**Detection and characterization of *Wolbachia* associated with parasites of veterinary importance -** Chapaval L.[1*], Oliveira M.C.S.[1*], Brito L.G.[2], Zafalon L.F.[1]

*1 - Embrapa Pecuária Sudeste, São Carlos, SP - Brazil*
*2 - Embrapa Rondônia. Porto Velho, RO - Brazil*
*poster presenter: lea@cppse.embrapa.br

Most efforts to study and sustainable use of biodiversity has been focused on macro-organisms (mammals, birds, fish and plants). Recent estimated data indicates that microorganisms and invertebrates represent almost 90% of the species of the biosphere and play a fundamental role in the functioning of ecosystems. Regarding the effects of biodiversity on the ability of bacterial hosts, studies indicate relationships that include parasitism, commensalism and mutualism. Among the bacteria of biological importance, *Wolbachia* is a species of Proteobacteria is considered an obligate intracellular parasite and capable of infecting a wide range of arthropods, including at least 65% of insect species as well as filarial nematodes. Among the mechanisms of action of *Wolbachia* in the host are: the partenogêneese, feminization of male deaths and cytoplasmic incompatibility. Since bacteria have different strategies for the different species parasites that affect livestock, strains present in each of these hosts also have different characteristics and capable of study, since the identification of the biological relationship *Wolbachia* - parasite may be an opportunity development of new parasite control strategies that minimize the use of pesticides in livestock production systems, thus ensuring the supply of safer food for domestic consumption, as well as minimize the establishment of sanitary barriers by the presence of certain contaminants in foodstuffs of pesticides animal.

Key-words: MLST, host-parasite relationship, *Wolbachia*

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# Detection and characterization of *Wolbachia* associated with parasites of veterinary importance

**L. Chapaval[1], M.C.S Oliveira[1], L.G. Brito[2], L.F. Zafalon[1]**

**[1]EMBRAPA Pecuária Sudeste, São Carlos, SP, lea@cppse.embrapa.br**
**[2]EMBRAPA Rondônia**

## INTRODUCTION

Most efforts to study and sustainable use of biodiversity has been focused on macro-organisms (mammals, birds, fish and plants). Recent estimated data indicates that microorganisms and invertebrates represent almost 90% of the species of the biosphere and play a fundamental role in the functioning of ecosystems. Regarding the effects of biodiversity on the ability of bacterial hosts, studies indicate relationships that include parasitism, commensalism and mutualism. Among the bacteria of biological importance, *Wolbachia* is a species of _-proteobacterium is considered an obligate intracellular parasite and capable of infecting a wide range of arthropods, including at least 65% of insect species as well as filarial nematodes. Among the mechanisms of action of *Wolbachia* in the host are: the partenogêneese, feminization of male deaths and cytoplasmic incompatibility. Since bacteria have different strategies for the different species parasites that affect livestock, strains present in each of these hosts also have different characteristics and capable of study, since the identification of the biological relationship *Wolbachia* - parasite may be an opportunity development of new parasite control strategies that minimize the use of pesticides in livestock production systems, thus ensuring the supply of safer food for domestic consumption, as well as minimize the establishment of sanitary barriers by the presence of certain contaminants in foodstuffs of pesticides animal.

## METHODS

This research aims to report the presence of *Wolbachia* infections in natural populations of *Haematobia irritans, Riphicephalus (B.) micropulus, Cochliomyia hominivorax, Haemonchus contortus, Haemonchus placei.* The characterization of these *Wolbachia* strains will based on the use of 16S rRNA, *wsp* and MLST gene markers.

The horn fly *Haematobia irritans*

*Riphicephalus (B.) micropulus*

New World Screwworm (*Cochliomyia hominivorax*)

*Haemonchus contortus*

*Haemonchus placei*

## POTENCIAL IMPACTS

The identification of bacterial strains antagonistic biological species of parasites that may be used in biological control of species can contribute to better management of the bases used in the pharmacological control of parasitic populations of interest, contributing to the decreased use of parasiticides and bases, avoiding the establishment and retention of parasite populations resistant to the used chemical bases, contributing to increase the safety of all animal foods offered to the population.

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