

Unintended Consequences

By Rebecca Miller-Cripps

“Unintended consequences” is a phrase used to refer to an economic policy or governmental regulation that, on the surface, appears to benefit specific groups of people or society as a whole. In reality, the policy or regulation creates a situation that is damaging or has impacts opposite what was intended.

I personally encountered such a situation recently when my twelve-year-old indoor/outdoor cat developed a troublesome area on his face between his ear and eye. Thinking it was probably an age-related skin cancer, I thought, “I need to take him to the vet.” By Thanksgiving, it was an open, bubbly, raw-and-scabby patch that was definitely growing. After tests, cultures, repeated visits, and antibiotic injections, the vet’s diagnosis? Infection secondary to flea bites. FLEAS?? We’ve NEVER had fleas!!

The vet treated my cat with a complimentary dose of between-the-shoulders flea drops and offered to sell me a six-months’ supply. I declined, remembering that fipronil, the active ingredient in many of the once-a-month flea applications, is toxic to bees. When I got home, I checked all my cat-and-dog supplies and found a package of Vectra flea treatment (a different active ingredient), given to me by a neighbor after his dog was no longer on this planet. Score! I’ll just use the Vectra on my cat! NOT!

Our Master Gardener training reinforced that “the label is the law” concerning pesticide usage. I read the label. The Vectra package clearly states, “FOR DOGS 56 to 95 lbs.” On the back of the package is a clear warning in large red print: “DO NOT USE ON CATS – MAY BE FATAL”!

Fipronil, the active ingredient in Frontline and other flea protection products, is a broad-spectrum insecticide in the phenylpyrazole family. It targets a specific central nervous system access channel in insects that does not exist in mammals. Fipronil is effective on many urban pests and is used by pest applicators in a formulation known as Termidor to treat ants, cockroaches, termites and FLEAS. Because of its high toxicity to insects and low toxicity to humans, it is the go-to method for keeping our pets and the perimeters of our homes pest-free (Note: fipronil toxicity in rabbits has been reported).

However, according to the California Department of Pesticide Regulation, the application of fipronil applied by licensed pest applicators increased from 300 kg in 2003 to 28,785 kg in 2011. According to sampling done by University of California researchers (<https://pubs.acs.org/doi/pdf/10.1021/bk-2014-1168.ch001>), fipronil could be found in almost all samples of urban water runoff in Southern California and Sacramento.

The University of California Integrated Pest Management program, <http://ipm.ucanr.edu/TOOLS/PNAI/pnaishow.php?id=34>, lists toxicity information about fipronil and other pesticides. Although not listed for long-term toxicity to humans, fipronil is HIGHLY TOXIC to bees (apply only in the evening after bees are finished foraging) and is also HIGHLY TOXIC to aquatic wildlife. In fact, concerns over environmental impacts from fipronil surface water contamination have resulted in new labels

(<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=27509>) for the pesticide. Applications are now prohibited between November 1st and February 28th during California's rainy season.

And Vectra, the flea treatment that I thought might be a good alternative? The first-listed ingredient in Vectra is dinotefuran, a neonicotinoid (“neo-nic”) insecticide that has been implicated in bee colony collapse disorder. Permethrin, the largest ingredient by percentage, is a synthetic insecticide that is highly toxic to fish and other aquatic creatures as well as being highly toxic to bees. In addition, the active ingredients in Vectra are so poisonous to cats that a cat is not supposed to be around a dog treated with Vectra until the treatment has dried for 24 hours (in case of accidental inter-pet grooming)!

These pesticides are easy to use. Just put a few drops on your pet's back and throw the applicator tube in the trash. The unintended consequence of our love affair with easy solutions is the inadvertent contamination of our surface waters, the disappearance of bees and the poisoning of water-dwelling animals and insects.

Integrated pest management (<http://ipm.ucanr.edu/index.html>) is the practice of using the least-invasive and least-poisonous method of pest control possible. So, what was the outcome for my cat? Consistent vacuuming, weekly laundering of pet bedding (hot water/hot drier) and a weekly cat rubdown with a dilute vinegar solution (the cat can groom without worries about long-term toxicity) have resulted in happy pets/happy owner.

Rebecca Miller-Cripps is a University of California Cooperative Extension Master Gardener of Tuolumne County who has decided to treat for pests in non-toxic ways.

UCCE Master Gardeners of Tuolumne and Calaveras Counties can answer home gardening questions. Call 209-533-5912 or go to: <http://ucanr.edu/survey/survey.cfm?surveynumber=7269> to fill out our easy-to-use problem questionnaire. Check out our website at: http://cecentralsierra.ucanr.edu/Master_Gardeners/ You can also find us on Facebook at <https://www.facebook.com/MasterGardenersTuolCo/>