronil that are relevant to the risk assessment.

In particular, DPR welcomes input from those who sell or use fipronil on:

- Exposure scenarios for consideration and typical application procedures (user information, settings, rates, etc.).
- Availability of feasible alternatives.
- Possible mitigation options that might reduce potential exposure.
- Additional data that may be needed to conduct the risk assessment.

DPR’s current information about critical NOELs for fipronil is summarized in Table 1 below.

**Table 1. No-Observed-Effect Levels (NOELs) for Fipronil:  
Best Available Estimates as of February 2016**

Duration (Route)	DPR NOELs mg/kg/day	Critical Endpoint	U.S. EPA NOELs mg/kg/day
Acute (all routes)	0.03	Developmental toxicity study (pregnant rabbit; oral); decreased body weight gain within 2 days of treatment. LOEL <sup>1</sup> = 0.1 mg/kg/day.	0.03 (oral); 0.05 (dermal); 0.05 (inhalation)
Subchronic (all routes)	0.05	Developmental neurotoxicity study (rat; oral, 25-day treatment); decreased body weights of pups and delay in preputial separation in male pups.	0.03 (oral); 0.05 (dermal); 0.05 (inhalation)
Chronic (all routes)	0.02	Chronic study (rat; oral); increase in incidence and severity of progressive nephropathy. LOEL= 0.06 mg/kg/day.	0.02 (all routes)

### **DPR’s Pesticide Data Index**

To view the studies DPR currently has on file for fipronil, you may search DPR’s pesticide data index at <<http://apps.cdpr.ca.gov/ereglib/>>. A summary of toxicology data for fipronil is also available at <<http://www.cdpr.ca.gov/docs/risk/toxsums/pdfs/3995.pdf>>.

If you have information or data that you believe are relevant to this risk assessment, please submit it to DPR by **June 17, 2016**. Please address all submissions to:

Risk Assessment – (Fipronil)  
Attn: Ann Hanger  
Pesticide Registration Branch  
Department of Pesticide Regulation  
1001 I Street, P.O. Box 4015  
Sacramento, CA 95812-4015

<sup>1</sup> LOEL: Lowest-Observed-Effect Level

**Next Steps**

DPR intends to present a draft problem formulation document for the fipronil human health risk assessment to the Pesticide Registration and Evaluation Committee (PREC) this summer. To receive information about upcoming PREC meetings, please subscribe to the PREC listserve at <<http://www.cdpr.ca.gov/docs/dept/listserv/listdesc.htm>>.

Please address all questions and comments regarding this notice to Ms. Hanger, Senior Environmental Scientist (Specialist) by telephone at 916-324-3535 or by e-mail at <[ann.hanger@cdpr.ca.gov](mailto:ann.hanger@cdpr.ca.gov)>.

*Original signed by*

*April 28, 2016*

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Ann Prichard, Chief  
Pesticide Registration Branch  
916-324-3931

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Date

cc: Ms. Ann Hanger, Senior Environmental Scientist (Specialist)