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Upcoming Changes in Anticoagulant Rodenticide Registrations

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Introduction

Rodenticides are frequently used to control a number of damaging pests in California including pocket gophers, ground squirrels, voles, jackrabbits, rats, and mice. Reasons for their popularity include high efficacy at controlling target species, quick application and removal times for target pests, and relatively low cost of application compared to alternative approaches. When used according to label specifications, rodenticides pose relatively little risk to the handler and non-target species. However, if label specifications are not followed, the risk of non-target poisoning increases. These non-target poisonings are detrimental to humans and to the environment and are of great concern to many California residents.

Many different rodenticide products are currently registered for sale in California, although all fall into two main categories: 1) acute toxicants, and 2) anticoagulants. Acute toxicants cause death after a single feeding, often within a few hours. Examples of acute toxicants include strychnine, zinc phosphide, and bromethalin. These pesticides are usually restricted-use materials (the below-ground application of zinc phosphide and 0.5% strychnine baits for pocket gopher and mole control are exceptions), requiring a special applicators certificate or license to purchase and/or apply. Because of these restrictions, their use has not been as frequent as anticoagulant rodenticides.

Anticoagulants are the more commonly-used rodenticides. Two different classes of anticoagulants are available for use: 1) first-generation anticoagulants, and 2) second-generation anticoagulants. The first generation materials include warfarin, chlorphacinone, and diphacinone. These rodenticides require multiple feedings over the course of 3–5 days. If these toxicants are not consumed 3–5 days after they were first ingested, mortality will not occur. Because of this multiple feeding mechanism, first-generation anticoagulants are often considered to have the least impact on non-target vertebrates. As such, they are the only anticoagulants registered for use in a field setting.

In contrast to first-generation anticoagulants, second-generation anticoagulants (e.g., brodifacoum, bromadiolone, and difethialone) require only a single feeding to kill target pests. However, mortality does not occur for up to five days post-consumption, so time to death is equivalent for both classes of anticoagulants. Because mortality takes a minimum of 5 days to occur, these pests can continue to



Adult California Ground Squirrel

photo: Jack Kelly Clark, courtesy UC Statewide IPM Program

consume bait over this time period, potentially resulting in high anticoagulant build-up in muscle tissue. It is this potential for bioaccumulation of these second-generation anticoagulants that restricts their use to non-field settings. Therefore, these materials are exclusively used for rat and mouse control in residential areas and in and around agricultural buildings.

Impending Changes to Agricultural and Professional Use of Anticoagulant Rodenticides

Historically, anticoagulants have not been restricted-use materials. However, the U.S. Environmental Protection Agency has recently changed the classification of first-generation anticoagulants to federally restricted-use pesticides for agricultural use meaning that application of these materials in an agricultural setting can only occur under the supervision of a certified applicator. This is an important change as many growers, Pest Control Advisers, etc., have used anticoagulants (primarily chlorphacinone and diphacinone) for several decades to control California ground squirrel (*Ostospermophilus beecheyi*) and jackrabbit (*Lepus californicus*) populations. Such situations will soon require a certified applicator to apply these poison baits thereby limiting their availability to smaller property holders. Second-generation anticoagulants will not become restricted-use materials. However, other changes will be enacted that will limit access to these materials. These changes will officially

be enacted on April 4th, 2011. Useful information for these changes is as follows:

• **First-generation anticoagulants**

- Starting April 4, 2011, you will have to have a certified applicators certificate or license to apply. Common examples include Qualified Applicator Certificate (QAC), Qualified Applicator License (QAL), and Private Applicator Certificate (PAC). A QAC/QAL allows the user to apply or supervise the application of pesticides on property other than their own, although differences exist between the three depending on purpose of the application (see DPR website for further information: <http://www.cdpr.ca.gov/>). A PAC allows pesticide application only on the property of the user or supervisor. A QAC/QAL is obtained from the California Department of Pesticide Regulation (CDPR). To obtain one of these, you must pass an exam from DPR indicating your knowledge on pesticides and pesticide regulations; a fee is also required. A PAC is obtained from the local County Agricultural Commissioner's office. As with the QAC/QAL, you must pass

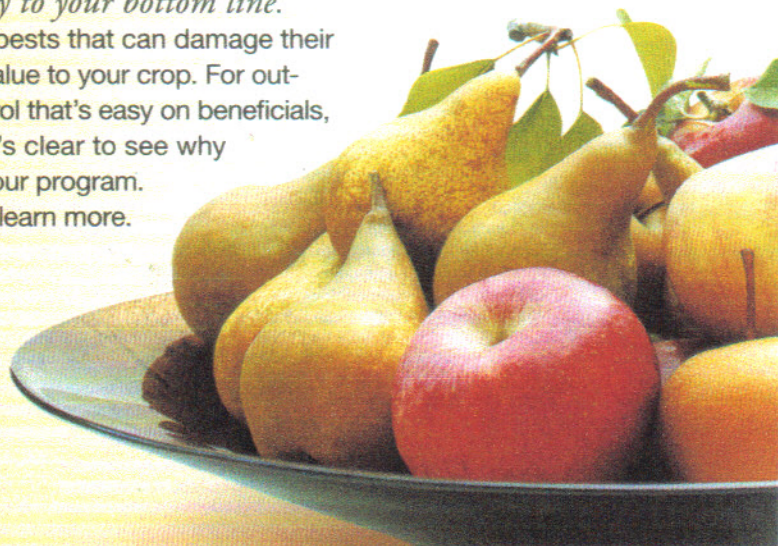
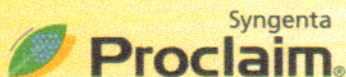
an exam on pesticide use and regulation. However, this exam is free. For all certificates or licenses, Continuing Education (CE) credits must be taken to maintain all pest control certificates and licenses. The number of hours of CE required depends on the certificate or license held by the user.

- With California restricted-use materials, a Notice of Intent (NOI) is required to be submitted to the County Agricultural Commissioner's office before application. However, as it currently stands, CDPR has chosen not to pursue restricting the use of first-generation anticoagulants. Therefore, no NOI is required before using these materials. This could change in the future, so be sure to keep abreast of this situation. If you have any questions about NOI's, contact your local County Agricultural Commissioner's office for further details.
- Quantities of first-generation anticoagulants must meet or exceed 4 pounds when purchased by professional applicators or for agricultural use. This is to limit access to homeowners. That being said, these materials can still

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be purchased for use on commensal rodents (e.g., rats and mice) in and around buildings, although purchase of these materials is limited to tamper resistant (pre-baited) bait stations containing less than or equal to one pound of product; this bait cannot be loose like grain or pellets, but rather must be solid as a wax bait block or paste bait. Refills may be packaged with the bait station, although total weight of bait cannot exceed one pound. Refills will not be sold separately from bait stations. As such, bait stations must be discarded when bait is gone and new bait stations purchased if additional bait is needed.

- Anticoagulant baits will not be restricted for pocket gophers (*Thomomys* spp.) and moles (*Scapanus* spp.) as application for these species occurs below-ground.

- **Second-generation anticoagulants**

- Historically, second-generation anticoagulants have never been registered for use in agricultural fields and will not be allowable for this purpose in the future. However, they have been available for use in and around (within 50 feet) agricultural buildings (e.g., barns, dairies, etc.). This use will continue. However, they will no longer be available for purchase in consumer-size packages. Rather, they will be available for sale only in farm-supply stores and only in packages ≥ 8 pounds to discourage homeowner use.

Second-generation anticoagulant baits sold in this manner are only for use within 50 feet of agricultural buildings. They may not be used in fields or in or around residential buildings. Additionally, these baits must be placed in bait stations when applied aboveground or in outdoor settings; bait stations are only required for indoor use when children and non-target animals have access to baits.

- Professional applicators may purchase these materials in packages of ≥ 16 pounds for use in homes and in and around agricultural buildings. Other restrictions remain the same as those for general agricultural use listed above.

What does this mean? A review.

These changes may have little impact on professional pest control advisers and growers with larger farms as most of these individuals will already have some form of pest control license for controlling weed or insect pests. However, these changes have potentially large ramifications for smaller private applicators who have typically used these materials to control ground squirrels, jackrabbits, or other previously labeled pest species. To control these pests in the future, they will either need to hire someone to apply these rodenticides, consider an alternative option for control, or become certified for pesticide use. This certification process

can be problematic for some small landowners as these tests are strongly geared toward herbicide and insecticide applications which can contain computationally challenging pesticide-conversion questions. Unfortunately, these tests seldom contain questions related to rodenticide use, of which volume conversions are seldom, if ever, needed. Tests more pertinent to rodenticide application could increase the availability of PACs to small landowners while more accurately gauging their knowledge on rodenticide application. Currently, University of California Cooperative Extension and California Department of Food and Agriculture staff are working to provide an alternative exam for rodenticide certification. However, the proposed approach will have to be approved by CDPR before implementation, and there is no guarantee that this will occur. Until then, the above outlined steps will need to be taken to legally use anticoagulant baits for rodent control. 🐭

