

## RODENTICIDE RESTRICTIONS: THE PRECAUTIONARY PRINCIPLE IN ACTION

THOMAS SCHMIT, Liphatech Inc., Milwaukee, WI, USA

**Abstract:** In the Environmental Protection Agency's proposed mitigation measures (published 1/17/07, Federal Register), we can see the precautionary principle in action: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" (Ashford 1998). EPA's proposed measures would classify all second-generation anticoagulant rodenticides as "restricted use," so that they cannot be sold to the general public. This proposed restriction will diminish the ability of consumers to control rodents in their own residence, and will disproportionately affect minority and low-income citizens in the large cities of America. EPA's analysis fails to properly account for the potential impact on public health and other social costs of their mitigation proposal. The EPA's analysis does not show that second-generation anticoagulant rodenticides present a significant hazard to non-target wildlife. At best, it simply makes a case that primary and secondary hazards are possible. It does not allow any conclusions about the actual risk posed to wildlife. Liphatech (and other manufacturers, through the Rodenticide Registrants' Task Force, RRTF) have proposed alternative mitigation measures to address both risks to wildlife and risks to children, while preserving the public's access to the most effective rodent control pesticides. The proposed alternatives include: limiting consumer rodenticide use to inside of buildings, using bittering agents in consumer products, directing consumers to use smaller bait placements, using label language that is more clear and understandable to the consumer, providing consumer education through internet sites and point-of-sale signs/brochures

**Key words:** bait station, human safety, precautionary principle, risk mitigation, rodent control, rodent damage, rodenticide, rodenticide restriction, secondary hazard

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### INTRODUCTION

Liphatech Inc., is a manufacturer of rodenticide products, utilizing three active ingredients that were discovered and commercialized by a pharmaceutical manufacturer based in Lyon, France. We are also a member of the Rodenticide Registrants' Task Force (RRTF), and have been closely following the reregistration and ecological risk assessment processes for rodenticides. The views expressed in this paper represent only Liphatech. RRTF members have achieved consensus on many

issues, but my remarks may not reflect the opinions or positions of all rodenticide manufacturers or RRTF members.

While others have addressed risks to wildlife, I would like to focus on the most important non-target species in this country that should most concerns us: human beings! Liphatech would like to speak out on behalf of the "retail consumers" in America. The U.S. Environmental Protection Agency (EPA) estimates that homeowners spend more than \$90 million per year on rodent control, with 90% of that amount spent on

bait. It is critical that our discussions about the non-target hazards of rodenticide take account for the risk to people: "Some rodents can be injurious to humans and their belongings. Both introduced and native species may be carriers or reservoirs for infectious diseases. Rodents may cause economic damage to crops; consume and contaminate stored food supplies; disturb soil through burrowing activities; damage houses, other types of buildings and man-made structures; and prey on native species, including birds that nest on oceanic islands. It is generally estimated that commensal rats cause between \$0.5 and \$1.0 billion of economic losses in the United States annually" (Edwards 2007).

Under the mitigation measures proposed by EPA on January 17, 2007, homeowners would no longer have access to baits containing second generation anticoagulant rodenticides (SGARs). The proposal also includes a requirement that all rodenticide for sale to a consumer must be sold in a tamper-resistant bait station, with solid bait blocks as the only permissible bait, in order to reduce the number of children exposed to these products.

The EPA's analysis "Potential Risks of Nine Rodenticides to Birds and Non-target Mammals: a Comparative Approach" (Erickson and Urban 2004) does not show that second-generation anticoagulant rodenticides present a significant hazard to non-target wildlife. This comparative risk assessment does not fully assess "risk" because it does not assess the "exposure" component of the risk equation (i.e., risk = toxicity X exposure) as is necessary if one is to fully assess risk. The assessment and "peer review" were not conducted in accordance with EPA's own guidelines. The document clearly states that the analysis is severely limited, discussing the uncertainties at length, and showing an extensive list of the "data needs" necessary for the analysis

to be made meaningful. There has been no data call-in to gather the necessary information. There were many public comments concerning the poor science and other major deficiencies of this risk assessment, and we note that EPA has failed to respond to most of these criticisms. At best, this analysis simply makes a case that primary and secondary hazards are possible. Yet, we see EPA acting as if there were no questions or uncertainty surrounding this analysis: "EPA's comparative ecological risk assessment concludes that all nine rodenticide active ingredients pose significant risks to non-target wildlife when applied as grain-based bait products." (Edwards 2007)

More important for this discussion, EPA's analysis does not include a meaningful assessment of public health impact and benefits of rodenticide use. How will the proposed restrictions affect consumers who are trying to control rodents in their homes? What do the public health experts of the U.S. government have to say about this proposal? There is nothing substantial in the docket from the Centers for Disease Control, Department of Agriculture, or Housing and Urban Development, despite the statement that EPA will "continue its ongoing consultations..." with these agencies. Where can we find the needed analysis of the societal benefits of rodenticide use?

Perhaps we can find our answers in the Agency's "Impact Assessment for Proposed Rodenticide Mitigation" (Edwards 2007). This document emphasizes risks to children from exposure to rodenticide, showing that there were more than 17,000 reported "rodenticide exposure incidents" per year (3-year average for 2003-2005), and the reported cases may only account for a quarter of all actual exposures. Where the outcome of the reported exposure is known, 93% are reported as "no effect," although

some costs are incurred from health facility visits and: "In addition, there are likely to be costs associated with lost productivity for the time and anxiety associated with a call to a poison control center" (Chiri et al. 2006). The impact assessment mentions various figures about rat-bite incidents, including a 1969 estimate of 14,000 bite incidents per year to the 140 million city dwellers in the U.S. Notably, the document fails to assign any cost, time lost or anxiety associated with this large number of rat bite incidents.

The assessment also purports to make an estimation of some of the costs to users associated with the mitigations, including a "socio-economic equity assessment." It discusses "several economic methods that can be used to place a value on ecosystem services." It mentions the potential for market distortions and the large uncertainty associated with estimating the costs of the proposed actions.

In the end, however, this impact assessment was unable to "monetize" the potential costs, the health effects or environmental benefits associated with the proposed mitigation actions. There is no explanation of how the cost versus benefit is weighed. Instead, we are left with only the general conclusions that the proposed mitigation should not have an adverse impact on residential users in terms of significantly increased costs or decreased effectiveness. These conclusions are founded on some dubious assumptions, including these: "One snap (or glue) trap is assumed to be, roughly, the equivalent of one bait station with bait blocks" (Chiri et al. 2006). "Low income consumers living in apartment buildings most likely rely on the building owner or manager for rodent control inside the apartment or building" (Chiri et al. 2006). "EPA assumes that consumers' selection of rodenticide baits is primarily driven by trade names and not by the active ingredients contained in the baits"

(Chiri et al. 2006). "EPA further believes that replacement of second-generation anticoagulants with first generation anticoagulants will not significantly affect the homeowners capability to control rodents..." (Edwards 2007). Are we sure about this? On this very same page, EPA states that second-generation rodenticides are superior in controlling rodent populations: "For those residential settings where second-generation anticoagulants provide a distinct advantage, these products would still be available from certified applicators" (Edwards 2007). EPA clearly recognizes that the older, first generation rodenticides will likely not be as effective: "Multiple dose (first generation) anticoagulant baits are especially vulnerable to situations where the availability of alternative food sources make it less likely that a rodent will return to feed on baits for several days in succession until it ingests a lethal dose" (Chiri et al. 2006).

Certainly, the older, first-generation rodenticides can be made to pass EPA's laboratory efficacy tests, but are they equal to the SGARs in controlling rodent populations? Trade name (or brand) awareness and loyalty are a result of the product's perceived value to the consumer. If the consumers do not get the expected value (if the product does not work as expected) then the trade name will not draw the consumers' interest. The brand names that are recognized and attractive to consumers have established a history and reputation for their effectiveness. If the popular brand does not work very well, it will not be popular very long! Consumers are, in fact, selecting the active ingredient. When they select products with a history and reputation for good performance, they select the active ingredient that provides this performance.

Should these important risk mitigation decisions be based on broad,

untested assumptions? Is it prudent to examine how the proposal could affect humans and non-target wildlife if these critical assumptions do not hold true? Do we really believe that there will be no impact when the highly effective SGAR products are taken away from consumers? Let us consider: "Since a wide range of rodent control options would continue to be available, no adverse impact on the frequency of rat bites is expected as a result of the proposed mitigation" (Chiri et al. 2006). The 1969 estimate of 14,000 bite incidents per year was based on an estimate of 140 million city dwellers. The 1970 U.S. population of 213 million has now grown to more than 300 million, an increase of more than 40%. The population of city dwellers may have increased by an even greater percentage, but let us assume that urban population growth has been the same as the general population. That gives us an estimate of about 197 million urban dwellers today. Has the rate of rat bites remained at the same rate? If so, there would be almost 20,000 rat bites per year in the U.S. How many of these rat-bite incidents would be considered "no effect," compared to rodenticide "exposure incidents" where 93% are classified as "no effect?" If the proposed restrictions do, in fact, make rodent control more difficult and less effective, will the number of rat bites increase? What is the social and medical cost associated with bite incidents, compared to the rodenticide exposure incidents? Are the proposed restrictions truly "protecting children" from the real hazards posed by rodents?

EPA's cost analysis shows the consumer's "cost" could decrease by using traps rather than rodenticide. The cost is estimated to increase by 83% up to 976% if the consumer chooses to continue using bait, which must be pre-packaged in a bait station under the proposed requirements. Due to the very stringent requirements for a "tamper

resistant" bait station, actual costs are likely to be even higher. Cost to the consumer increases by at least 10,000% if the services of a professional pest control operator are necessary. What would be the real cost of the proposed restrictions?

Perhaps we can consider the alternatives more carefully for the answers. Snap traps and glue traps have always been the lowest-cost control method, but consumers have still chosen to spend 90% of their money on bait products. This suggests that consumers have determined that baits are more effective in controlling rodent infestations, in spite of EPA's assumptions to the contrary. If consumers continue to choose rodenticide baits as the most effective control method available to them, then the EPA's analysis shows that their costs will rise dramatically. Using EPA's own numbers, the \$90 million currently spent on baits could rise to \$175 million (95% increase) or even up to \$878 million (976%). At what point will increased costs become significant? How does EPA make a cost/benefit analysis to support the stated conclusion: "EPA has concluded that the expected reduction in children's exposure to rodenticide bait products outweighs the estimated cost increase due to the requirement for tamper-resistant bait stations" (Edwards 2007).

How have we arrived at such a situation, where such important public health decisions are based on such flimsy analyses? It appears that we see the precautionary principle in action: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" (Ashford 1998).

Is there a better way to address the concerns that have been identified? Since the first stakeholder meetings were held in 1999 and 2000, the RRTF has promoted



sensible mitigation measures that could be implemented quickly and with little cost to the consumer. These mitigation would offer increased protection to wildlife and children, while still allowing the public's access to the most effective rodent baits available: using label language that is more clear, understandable and informative to the consumer; providing consumer education through internet sites and point-of-sale signs/brochures; directing consumers to use smaller bait placements; limiting consumer rodenticide application to inside of buildings; and inclusion of bittering agents in consumer products.

Several times, the RRTF group has attempted to prod EPA into adopting the label improvement measures, but each time EPA failed to move forward. EPA has generally considered product label improvements to be the first tool for promoting product stewardship. In the past 20 years, EPA has developed many label improvement programs, including a large effort called the "Consumer Labeling Initiative." Thus, it is particularly surprising that EPA has not initiated label improvements for rodenticides before taking more drastic actions: "Independent of the mitigation measures discussed above, EPA is currently considering specific labeling improvements to make rodenticide labels clearer and more understandable. In particular, the Agency is focused on labeling changes that would provide clearer direction to consumers on how to use rodenticide products in order to minimize potential exposure to children, wildlife, and pets. The Agency has concluded, however, that labeling enhancements alone would not

mitigate the risks to children and wildlife to a sufficient degree." (Edwards 2007)

How has EPA reached this important conclusion about the insufficiency of label improvements? What specific improvements could be made, and how would their effect be measured? The product is the best means of communicating important information to the user of a pesticide product. Why would label improvements be delayed, rather than used as the first stewardship effort?

All of the reasonable mitigation proposed by RRTF can help to reduce the exposure of children and non-target wildlife to rodenticides. These low-cost measures should be implemented and properly evaluated before EPA denies consumer access to these effective rodent control products.

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