



BEYOND PESTICIDES

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November 4, 2011

National Organic Standards Board
Fall 2011 Meeting
Savannah, GA

Re. Comments on Odorized Propane

Dear Board Members:

These comments are submitted on behalf of Beyond Pesticides. Beyond Pesticides, founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and groups around the world.

We support the recommendation of the Crops Committee to deny the petition to allow propane in explosive devices to kill rodents. As we will explain below, this use meets none of the requirements of the Organic Food Production Act—it does not fit into a category of allowed synthetic inputs, it has many adverse ecological impacts, there are many alternatives available, and it is inconsistent with a system of organic and sustainable agriculture. Although we support the recommendation of the Crops Committee, we find their justification document to be very weak and lacking in the support for the recommendation that is in the posted Technical Review (TR) and other documents available to the committee. The following information, with citations from the TR and other sources, supports the recommendation of the committee.

1. The use does not fit within any of the allowable uses of synthetic inputs into organic production.

7 U.S.C. 6517 lays out requirements for the National List. Subsection (c)(1)(B)(i) lists the categories of active materials that may be allowed.¹ Odorized propane used to explode rodent burrows falls under none of these categories, as is indicated by the committee's responses to

¹ (B) the substance -

(i) is used in production and contains an active synthetic ingredient in the following categories: copper and sulfur compounds; toxins derived from bacteria; pheromones, soaps, horticultural oils, fish emulsions, treated seed, vitamins and minerals; livestock parasiticides and medicines and production aids including netting, tree wraps and seals, insect traps, sticky barriers, row covers, and equipment cleansers;

questions 7a through e under “Category 3. Is the substance compatible with organic production practices?” The committee’s answers to these questions should have caused them to answer “no” to the question on page one concerning whether the compatibility and consistency criteria are satisfied.

2. The use of propane to explode rodent burrows has a number of adverse ecological impacts.

First, in terms of its source, propane is produced from natural gas or petroleum, non-renewable fuel resources. (TR lines 192-195)

Second, as noted in the TR (272-273), “The petitioned method of collapsing burrows using propane may injure or kill nontarget species occupying or living nearby the treated burrows.” Many of these nontarget species are predators of the rodents, so that exploding the burrows may interfere with natural controls on rodent populations. Predators of burrowing rodents include weasels, badgers, ferrets, hawks, falcons, bald eagles, great horned owls, red fox, coyote, prairie rattlesnakes, bull snakes, gopher snakes, pine snakes, king snakes, skunks, barn owls, badgers, weasels, foxes, hawks, raccoons, bobcats, and domestic cats and dogs. Many of these predators seek out their prey in the burrows and may be killed with them in explosions.

Furthermore, these rodents and their burrows form the basis of large ecosystems. The following description, taken from an article about ground squirrels in California, illustrates this fact:

Belowground, the burrows are sheltered and cool no matter the weather above. This comfortable climate draws a diverse cast of grassland animals —mice, voles, tarantulas, and several species of beetles that live exclusively in rodent tunnels. Then there are the local amphibians. Ground squirrels actually make it possible for moisture-loving amphibians to live in the hot, dry hills of the Diablo Range. As the weather warms and ponds dry up, California red-legged frogs, western toads, ensatina salamanders, and California tiger salamanders retreat to the cool refuge of squirrel burrows —often while the squirrels are still living inside. The frogs and toads come and go, but the taxicab-tinted tiger salamanders move in for the long haul: they stay underground for up to ten months each year, emerging only in winter to breed.

With this crowd, squirrel burrows are almost mini-ecosystems of their own. Worms and beetles crawling out of the walls may get eaten by the amphibians, while mice and voles go after the squirrels’ caches of nuts and seeds. Larger creatures— burrowing owls, coyotes, and San Joaquin kit foxes—often enlarge abandoned burrows and convert them into dens.

But ground squirrels do even more for grassland ecosystems than spread seeds and build shelters. Plentiful and prolific, they are a dinnertime mainstay for most of California’s savanna predators. Local badger populations depend almost entirely on ground squirrel colonies, says retired district naturalist Ron Russo. And studies of golden eagles in the park district show that ground squirrels may comprise up to 70 percent of their diets when the birds are rearing their young. DiDonato says the sheer abundance of ground squirrels

around San Antonio Reservoir and Sunol Regional Wilderness supports the densest population of nesting golden eagles anywhere in the world. And back when grizzly bears prowled California, they dug out entire colonies for a snack.”²

Similarly, prairie dogs appear to be a keystone species:

“Interestingly enough, the survival of many other species seems to hinge on the survival of the prairie dog. About 90% of the [black footed] ferret's diet consists of prairie dogs. In addition, the golden eagle, Ferruginous Hawk, and swift fox diets include a large percentage of prairie dogs. According to Nicole Rosmarino/Southern Plains Land Trust,⁽¹²⁾ the mountain plover appears to be a prairie dog obligate or at the very least is highly dependent on prairie dogs for survival, using the borrows for breeding, nesting, and feeding. Burrowing owls, prairie falcons, badgers and a host of other prairie animals are associated with prairie dog colonies. In fact, some ecologists consider the prairie dog to be a keystone species of the prairie.⁽¹²⁾ According to Miller et. al,⁽¹³⁾ nearly 170 species rely on prairie dog colonies to some extent for their very survival. Miller further concludes that the prairie dog fits the definition of a keystone species because prairie dogs affect the ecosystem structure, function, and composition in a way that is not duplicated by other species.”³

A number of the inhabitants of rodent burrows are threatened or endangered species, including black-footed ferret,⁴ California red-legged frog, California tiger salamander, Northern Idaho ground squirrel, and Utah prairie dog.

In addition, as noted in the TR (273-282), the explosions may cause fires if nearby vegetation is dry, and:

If a fire is produced from the propane explosion, soil structure may be altered and soil organic matter may be lost or consumed. Reduced soil porosity and increased soil pH due to alterations in soil chemistry may also be expected. These effects can indirectly affect water retention of the soil and increase erosion. Depending upon the severity, duration, and other characteristics of the fire, soil damage can be slight to more severe; in most cases, the effects of fire are minor and short-lived (BCMAFF, 2004).

Finally, as noted in the TR (308-310), “The use of propane/oxygen explosion devices also poses a physical safety risk to the operator. Improper use and/or inadequate safety gear could result in injury from explosion, flying debris, or fire (Meyer Industries, 2010).”

² Lord of the Burrows: The Incredible Edible Ground Squirrel, <http://baynature.org/articles/jan-mar-2008/lord-of-the-burrows>

³ <http://environmentalchemistry.com/yogi/environmental/200706prairiedogreconciliation.html>

⁴ “The black-footed ferret is an endangered species that lives almost exclusively in prairie dog towns, and all active prairie dog colonies are potential black-footed ferret habitat. It is a violation of federal law to willfully kill a black-footed ferret or poison prairie dog towns where ferrets are present.” Internet Center for Wildlife Damage Management, <http://icwdm.org/handbook/rodents/PrarieDogs.asp>

Thus, the use of propane to explode rodent burrows does have a number of negative impacts on human health and the environment, and the committee should have checked “No” for the question on page 1 concerning whether the criteria concerning impact on humans and environment was satisfied.

3. There are many alternative practices preferable to exploding rodent burrows.

First of all, there is some question concerning the effectiveness of collapsing rodent burrows “as ground squirrels easily find and reopen old burrows.”⁵ The Internet Center for Wildlife Damage Management (cooperative program of Cornell University, Clemson University, University of Nebraska at Lincoln, and Utah State University) lists as solutions for pocket gophers: habitat modification (crop rotation, buffers, and flooding), traps (several kinds), toxic chemicals (fumigants not recommended), and propane exploding devices. About the latter, they say:

Propane Exploding Devices: New devices on the market utilize a mixture of propane and oxygen which is pumped into the tunnel system and ignited. While the concussion of the explosion would certainly kill the animal (assuming it was close enough), we have not seen any peer-reviewed evidence of its efficacy on pocket gophers at this time. We should also caution potential buyers to consult with their state's division of wildlife BEFORE purchasing such devices. Some states prohibit the use of explosive devices on wildlife.⁶

The TR mentions some alternative materials and practices. It mentions vitamin D₃ as a rodenticide in baits, and the hypothetical use of carbon dioxide as a fumigant in burrows (316-330) as alternative substances. It also mentions a number of practices (340-367) to control burrowing rodent populations: trapping, natural predation, increased predation through improved predator habitat, shooting rodents, flooding burrows, and ecologically-based rodent management (EBRM):

EBRM relies on knowledge of the population biology, social behavior, taxonomy, and community ecology of rodents in establishing appropriate pest management methods. EBRM principles have proven successful in a number of studies in several countries including Vietnam (Singleton et al., 2004; Brown et al., 2000). Tested EBRM systems include most or all of the following: trap-barrier systems, physical destruction of burrows, synchronized planting and harvesting of crops, clean up of weeds and other refuse, and embankment size reduction to discourage burrowing. When these strategies were employed together, EBRM was just as effective as traditional rodent management (e.g., rodenticides), and these strategies often cost less than traditional methods (Singleton et al., 2004; Brown et al., 2000). (TR 359-367)

⁵ University of California Agriculture and Natural Resources Statewide Integrated Pest Management Program, Ground Squirrel. <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7438.html> Accessed 10/22/2011.

⁶ <http://icwdm.org/wildlife/pocketgopher.asp>

In addition to the TR, there is quite a bit of information available about management of damage by burrowing rodents from wildlife damage managers. We're talking about killing quite a wide range of animals here, so we will chose a few examples to illustrate other management methods.

United Wildlife Control is a nationwide company "servicing all animal, bird, bat, reptile, and insect problems." (<http://www.unitedwildlife.com/AnimalsPrairieDogs.html>) Their list of methods for controlling prairie dogs includes: *cultural methods (grazing management, rest/rotation grazing, grazing distribution, cultivation), trapping (cage traps, lethal traps, "sucker upper"), shooting, and rodenticides.*

One website, after giving a list of lethal methods of controlling prairie dogs, says the following:

There are many alternatives to lethal removal of prairie dogs. One alternative, being proactive, is often the least used, and sometimes the most successful technique of all. If the rangeland is managed properly from the start, and not over farmed or over grazed, the prairie dogs are not as likely to take over.⁷

In the same vein, the UC IPM Program recommends habitat modification for ground squirrels and gophers:

You'll generally find ground squirrels in open areas, although they sometimes use available cover. Remove brush piles and debris to make an area less desirable. This also aids in detecting squirrels and their burrows and improves access during control operations.⁸

Reducing gopher food sources using either chemical or mechanical methods can decrease the attractiveness of lawns and gardens to gophers. If feasible, remove weedy areas adjacent to yards and gardens to create a buffer strip of unsuitable habitat.⁹

Taking all this into consideration, there is no need to approve the use of propane for exploding rodent burrows, and we agree with the Crops Committee evaluation that the petition does not meet the essentiality and availability criteria.

4. The use of propane to explode rodent burrows is incompatible with organic and sustainable practices.

We mentioned earlier that this use does not fit within any of the allowable uses of synthetic inputs into organic production. On October 17, 2001, the NOSB adopted "Principles of Organic Production and Handling." The first principle is:

⁷ Roberta Barbalace. Prairie Dog Control Part II. EnvironmentalChemistry.com. Apr. 24, 2007. Accessed 10/22/2011

<http://EnvironmentalChemistry.com/yogi/environmental/200704prairiedogcontrollethal.html>

⁸ <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7438.html>

⁹ <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7433.html>

- 1.1. Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. These goals are met, where possible, through the use of cultural, biological, and mechanical methods, as opposed to using synthetic materials to fulfill specific functions within the system.

We have seen above that there are alternative methods of managing damage from burrowing rodents that promote and enhance biodiversity, biological cycles, and soil biological activity, while the use of propane to explode rodent burrows does the opposite. The alternatives use management practices to do what this petition proposes to do with off-farm inputs. Cultural and biological methods are particularly important for the management of damage from burrowing rodents, and the use of propane to explode burrows is thus incompatible with a system of organic agriculture. Since propane is produced from non-renewable fuel sources, it is inconsistent with sustainable agriculture.

5. Exploding Burrows with Propane is Unnecessary to Manage Damage from Gophers and Ground Squirrels in California.

The petition for propane is a very broad one, encompassing many species in many ecosystems and agricultural settings, and our comments have also had to be very broad to address the extensive possibilities. However, since CCOF is the petitioner, it may be worthwhile to focus a bit on the particular rodents they identify as particular problems in California, even though their petition states, “Because the economics of this type of damage was hard to quantify, there would be no basis to suggest an annotation limiting the use to one type of burrowing pest over another.”

CCOF’s petition states, “[T]here are more alternative choices for gopher control than there are for the more destructive and harder to control ground squirrel.”¹⁰ The University of California says, “Most people control gophers in lawns, gardens, or small orchards by trapping and/or by using poison baits.” CCOF admits that traps are effective for gophers, but notes that they are time-consuming to use. However, the amount of time needed (stated by CCOF in the petition), is one to two hours per acre, which compares quite favorably to the time needed to use the Rodenator in the prairie dog study included in the CCOF petition —3.4 to 4 hours per acre.

The University of California¹¹ has rated several approaches to controlling ground squirrels based on a number of factors: efficacy, cost of materials, labor, and restrictions on use. Exploding burrows ranks in the lowest category for efficacy and the highest for cost of materials and labor. Habitat modification and biological control have similar efficacy with lower materials cost and labor. Shooting has similar efficacy, with lower materials cost. Trapping has

¹⁰ UC IPM online, Pocket Gophers. <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7433.html> Accessed 11/2/2011

¹¹ University of California, Ground Squirrel Best Management Practices. http://ucanr.org/sites/Ground_Squirrel_BMP/CONTROL_METHODS/ Accessed 11/2/2011.

similar materials cost and labor, but higher efficacy. Burrow destruction (ripping up burrows rather than exploding them), which may not be appropriate in settings like orchards, has higher efficacy and lower materials cost and labor.

Elsewhere in these comments we have addressed the ecological role of California ground squirrels. Not only is the approach of exploding burrows damaging to the ecosystem and some threatened and endangered species, but other methods are more effective and/or less costly.

Because the use of propane to explode rodent burrows meets none of the requirements of the Organic Food Production Act, we urge you to deny the petition.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry Shistar". The signature is fluid and cursive, with a long horizontal stroke at the end.

Terry Shistar, Ph. D.
Board of Directors