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Abstract

CONTROL OF TICKS: PAST TO PRESENT SCENARIO

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Abstract:

Livestock sector is considered a secure and economical way in helping poverty alleviation and uplifting nutritional status of masses. However, parasitic species have been found to be a

continuous hazard towards animal productivity especially in the scenario of changing climate. Among these, ecto-parasites especially ticks (Acari: Ixodidae) are known to cause lowered

productivity through direct and indirect effects. Ticks are parasites of livestock as well as humans and serve as vectors to many diseases including babesiosis, theileriosis and anaplasmosis, Crimean Congo Haemorrhagic Fever, Q fever, that are transmitted during hematophagous feeding. Currently chemical acaricides are used for controlling tick and TBDs but there continued use may cause environmental contamination and resistance. Due to recent advances in molecular biology techniques, recombinant DNA technology, vector genome sequencing lead to interest in genetic based control of vectors. Tick host interaction is the main point for transmission of pathogens. Many proteins present in tick saliva enhance the feeding ability of ticks and in turn cause increase in pathogen transmission. Silencing of these proteins producing genes by using RNAi is helpful for tick control through disturbance in their oviposition, feeding, digestive ability, water balance, fertility, immunity, vitellogenesis, decreased weight gain and increase mortality. Along that Metal stress may play an important role for control of ticks by effecting the normal functioning of tick metabolic processes. Knock down of selected genes with the help of ds RNA injection will help in identification of new novel protein candidates for sustainable control of ticks. Some biological methods are also used for control of ticks including pests, entomopathogenic fungi (EPF) and entomopathogenic nematodes (EPN) all of these methods have some advantages and disadvantages

Biography:

My area of interest are epidemiology and control of arthropod borne parasitic diseases and currently working on ticks' control, I have worked as research associate in a USAID-CAS-AFS funding project titled: Metagenomics of Mosquito Vectors and Abundance of Mosquito-borne pathogens in different agr0-geoclimatic areas of Punjab, Pakistan. Now I am working as Research fellow in a Pakistan Agriculture Research Council project titled: Epidemiology, Advance Diagnosis and Biological Control Model of Ticks and Tick-borne Diseases in Ruminants at Two Ecologies of Pakistan

Publication of speakers:

1. Molecular screening of piroplasm from ticks collected from Sialkot, Gujranwala and Gujarat districts of Punjab, Pakistan
2. Identification of Ticks through DNA Barcoding

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