

A COPROLOGICAL SURVEY ON THE PRINCIPAL ENDOPARASITIC INFECTIONS IN HORSES IN ITALY

L. Pacifico, DVM¹, **F. Buono**, DVM¹, B. Neola, DVM¹, D. Piantedosi, DVM, PhD¹,
V. Caracciolo Di Brienza, DVM, PhD², A. M. Brignolo, DVM, PhD⁴, C. Roncoroni, DVM, PhD³,
A. Fagiolo, DVM³, V. Veneziano, DVM, PhD¹

¹ Department of Veterinary Medicine and Animal Productions,
University of Naples Federico II, Napoli, Italia

² Medico Veterinario Ippiatra Libero Professionista, Napoli, Italia

³ Istituto Zooprofilattico Sperimentale Lazio e Toscana, Roma, Italia

⁴ Medico Veterinario Ippiatra Libero Professionista, Asti, Italia

Work type: **Original Research**

Topic: **Internal Medicine**

Purpose of the work. Several studies on intestinal parasites of horses are focused on large and small strongyles. Intestinal strongyles have a primary importance in equine medicine, for their worldwide distribution and impact on health and performance of infected animals (Heidi and Wade, 2009). Horses, however, are hosts of a large range of internal parasite that may be also of clinical importance such as roundworms (*Parascaris* sp.), pinworms (*Oxyuris equi*) and tapeworms (*Anoplocephala* spp.). The diagnosis in vivo of intestinal parasites in animals relies on the examination of faeces for the detection of their eggs (MAFF 1986). Large-scale epidemiological studies on equine parasites are extremely poor; the aim of the present survey was to assess the prevalence and intensity of intestinal parasites in horse stables in Italy.

Materials and used methods. A total of 111 horse farms, involving 1,030 horses, was tested from November 2014 to April 2016. Two hundred forty-seven horses (24.0%) were male, 217 (21.1%) geldings, 518 (50.3%) females, while the gender of 48 animals (4.7%) was not recorded. The mean age was 8.8 years (from 2 month to 30 years). Most of the faecal samples were collected directly from the rectum, but some samples were collected from fresh deposits in the bedding. Samples were stored in plastic bags identified with a registration number, and stored in a thermal box filled with ice during transport to the laboratory of equine parasitology. Individual faecal egg counts (FECs) were performed using a modified McMaster technique with a detection limit of 10 egg per gram (EPG), using a Sheather's saturated sugar solution (specific gravity of 1.250) (Reinemeyer and Nielsen 2013). In addition a centrifugation/flotation technique (Proudman test) (Proudman and Edwards, 1992) and a sedimentation technique were used for the diagnosis of *Anoplocephalidae* and *Fasciola hepatica* eggs, respectively.

Outcomes. Intestinal parasites were found in 88 of 111 farms (79.3%). Strongyles (small and large) were the most common parasitic species found with a prevalence of 61.6% (634 horses). The average value of EPG was 310.3 ± 611.52 (min 0 - max 5,110). 38.5% of horses (n° 396) were not infected and infection intensity was lower than the horse cut-off selective for therapy of 200 EPG in 30.1% of animal (n° 310). The EPG values were 200-500 in 11.4%, 501-1,000 in 9.8%, and high > 1,000 in 10.2% of horses, respectively. Eggs of *Parascaris* sp. was recovered from 86 (8.3%) horses; because protective immunity does not begin to take effect until 6 months of age onwards (Clayton, 1986), the majority of animals (52%) infected with ascarids are foals and yearlings. However, older horses can harbour patent ascarid infections at low level (Hinney et al., 2011). Other parasites were: *O. equi* (3.2%), *Anoplocephala* spp. (3.8%) and *Eimeria leuckarti* (0.1%). No positivity was detected for *Fasciola hepatica*.

Conclusions. *This study represents one of the few large-scale survey conducted in Italy and added data to the parasitological scenario of horse population. The high prevalence of intestinal parasites in Italian horses requires a responsible use of anthelmintic drugs. Almost the two-thirds of the analyzed horses (706/1030 - 68.5%) in the present study did not require anthelmintic treatment. In equine clinical practice it is necessary to determine the value of EPG using a quali-quantitative coprological method, and the anthelmintic treatments should be made only after a proper diagnosis. Therefore it is crucial that veterinary practitioners play an active and lead role in planning and monitoring effective and appropriate worm control programs for horses using the FECs as a means of parasite surveillance.*

Bibliography

1. Clayton H.M. (1986). Ascarids. *Veterinary Clinics of North America-Equine Practice*. 2: 313-328.
2. Heidi A.B. and Wade T.N. (2009). Drug resistance in equine parasites: an emerging global problem. *Journal of Equine Veterinary Science*. 29 (5): 285-295.
3. Hinney B., Wirtherle N.C., Kyule M., Miethe N., Zessin K.H., Clausen P.H. (2011) Prevalence of helminths in horses in the state of Brandenburg, Germany. *Parasitology Reserch*. 108:1083-1091.
4. MAFF (1986) *Manual of Veterinary Parasitological Laboratory Techniques*. Reference Book 418. 3rd edn. London, HMSO.
5. Proudman C.J. and Edwards G.B. (1992). Validation of a centrifugation/flotation technique for the diagnosis of equine cestodiasis. *The Veterinary Record*. 138: 71-72.
6. Reinemeyer, C.R., Nielsen, M.K., 2013. Diagnostic techniques for equine parasitism. In: *Handbook of Equine Parasite Control*. Wiley-Blackwell, Oxford, UK, pp. 103-127.

Corresponding Address

Dott. Francesco Buono - II Traversa Privata T. De Amicis, 27 - Scala A - 80145 Napoli (NA), Italia
Tel. 0817707324 - Cell. 3405165950 - E-mail: francesco.buono1985@libero.it