



## First studies on *Giardia duodenalis* in the water buffalo

L. Rinaldi, V. Musella, R.U. Condoleo, G. Saralli, G. Bruni, M.P. Maurelli & G. Cringoli

To cite this article: L. Rinaldi, V. Musella, R.U. Condoleo, G. Saralli, G. Bruni, M.P. Maurelli & G. Cringoli (2007) First studies on *Giardia duodenalis* in the water buffalo, Italian Journal of Animal Science, 6:sup2, 923-925, DOI: [10.4081/ijas.2007.s2.923](https://doi.org/10.4081/ijas.2007.s2.923)

To link to this article: <https://doi.org/10.4081/ijas.2007.s2.923>



Copyright 2007 Taylor and Francis Group  
LLC



Published online: 15 Mar 2016.



Submit your article to this journal [↗](#)



Article views: 48



View related articles [↗](#)

# Lice (*Haematopinus tuberculatus*) in water buffalo farms from central Italy

V. Veneziano<sup>1</sup>, M. Santaniello<sup>1</sup>, S. Carbone<sup>1</sup>, S. Pennacchio<sup>1</sup>,  
M.E. Morgoglione<sup>1</sup>, M. Schioppi<sup>1</sup>, R. Condoleo<sup>2</sup>, G. Cringoli<sup>1</sup>

<sup>1</sup> Dipartimento di Patologia e Sanità Animale, Università degli Studi di Napoli "Federico II",  
CREMOPAR Regione Campania, Italy

<sup>2</sup> Istituto Zooprofilattico Sperimentale del Lazio e della Toscana, Sezione di Latina, Italy

*Corresponding author:* G. Cringoli. Dipartimento di Patologia e Sanità Animale, Università degli Studi di Napoli "Federico II", CREMOPAR Regione Campania, Napoli, Italy - Tel. 0039812536283 - Fax: 0039812536282 - Email: cringoli@unina.it

**ABSTRACT:** The aim of the present study was to obtain information about the presence and distribution of the suckling louse *Haematopinus tuberculatus* in water buffalo farms in central Italy. The survey was carried out on 127 farms (epidemiological units), selected using a grid approach within a Geographical Information System, followed by proportional allocation. In each farm 6 buffaloes were examined in order to detect the louse presence. Parasitological examinations were performed on each buffalo at *predilection sites*. A total of 762 water buffaloes were examined. *H. tuberculatus* was found in the 11.0% (14/127) of the farms and in the 4.5% (34/762) of the animals. The presence *H. tuberculatus* should be routinely considered because it is a cause of serious health, production and economic damages in intensive breeding buffaloes.

**Key words:** Parasites, *Haematopinus tuberculatus*, Lice.

**INTRODUCTION** - The sucking louse *Haematopinus tuberculatus* (Burmeister, 1839) Lucas 1852, is a harmful ectoparasite found on water buffalo (*Bubalus bubalis*). *Haematopinus tuberculatus* has been reported on water buffalo in Asia, Africa, Australia, and South America (Meleney and Kim, 1974; Munoz Cobenas *et al.*, 1987). In Europe it has been reported in Macedonia (Piotrowski, 1974), and recently in England (McFarland and Coles, 2002) and Italy (Veneziano *et al.*, 2003). Louse infestation often leads to skin irritation, anemia, anorexia, restlessness and reduced productivity (Butler, 1985; Veneziano *et al.*, 2003). Until now, epidemiological surveys aimed to evaluate the presence and distribution of *H. tuberculatus* in water buffaloes have not been performed. The aim of the present study was to obtain information about the presence and distribution of this louse in water buffalo farms in the Latium region of central Italy.

**MATERIAL AND METHODS** - The survey was carried out in 20 contiguous municipalities (1,250 km<sup>2</sup> surface area) located in the provinces of Latina and Frosinone (Latium region). A geographical information system (GIS) was constructed utilizing as data-layers the topographic base map and the digital aerial photographs of the study area, as well as the geo-referenced points of all the buffalo farms. The survey was performed on 127 farms (epidemiological units), selected using a grid approach followed by proportional allocation.

For this purpose, a grid representing quadrants of 5 x 5 km was overlaid on the study area within the GIS. The study area was divided in equal quadrants, and the number of farms sampled in each quadrant was proportional to the total number of study population in that quadrant (Cringoli *et al.*, 2005; Rinaldi *et al.*, 2006). In each farm 6 buffaloes were examined in order to study the louse presence (total number = 762 water buffaloes). Parasitological examinations were performed on each buffalo at the following *predilection sites*: cheeks, ears, neck and dewlap, withers, forelegs, backhindlegs, tailhead and perineum. Louse specimens were examined under optical and dissection microscopes to detect morphometric characters. Species determination was based on the keys proposed by Chaudhuri and Kumar (1961) and Meleney and Kim (1974).

**RESULTS AND CONCLUSIONS** - *H. tuberculatus* was found in 14 out of the 127 farms examined (11.0%; 95% Confidence Interval = 6.4-18.1%) and in 34 out of the 762 animals (4.5%; 95% CI = 3.2-6.2%). In the past decades, Italian buffalo farms have adopted intensive breeding techniques, replacing grazing with a constant supply of concentrated and/or stored forages. This has led to a considerable reduction in the incidence of the helminths infections. Intensive breeding implies a high density of animals. This favours the diffusion of ectoparasites, in particular those with a life cycle entirely on their hosts, such as *H. tuberculatus*. This sucking louse can produce a clear symptomatology. Chaudhry (1978) has reported that erythematous itching areas are often seen on the skin of infested buffaloes. In addition, these animals are troubled and restless, they scratch themselves nervously, often causing skin lesions as eczema and crusts. These lesions can cause anorexia, cachexia, and reduced productivity. *H. tuberculatus* infestation observed in this study did not cause clinical signs. However, such infestations could elicit negative effects on milk production of lactating animals and on the weight gain of growing animals.

**REFERENCES** - Butler, J.F., 1985. Lice affecting livestock. In: Williams, R.E., Hall, R.D., Broce, A.B., Scholl, P.J. (Eds.), *Livestock Entomology*. Wiley, New York, pp. 101–127. Chaudhry, N.I., 1978. Common disease problems in buffalo calves. *Pakistan Journal of Science*, 30: 120-126. Chaudhuri, R.P., Kumar, P., 1961. The life history and habits of the buffalo louse, *Haematopinus tuberculatus* (Burmeister) Lucas. *Indian Journal of Veterinary Science*, 31: 275-287. Cringoli, G., Rinaldi, L., Veneziano, V., Musella, V., 2005. Disease mapping and risk assessment in veterinary parasitology: some case studies. *Parassitologia*, 47: 9-25. McFarland, J., Coles, G.C., 2002. *Haematopinus tuberculatus* on water buffalo in England. *Veterinary Record*, 150: 616. Meleney, W.P., Kim, K.C., 1974. A comparative study of cattle-infesting *Haematopinus*, with redescription of *H. quadripertusus* Fahrenholz, 1919 (Anoplura: Haematopinidae). *Journal of Parasitology*, 60: 507-522. Munoz Cobenas, M.E., Barci, D., Popovici, A., 1987. Ectoparasites found in a herd of buffaloes (*Bubalus bubalis*) in Corrientes, Argentina. *Veterinaria Argentina*, 4: 724-727. Piotrowski, F., 1974. Research on the biting and sucking lice (Mallophaga Ischnocera and Anoplura) of domestic animals in Macedonia. *Makedonski Veterinaren Pregled*, 3: 33-44. Rinaldi, L., Biggeri, A., Cringoli, G., 2006. Geographical information systems and remote sensing in veterinary disease mapping. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources*, 1: 1-16. Veneziano, V., Rinaldi, L., Giannetto, S., Cringoli, G., 2003. The first record of *Haematopinus tuberculatus* on *Bubalus bubalis* (water buffalo) in Italy. *Bubalus bubalis*, 9: 69-75.