

C.H.I.R.P.

The Coqui Hawaiian Integration and Reeducation Project

P.O. Box 1880 Pahoia, Hawaii 96778
(808) 935-5563 email: syd@HawaiianCoqui.org

September 5, 2002

Dan Rosenblatt
USEPA
Pesticide Office
1200 Pennsylvania Ave. NW
Washington, DC 20460
Re: File 01-HI-03

Dear Mr. Rosenblatt:

Thank you again for your time on the phone today. I would like to reiterate our opposition to the proposed use of caffeine to control coqui and greenhouse frog populations in Hawaii. Please also see the enclosed material.

There are really two issues to be addressed: (A) whether or not there is an environmental and human health emergency in Hawaii as a result of the introduction of the coqui tree frogs; and (B) whether or not caffeine is the best way to control the frog numbers. Let me summarize our positions regarding each point.

(A) Is there an emergency in Hawaii because of the frogs?

- (1) All conclusions regarding the impact of the frogs on the Hawaiian environment are speculative. For example, it has been suggested that the frogs will eat too many insects, depriving endangered native insectivorous birds of food. However, there has been no study demonstrating a shortage of insect life in Hawaii. In fact, one of the greatest threats to endangered native birds in Hawaii is avian malaria, transmitted by mosquitoes. The frogs eat mosquitoes, including those carrying avian malaria, and could therefore aid the bird populations. They also could aid the human population by eating mosquitoes that carry dengue fever. Additionally, frogs are considered beneficial to agriculture since they eat insects. Several nurserymen have commented that they need fewer or no chemical insect control since having coqui frogs.
- (2) It has been suggested that there are no predators for the frogs in Hawaii. However it is then suggested that mongooses and rats will eat the frogs, which means that there are predators for the frogs. It is then suggested that the rat and mongoose populations will burgeon as a result of the additional food supply of frogs. However, this assumes that the population of these predators is currently held in check by a limited food supply, which has not been scientifically demonstrated. Common observation suggests that there is more than enough food already for these predators, and that the frogs will simply make their diet more diverse. This will not increase mongoose or rat numbers.
- (3) The sound of the frogs has been called a loud "shriek" and "shrill" and has been compared to a lawn mower and table saw by frog antagonists. It has been claimed that people cannot sleep with the sound of the frogs. However, many people enjoy the sound here in Hawaii. And people in Puerto Rico, where the coqui frogs are native and considered the national symbol, loved and revered by all, the

frogs' song helps people sleep. Puerto Ricans often take a recording of the song of the coquis on trips to allow them to sleep better. Therefore, the sound is a matter of taste. It may be an acquired taste, and some people in Hawaii may need to get used to it. But it is not intrinsically offensive. In fact, the sound of the coqui is a mating song, not an offensive weapon, as with the sound of geese. When people first hear the sound of the coqui, they usually think it is an exotic nighttime bird.

- (4) No medical studies have ever shown the sound of the coqui to be a health hazard, despite the distribution of the frogs throughout the Caribbean, Central America and in parts of Florida, Alabama, and Louisiana.
- (5) There are many species of invasive insect pests in Hawaii, and the frogs eat anything smaller than themselves, so long as it is not caustic, including other frogs. To argue that the frogs will throw out of balance the Hawaiian ecosystem is to assume that the Hawaiian ecosystem is in balance already, which is not the case. It could be argued that the Hawaiian environment is in need of insect predators, since it has so many alien insects. The gecko, which is also an alien species in Hawaii, does eat insects, and is appreciated here. The same appreciation may someday be shown to the frogs, as is the case in Puerto Rico.
- (6) Nowhere else in the world are tree frogs considered "pests". In fact, tree frogs are endangered in many places worldwide.
- (7) The plant industry is not limited in exporting plants from Hawaii as a result of the frogs. The only limitation has been on intra-island transport because of Department of Agriculture quarantine regulations. Therefore, the economic trouble has been caused by the DOA's policies. Interestingly, the DOA had to go through some legal maneuvers to consider the frogs a pest, since the frogs are not a pest for agriculture. They are not a threat to plants. Indeed, they are friendly to agriculture because they eat bugs.

In short, the arguments against the frogs are speculative, arguable, and non-scientific. They certainly do not support the contention that an emergency exists as a result of the presence of frogs in Hawaii.

(B) Is caffeine a good choice to control frogs?

- (1) According to the DOA and Department of Land and Natural Resources, the frogs cannot be eradicated on Hawaii or Maui. This means that the frogs are here to stay, and any measures to control their numbers will be ongoing. This means that caffeine will be continually used for frog control, requiring long-term studies as well as short-term studies to see the effect of caffeine on the environment, water supply, marine life, human health, bacterial populations, and other non-target species.
- (2) Caffeine residues are a known human health threat of unknown proportions. The persistence of residues can threaten endangered birds and bats, as well as humans and other non-target species. Indeed, the fact that the caffeine is nonspecific makes it a threat to everything in the environment.
- (3) The EPA has admitted that the effect of this use of caffeine on non-target species, including mammals and humans, is unknown and needs to be assessed as part of this experiment. Spraying has been allowed in residential, resort and park areas, which exposes humans to the spray and its residues. Humans would be allowed to enter sprayed areas after a 24-hour quarantine, and this period of time has never been proven safe by any study. Indeed, this is the first experiment with the application of concentrated caffeine as a pesticide. This constitutes human experimentation, and should require informed consent from the people applying the spray and from the public exposed to its residues, along with the oversight of an Institutional Review Board.
- (4) Caffeine is known to be a mutagen, carcinogen, and teratogen in bacteria, plants, animals, and human tissue culture, as well as in some epidemiological studies. It is known to easily percolate through the

ground and can enter the groundwater. It thus poses a threat to water supplies, the ocean reefs and marine life.

- (5) The EPA has identified several groups as particularly susceptible to caffeine poisoning, including pregnant women, toddlers, children on asthma or ADHD medication, and anyone with high blood pressure or other circulatory disease. This constitutes a large segment of the population. In addition, the already high consumption of caffeine in beverages, chocolate, and medications by many people makes the additional caffeine load from spray residues even more potentially toxic, since these people may already be near their caffeine toxicity threshold. Caffeinism is a real problem suffered by many. And there is no antidote for caffeine poisoning. (Ironically, one symptom of caffeinism is sleeplessness.)
- (6) The experimental data submitted about the skin permeability of caffeine was not performed with concentrations of caffeine at the high levels that will be used for this spraying. At these high concentrations, caffeine irritates the skin, increasing permeability. Additionally, as the caffeine residues dry, the caffeine could concentrate and crystals could reform. Such skin exposure has never before been tested, another reason why this is a form of human experimentation.
- (7) Exposure to caffeine residues may be through skin contact, or through hand to mouth contact. For example, a dog can run through an area that has been sprayed within the last 48 hours and get caffeine residues on its fur. A child can then pet the animal and get the caffeine on her hand. Later hand to mouth contact can cause the child to inadvertently consume the caffeine. (This ignores the effect of the caffeine on the dog. In addition to birds, caffeine is also toxic to dogs and cats.)
- (8) Proponents of frog eradication and caffeine use have stated that they need to apply some frog pesticide on a "landscape scale". EPA guidelines for this caffeine application forbids aerial spraying, and requires the spray to be applied on the ground. This makes caffeine inappropriate for landscape application. In addition, since the frogs hide in crevices between rocks and under logs, etc., the DOA has recommended the use of defoliants to clear the ground cover, making the frogs more exposed. This means that the caffeine may be used in conjunction with other poisons, and the synergistic action of caffeine with such poisons needs to be first studied. Caffeine is known to potentiate the activity of other drugs when given to humans and animals. This means that the effect of using, for example, Round Up with caffeine may be different than using either separately.
- (9) Finally, the overall effect of the caffeine spray on the frog population is unknown. The frogs may spread as a result of the disturbance of their immediate environment, particularly if defoliants are used. And unless the kill rate is 100%, including all eggs, it will fail to eliminate the frogs. The DOA and DLNR are already talking control and not eradication.

In summary, we do not believe that the frogs are invasive, i.e., are a threat to the environment, economy or human health. We do, however, believe that using caffeine to kill the frogs does pose a threat to human and environmental health.

We believe that the real agenda is to get caffeine approved as a pesticide, which will increase its market value and make profitable the production of genetically engineered caffeine. The University of Hawaii owns the patent for the caffeine gene, which it has exclusively licensed to Integrated Coffee Technologies, Inc. (See the enclosed article, "Frog War or Frog Fraud".)

There is thus a conflict of interest in the promotion of caffeine to kill the frogs. Indeed, we believe that the so-called "frog war" is really about getting caffeine approved as a pesticide at the public's expense, increasing the value of the patent and its license by increasing the market value for caffeine.

Hawaii has many invasive species, such as fire ants, mosquitoes, and stinging caterpillars. Nobody would

argue against attempts to control these pests. However, many people in Hawaii do not consider the frogs pests, and appreciate their nighttime song and the fact that the frogs eat invasive pests such as mosquitoes. Clearly, the alleged risks that the frogs pose are speculative, biased, and tainted with conflict of interest. On the other hand, caffeine poses real risks.

Those stating the frogs are a threat to Hawaii have the burden of proof for their allegations, and should offer proven safe methods for frog control. The public should not bear the expense and risk of developing caffeine as a pesticide, nor be forced to accept the biased, unscientific, and often hysterical statements of those invested in frog control.

We urge the EPA to not extend its Section 18 exemption for caffeine.

Thank you for your attention.

Sincerely,

Sydney Ross Singer, Medical Anthropologist
Director, CHIRP