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Sub: Comment on the 4-aminopyridine ("Avitrol") Draft Ecological Risk Assessment ("DERA")
Ref: EPA-HQ-OPP-2016-0030, Case 0015

Dear Elissa Reaves and colleagues,

On behalf of Wild Animal Initiative, I submit this comment on the Environmental Protection Agency's ("EPA") Draft Ecological Risk Assessment ("DERA") for 4-Aminopyridine ("Avitrol").

Wild Animal Initiative is a nonprofit organization dedicated to understanding and improving the lives of wild animals. Extremely little is known about improving wild animals' subjective well-being ("welfare"). We seek to fill this gap by conducting and supporting rigorous scientific research into which nonhuman animals are sentient, what their lives are like in the wild, and how we can safely and sustainably improve their welfare. We appreciate the opportunity to provide this comment.

Wild Animal Initiative shares the concerns of other commenters, including the American Bird Conservancy, the Humane Society of the United States, and the American Society for the Prevention of Cruelty to Animals, who have urged the EPA to cancel re-registration of Avitrol because it causes unreasonable harm to both target and non-target animals who ingest it. Other commenters have adequately described these harms, and we echo their concerns. **We additionally emphasize that Avitrol may cause unreasonable harm to target animals who do not ingest it. Before the EPA can make a supportable decision to re-register Avitrol, it must consider this and other probable incidental effects.**

1. **EPA must consider all unreasonable adverse effects to the environment.**

   The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) allows the EPA to register a pesticide only when its intended function or common use will not generally cause "unreasonable adverse effects to the environment."[1]

[1] 7 USC 136a(c)(5).

Notably, FIFRA does not limit the scope of relevant environmental effects. An "unreasonable adverse effect on the environment" includes "**any** unreasonable risk to man or the environment"[2] (emphasis added), and the "environment" includes "water, air, land, and **all plants and man and other animals** living therein"[3] (emphasis added).

Therefore, EPA cannot re-register a pesticide without considering its effects on the animals it is intended to target ("target animals") and any other animal it affects ("non-target animals"). It must also consider the effects that occur immediately because of direct contact with the pesticide ("immediate effects") and effects the pesticide causes at any other time or through any other causal mechanism ("incidental effects").

Of course, there are practical limitations to the extent of environmental effects EPA can consider. It may be difficult to predict all the possible incidental effects of a pesticide, and it may be difficult to measure known effects. However, EPA must use all available science to hypothesize potential incidental effects, estimate their likelihood of occurrence, and estimate their magnitude relative to other costs and benefits. And when the potential magnitude of indirect effects is non-negligible and existing evidence is insufficient, EPA must require the registrant to produce sufficient evidence.

2. Avitrol may cause starvation.

Part of Avitrol's intended function is to induce seizures in birds who consume the bait.[4] Other commenters have rightly described these neurological harms as unreasonable adverse effects to the environment.

But the purpose of inducing such seizures is to "frighten the flock and cause it to leave the site."[5] When functioning as intended, the majority of Avitrol's pesticidal effect comes from frightening birds away from a site rather than poisoning them. Therefore, any assessment of Avitrol's environmental risk would be grossly incomplete without considering the consequences of causing birds to leave a site.

One significant potential consequence is the starvation of target birds or their competitors. Consider the case of rock pigeons (*Columba livia*, "pigeons"), which are the first target species listed on Avitrol's

[2] 7 USC § 136(bb).
[3] 7 USC § 136(j).
[4] "Description: …The active ingredient in Avitrol baits, 4-aminopyridine, is an acute oral toxicant which acts on the central nervous system and the motor nervous system… Mode of action: Avitrol causes behaviors similar to an epileptic seizure." Avitrol, 2017. https://www.avitrol.com/pages/what-is-avitrol.html. Accessed January 1, 2021.
[5] "Mode of action: Avitrol causes behaviors similar to an epileptic seizure. Birds eating the treated bait will emit distress signals used by their species when they are frightened or injured. This may include flying erratically, vocalizing, trembling, dilation of the pupils and other symptoms. This will frighten the flock and cause it to leave the site." Avitrol, 2017. https://www.avitrol.com/pages/what-is-avitrol.html. Accessed January 1, 2021.

website.[6] Under typical urban conditions, pigeon populations are limited by food availability. It is especially common for nestlings and juveniles to die of starvation, because they struggle to compete with older pigeons for food.[7]

By causing pigeons to leave a site, Avitrol deprives pigeons of the food available at that site. If they don't go elsewhere, this effectively limits their total food supply, which will probably cause many of them to starve. If they do go elsewhere, they are likely to encounter flocks of other pigeons or other birds that rely on the same food sources. These flocks are likely to be limited by food availability for the same reasons the dislocated flocks were. The resulting competition will result in either the dislocated pigeons or their new competitors starving.

Therefore, despite Avitrol's claims of "humaneness," it is reasonable to expect that many or most of the urban pigeons frightened by Avitrol subsequently starve to death.[8]

3. **Starvation is an unreasonable adverse effect on the environment.**

Both target birds and their non-target competitors are parts of the environment. Starvation can take days or weeks to kill a bird. All available behavioral, neurological, and evolutionary evidence suggests that starvation is likely to be a painful process for birds.

Such protracted and intense suffering could only be justified in cases of extreme need. Because pigeons rarely represent an acute threat to human safety, and because there are more humane alternatives to control them, the benefits do not outweigh the costs. Therefore, the risk of starvation caused by dislocating birds constitutes an unreasonable adverse effect on the environment.

Conclusions and recommendations

By failing to account for starvation or other likely effects of frightening birds away from a site, the DERA for Avitrol is grossly incomplete. We urge the EPA to issue a revised risk assessment that fully accounts for the predictable harms caused by the typical use of Avitrol, including immediate and incidental harms to both target and non-target animals.

While our primary argument is that more research is needed to determine all the adverse consequences of Avitrol use, we believe that there is sufficient evidence to at least support several labeling changes of the

[6] "Bird: Pigeon / House sparrow / Starling / Grackle / Blackbird / Cowbird / Crow / Other bird." Avitrol, 2017. https://www.avitrol.com/pages/what-is-avitrol.html. Accessed January 1, 2021.
[7] Haag-Wackernagel, D. (1993). Street pigeons in Basel. *Nature*, *361*(6409), 200-200.
[8] "Humaneness: By using less bait, flocks can be frightened away from sites little [*sic*] or no mortality." Avitrol, 2017. https://www.avitrol.com/pages/what-is-avitrol.html. Accessed January 1, 2021. Note that this claim seems to refer only to the immediate effects of ingesting Avitrol, and does not seem to account for the effects of dislocation.

product, in order to improve regulatory oversight and reduce incidental and non-target effects. In particular, we recommend that:

1. Applicators be required to maintain a written log of quantities used and recovered, along with details like dilution rate, etc. This requirement would provide better enforcement of regulations.
2. Applicators be required to remain at the site for both non-elevated and elevated application locations to recover uneaten bait. This is necessary to reduce non-target impacts.
3. A maximum quantity per unit area should be specified. The lack of a maximum quantity per unit area of this product is disturbing given its broad spectrum of toxicity.

In addition, we recommend that applicators be required to post signage before application, to provide local citizens with the information they need to voice their concern about the harms to target and non-target animals. Local citizens are often surprised and disturbed by the effects of Avitrol use in their communities, and additional warning could reduce these issues.

Thank you for the opportunity to provide these comments on the Draft Ecological Risk Assessment for 4-aminopyridine. We appreciate your commitment to defending the interests of the voting public and other members of the environment to the fullest extent of your statutory responsibilities.

Sincerely,

Michelle Graham
Executive Director
Wild Animal Initiative