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Editorial: One Health in action: neglected tropical diseases, vector and pest management

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Editorial on the Research Topic

One Health in action: neglected tropical diseases, vector and pest management

One Health is a master key that uses a multidisciplinary science approach to sustainably optimize the balance between humans, animals, and the ecosystem. Epidemiological surveys, identification, diagnosis, control of neglected tropical diseases, and vector and pest management should be addressed to achieve the goals of a One Health approach.

Epidemiological surveys have a crucial role in the recognition of newly emerging diseases among animals and humans, with an emphasis on their geographical distribution. [Orlando et al.](#) reported for the first time the serological prevalence of leptospirosis in horses in Ecuador. The results revealed a hundred percent seropositive cases from the collected samples with multiple *leptospira* species. This record of subclinical leptospiral infection in horses confirms the significance of a One Health approach in the management of such zoonotic diseases.

Moreover, [Marcondes et al.](#) emphasized the role of the cross-sectional study when they analyzed the use of the “R” language in the management and control of lymphatic filariasis, an endemic mosquito-borne disease, in Olinda, Brazil. The authors discussed the varying conception levels and different management strategies of the disease in endemic areas and showed the benefits of consistent follow-ups by health teams, although they also identified shortcomings in the control of lymphatic filariasis morbidity.

In addition, [Noh et al.](#) revealed the impact of a One Health approach by identifying multiple erythrocytes adhesins antigens, namely Mlp3, Am779, Msp3, and Omp13, from the screening of a phage display library expressing 66 *A. marginale* parasite proteins. Those antigens may be considered as future candidates in the development of an *Anaplasma* vaccine to control bovine anaplasmosis. Bovine anaplasmosis is a tick-borne disease which, despite having a significant impact on the cattle industry and ecosystem, has been neglected in research so far. The risk of using antibiotics and acaricides in the prevention of ticks and tick-borne diseases has significant drawbacks, affecting human and animal health and contaminating the environment.

With the ultimate aim to be eco-friendly, safe world, and use a One Health approach, Guerrero et al. reviewed the feasibility of using *Bacillus thuringiensis* (*B. thuringiensis*) as a promising biological control candidate for pest crops and vector-borne and neglected infectious diseases. *B. thuringiensis* harbor plasmids that encode for the expression of parasporal crystalline proteins. These Crystalline (Cry) and Cytolytic (Cyt) genes have toxic traits against class Insecta, including Lepidopterans, Coleopterans, and Dipterans. In this review, the authors highlighted the possibility of using Cry and Cyt genes as bioinsecticide candidates.

In this Research Topic, we highlighted the One Health approach as important in the surveillance and identification of neglected tropical vector-borne diseases. In addition, we discussed the impact of utilizing biological control agents as eco-friendly candidates to maintain balance among humans, animals, and the environment.

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Conflict of interest

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