Pest Management Regulatory Agency
Agence de réglementation de la lutte antiparasitaire

Re-evaluation Note REV2007-03

Update on the Re-evaluation of Strychnine

The purpose of this Re-evaluation Note is to notify registrants, pesticide regulatory officials and the Canadian public that Health Canada's Pest Management Regulatory Agency (PMRA) is implementing interim measures for products containing strychnine.

These interim measures are consistent with the Proposed Acceptability for Continuing Registration document PACR2005-08, *Re-evaluation of Strychnine*, published on 26 September 2005.

The PMRA has determined that the use of strychnine to control Northern pocket gophers, skunks, pigeons, wolves, coyotes and black bears is acceptable for continued registration with the implementation of the mitigation measures listed in PACR2005-08 because risk to human health or the environment can be adequately mitigated.

The use of strychnine to control ground squirrels (i.e., Richardson's, Columbia, Franklin and thirteen-lined) is a concern from an environmental perspective. The PMRA will maintain the use of strychnine to control ground squirrels for the short term with implementation of interim mitigation measures listed in PACR2005-08. This use of strychnine will be reviewed in 2008 upon completion of the Richardson's ground squirrel pest management strategy.

A re-evaluation decision on strychnine will be made, and a decision document will be published when that review is completed.

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Publications
Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive
A.L. 6605C
Ottawa, Ontario
K1A 0K9

Internet: pmra_publications@hc-sc.gc.ca
www.pmra-arla.gc.ca
Information Service:
1-800-267-6315 or 613-736-3799
Facsimile: 613-736-3758

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1.0 Comments Received on the Re-evaluation Proposal for Strychnine

The PMRA published PACR2005-08, *Re-evaluation of Strychnine,* on 26 September 2005 for public consultation. Comments were received from a number of stakeholders including other federal departments, provincial departments, municipalities, users, producer associations and environmentalist groups.

Some of the respondents expressed support for the proposed approach to the use of strychnine for the control of ground squirrels. These respondents raised concerns regarding the lack of practical alternatives and the need for methods to effectively control a pest that may pose significant damage to crops. However, some stakeholders also raised concerns regarding the environmental impact of strychnine use.

In PACR2005-08, the PMRA recognized that the current use of strychnine is a concern for the environment due to its acute toxicity to non-target organisms. Identified risks posed by the use of strychnine for control of Northern pocket gophers, skunks, pigeons, wolves, coyotes and black bears are addressed by the mitigation measures listed in PACR2005-08. However, the environmental concerns still remain for the use of strychnine to control ground squirrels.

2.0 Interim Risk-Mitigation Measures

Based on the review of available information and comments received, the PMRA will require implementation, in the short term, of the risk-mitigation measures as listed in PACR2005-08. A final decision on the use of strychnine will be made after consideration of the ongoing work by a national expert committee to identify, develop and promote a pest management control strategy for Richardson's ground squirrels.

The registrants have been informed by letter of the specific requirements affecting their product registrations and the regulatory options available to comply with this stage of the re-evaluation of strychnine.

3.0 Pest Management Strategy for Richardson's Ground Squirrels

Richardson's ground squirrels are considered as one of the major mammalian pest impacting agriculture in the Prairies. The most commonly recommended control option is poisoned food-based baits. Strychnine-treated grain still remains as the most commonly used control option. However, strychnine bait provides only short-term control, primarily during the spring prior to green up. Strychnine is a poor control choice during the summer months, when feeding is highest and young rodents have emerged aboveground.

In 2002, the Richardson's Ground Squirrel Integrated Pest Management Steering Committee, consisting of experts from producers, industry, researchers, provincial governments and the PMRA was created to provide advice on sustainable control of Richardson's ground squirrels in the Prairies. The primary objective of this Committee is therefore to identify, develop and promote the use of products other than strychnine as well as viable non-chemical integrated pest

management-compatible control methods. The current lead for this Committee is the Saskatchewan Agriculture and Food. The targeted year for the completion of this project is 2008.

In this regard, aluminum phosphide (Phostoxin, Registration Number 16351) was granted temporary registration in 2003 for the control of woodchucks and Richardson's ground squirrels. The efficacy of Phostoxin has been demonstrated in several different crop and soil types, and a training course has been developed to instruct growers on the safe use of this restricted product.

The PMRA is working with the Saskatchewan Association of Rural Municipalities and the Saskatchewan Ministry of Agriculture and Food to facilitate a pilot project to promote the use of Phostoxin as an alternative chemical to strychnine. The Southwest Saskatchewan (Swift Current, Maple Creek), where high densities of Richardson's ground squirrels have been observed, will be the target site for this pilot project. The pilot will include field trials to compare Phostoxin and strychnine (2% and ready-to-use) as well as an economic impact study. The target date for the implementation of this pilot project is by April to May 2007.

4.0 Comments on the 1992 Regulatory Decision on Formulation Restriction

During the comment period for PACR2005-08, the PMRA also received comments regarding the 1992 regulatory decision to restrict the availability of strychnine to 0.4% ready-to-use (RTU) formulations and to eliminate the sale of the 2% liquid strychnine concentrate to end users[1]. Some users have expressed dissatisfaction with the efficacy of the available strychnine formulation in the market; therefore, they are requesting the reinstatement of the registration of the 2% liquid formulation.

The PMRA re-evaluation program focuses on the acceptability of currently registered uses for continuing registration and does not entail a review of past regulatory decisions. Possible serious adverse effects to human health and the environment were the basis of the 1992 decision to restrict the availability of 2% liquid concentrate strychnine. It has also been widely known that strychnine has a very high acute toxicity and it has been, and continues to be, implicated in unintentional and intentional poisoning (e.g., dogs, wildlife). Restricting user access only to 0.4% strychnine bait formulations was considered at that time, and is still considered to be, a prudent approach. These fresh bait products are considered to be safer to use, while providing a concentration of strychnine similar to that provided in bait mixed from the 2% strychnine concentrate. The governments of Alberta and Saskatchewan are supportive of the use of the commercially available RTU strychnine products.

The results of the re-evaluation of the current uses of strychnine as described in PACR2005-08 lead to the conclusion that the PMRA could not support the use of 2% liquid strychnine for the control of ground squirrels. As noted above, in 2007, there will be field trials comparing Phostoxin and strychnine (both 2% and ready-to-use).

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1 Note to CAPCO C92-09, *Strychnine, Reduction of allowable use pattern*, published by Agriculture and Agri-Food Canada on 22 December 1992.