American Journal of
Biomedical Science & Research

www.biomedgrid.com
ISSN: 2642-1747

Opinion

Should the use the Vampiricide Paste be Abolished in the Control of the Hematophagous Bat, the Main Transmitter of Rabies to Humans and Herbivores in Latin America?

Wilson Uieda[1]* and Fernanda Atanaena Gonçalves de Andrade[2]

[1]*Retired Professor, Universidade Estadual Paulista, Brazil*

[2]*Coordenação de Aquicultura, Instituto Federal de Educação, Brazil*

***Corresponding author:** Wilson Uieda, Retired Professor, Rua Benedito Franco de Camargo, 221, ap. 12, Vila São Judas Thadeu, 18606-780 Botucatu, SP, Brazil.

To Cite This Article: *Wilson Uieda, Fernanda Atanaena Gonçalves de A. Should the use the Vampiricide Paste be Abolished in the Control of the Hematophagous Bat, the Main Transmitter of Rabies to Humans and Herbivores in Latin America?. Am J Biomed Sci & Res 2020 - 10(4). AJBSR. MS.ID.001540.* DOI: 10.34297/AJBSR.2020.10.001540.

Received: October 05, 2020; **Published:** October 15, 2020

Opinion

The Latin American livestock industry is strongly affected by the presence of the hematophagous bat *Desmodus rotundus* (É. Geoffroy, 1810) due to its effect on meat and milk production and the transmission of rabies to herbivores, causing the loss of over 50 million dollars a year [1]. Furthermore, this species has also an impact on public health because of spoliations and rabies transmission to humans [2]. Since the 1970's, many Latin American countries implemented programs for the control of rabies transmitted by *D. rotundus* to herbivores and humans [3]. However, in these 50 years, the programs have had a small contribution to reducing the negative effects of rabies [3]. From the beginning, the population control of *D. rotundus* in these programs was carried out with an extensive use of vampiricide paste by two ways: Use around the wound on bovines e equines and topical application on bats [4,5].

The vampiricide paste is available for purchase in Brazil and is to be used by cattlemen whenever they observe recent bites on their livestock. This procedure will eliminate only the individuals that are spoliating the cattle. Another recommended and main use for the paste is its application on the back of the common hematophagous bats. This procedure should only be used by properly trained technicians of the official control teams because it involves the capture and handling of bats. Its efficiency has been criticized by technicians themselves, by conservationists, and by wildlife protection organizations. Technicians report that only a small number of *D. rotundus* is eliminated by the paste, causing a scanty impact on the control of bovine rabies outbreaks. Conservationists question the indiscriminate killing of bats by the excessive and uncontrolled use of paste in *D. rotundus* shelters. The carcasses of the bats eliminated by this method would accumulate inside the shelters and might be ingested by wild carnivore mammals. Moreover, several different non-hematophagous species share the shelters with *D. rotundus* [6] and can also be affected by this method. Nevertheless, a more precise and reliable analysis requires more studies [3]. Recently, a group of technicians and researchers from various countries [3] analyzed the current problems and challenges of rabies transmitted by *D. rotundus* to humans and herbivores in Latin America. It is necessary to find and study new alternatives for controlling this important disease for the most Latin American countries. In this communication, we would like to express our opinion that currently there are no alternatives capable of short-term efficient results in the control of hematophagous bat populations. However, we take this opportunity to propose a change in the way of viewing this problem, which can also justify alterations on the application of vampiricide paste.

The increase in *D. rotundus* populations has been pointed out as one of the causes of human and bovine rabies outbreaks [3]. If that is true, the teams responsible for the control of *D. rotundus* have been late in taking action. In truth, they should have captured the

specimens responsible for the attacks before the rabies outbreak takes place. This way, these bats would be captured when they are most abundant in the region. How will we realize this? With permanent surveillance, preventive education and cooperation between technicians and cattlemen, we can be alerted to the time when we should execute the control with the use of vampiricide paste applied on the bats. While technicians are working in reducing the population of *D. rotundus*, cattlemen vaccinate their animals to prevent the emergence of rabies. We know that this work will be a great challenge to control this disease in Latin America. It is neither practical nor efficient to wait for the first case of rabies in the herd to trigger the response of the *D. rotundus* control team.

The signal for starting the population control cannot be a cow dying of rabies, since its death means that the rabies is already settled in the region. It is a very late sign: the bat will die by rabies a few days after transmitting the disease to the cow, which will then go through an incubation period of 30 to 45 days before dying too. Thus, when the bat control team arrives at the rabies outbreak region, they will probably capture and apply the paste on bats that have survived and/or were not reached by the disease. Eliminating these individuals might pose a problem in the future because the space vacated by them could be occupied by bats migrating from other regions and with unknown immunological status. Thereby, it is recommendable that the rabies prevention strategy for herbivores should be executed before this disease is settled in the region. That is, the *D. rotundus* population control should be executed when the excess bats is "the problem", to avoid the rabies becoming "the problem". We suggest here that the paste on *Desmodus rotundus* should be used only during attack outbreaks and not during rabies outbreaks. A similar strategy should be used by health technicians (community health workers and nurses) to control rabies in humans. Community health workers would inform their superior whenever they meet cases of spoliation of humans by *D. rotundus*.

People who are bitten would be immediately vaccinated and, when there is an increase in these attacks, official teams should be triggered because it reflects a growth in *Desmodus* population and/or a change in the economic activities in the area [2]. Rabies is a zoonosis that is almost always fatal but that can be prevented, when the control reaches it before it starts affecting people and animals. This permanent surveillance work could be capable of keeping the *D. rotundus* populations under control, preferably in low numbers. It might even return to being considered a rare species, the same way it is in preserved neotropical forests or with only minor alterations [7].

References

1. Lee DN, Papes M, Van Den Bussche RA (2012) Present and potential future distribution of common *vampire bats* in the Americas and the associated risk to cattle. PLoS One 7(8): 72466.
2. Schneider MC, Romijn PC, Uieda W, Tamayo H, Silva DF, et al. (2009) Rabies transmitted by *vampire bats* to humans: an emerging zoonotic disease in Latin America? Pan American Journal of Public Health 25(3): 260-269.
3. Benavides JA, Walderrama W, Recuenco S, Uieda W, Suzán G, et al. (2020) Defining new pathways to manage the ongoing emergence of bat rabies in Latin America. Viruses 12: 1-13.
4. Crespo RF, Ibarra VF, Donaciana-de-Anda L (1976) Vampirinid II. Un producto utilizable em três métodos para el combate del murciélago hematófago. Tecnica Pecuária p. 67-75.
5. Piccinini RS, Freitas CEA, Souza JCP (1985) Vampiricidas de uso tópico em animais domésticos e em morcegos hematófagos. Pesquisa Veterinária Brasileira 5(3): 97-101.
6. Guimarães MM, Pereira RL (2014) Morcegos cavernícolas do Brasil: novos registros e desafios para conservação. Revista Brasileira de Espeleologia 2(4): 1-33.
7. Brown EB (1994) Vampiro: the vampire bat in fact and fantasy. High-Lonesome Books, Silver City, New Mexico, pp. 148.