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## Type of paper: Research soft tick (*Argas persicus*) Infestation at government layer farms of Pothwar region of Punjab, Pakistan

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#### Abstract

*Argas persicus* is a soft tick which infesting poultry globally. The present study was conducted in three districts of Pothwar region of Punjab Pakistan to determine the prevalence/distribution of *A. persicus* in white leghorn layer during 2010-2011 at government layer farms. Simple random sampling technique was applied for the collection of soft ticks. A total of 12772 ticks were collected from white leghorn layers. All the ticks were identified as *Argas persicus*. Higher prevalence of *Argas persicus* was observed in summer while lowest in the winter season. Government layer farms needs improvement in hygienic conditions to acquired better growth and production from white leg horn layer.

**Keywords:** *Argas persicus*, Soft tick, White Leg Layer, Pothwar Region, Pakistan

#### 1. Introduction

Poultry industry is among the leading industries of Pakistan. This fast growing industry support country economy by providing jobs. Share of poultry industry in country GDP is 1.2% [5]. Ticks are ecto-parasite of wide range of animals also infest poultry around the globe. To this end, among ticks, *Argas persicus* which is soft tick has been reported as common poultry tick across the world from Africa [20], Asia [3, 4], Europe and America [1].

Ticks affect poultry directly by sucking blood instigating anemia, weight loss, and reduced egg production [11]. Reported that 18.57 mL of blood has been sucked by individual tick in a day. In addition, bite of *A. persicus* may cause motor paralysis or volunteer muscle paralysis [2]. Further, lowering resistance thus triggers mortality in case of heavy infestation [8, 10, 18], or indirectly play role as vector of transmitting several pathogens that causing deadly diseases in poultry. Ticks inflict adverse effect on poultry health and welfare around the globe, thus consider as major threat for poultry production. Pakistan being a tropical country provides optimum climatic conditions which favour tick growth and multiplication [7]. There are several reports have been published and revealed that Pakistan has great fauna of both hard and soft ticks. However, these published reports concentrates on significance of hard tick which infested livestock species across the country as compared to soft tick [10, 11, 22]. On the other hand studies regarding soft tick infestation in poultry are scanty [10, 22] at country level. Therefore, the present study aimed to screened government poultry farm located in potohar region of Punjab Pakistan for the frequency distribution of soft tick infestation in poultry.

#### 2. Materials and Methods

##### 2.1 Study Area

The present study was conducted during the year 2010-11 in three districts of Punjab including; Rawalpindi, Jhelum, and Attock known as Potohar region of Pakistan because of potohari language spoken by the native peoples predominantly and its physical features.

##### 2.2 Screening of Poultry Farms and Collection and Identification of Ticks

Layer farms located in three selected districts were randomly visited in a month during study period of one year for collection of ticks. Ticks were collected from farms sites including walls, pillars, nests, cracks and crevices. All these sites were searched for finding of all ticks stages including nymph, larvae and adult. Likewise, layers present at the farms at the time of visit were randomly captured and searched for the presence of ticks on their wings, legs, neck,



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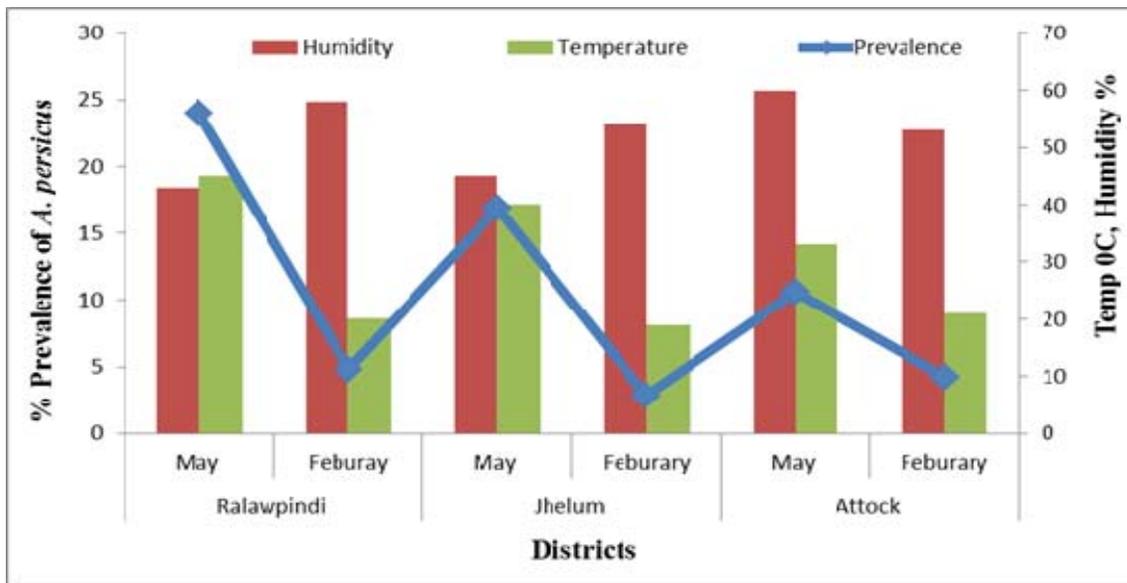
**Fig 1:** Ticks colony at laying nest of layers;



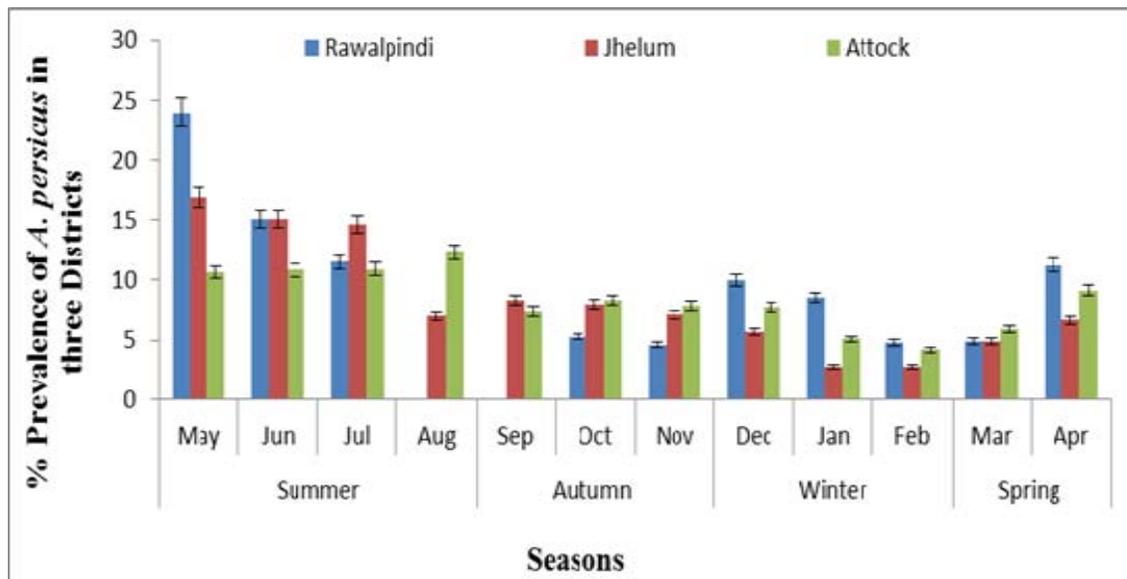
**Fig 2.** Soft tick (*A. persicus*) at farms walls.



**Fig 3:** *Argas persicus* larvae attached with feathers of white leg horn layers.



**Fig 4a:** Association of Metrological Factors (Temperature & Humidity) with prevalence of Poultry soft tick *A. persicus* in three districts of powther region of Punjab Pakistan.



**Fig 4b:** Seasonal prevalence of *Argas persicus* in three selected districts of powther region of Punjab Pakistan.

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