Cryptosporidium spp. DETECTION USING THE ZIEHL-NEELSEN MODIFIED STAIN AND IMMUNOFLUORESCENCE STAIN IN SHEEP FLOCKS IN THE STATE OF MEXICO.

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Cryptosporidium spp. was discovered by Tizzer in 1907[1] and causes intense diahrrea in animals and man in immunosupressed individuals[2]. The infections caused by this parasite have been reported in 170 species in 50 different countries[2,3]. Nevertheless, it has not been reported in Mexico. There are several ways of detecting it. This research was made to demonstrate that the modified Ziehl-Neelsen staining is as effective in identifying the parasite in lambs from different municipalities in the State of Mexico than the fluorescence stain for screening. 267 samples were taken in Xalatlaco, 79 in Zinacantepec, 114 in San Felipe del Progreso and 18 in Jiquipilco making a total of 478 faeces samples taken from lambs. Smears were made after the samples were processed (centrifuged and preserved in either 2.5% $K_2Cr_2O_7$ or 2% formaldehyde depending on the stain) and stained with the modified Ziehl-Neelsen stain as well as with flourescence specific staining (Waterborne, Inc., U.S.A.). A positive control was used per smear. The results for Z-N were: Xalatlaco 99/267 positive animals (37%), Zinacantapec 12/79 positive animals (15.3%), San Felipe del Progreso 20/114 positive animals (17.5%) and Jiquipilco 0/18 positive animals (0%). The results for fluorescence staining were: Xalatlaco 119/267 positive animals (44.6%), Zinacantapec 20/79 positive animals (25.3%), San Felipe del Progreso 33/114 positive animals (28.9%) and Jiquipilco 3/18 positive animals (16.7%). It is concluded that the modified Z-N staining can be used for screening in developing countries, although some cases can be unoticed because of the higher sensitivity and sensibility of the immunofluorescence stain. It should also be considered that the parasite is a risk factor for both animal and public health, which causes economic losses and death in HIV positive patients.

REFERENCES

1. O'Donoghue, P.J. Cryptosporidium and Cryptosporidiosis in man and animals. *International Journal for Parasitology*. 1995; **25** (2): 139-195.
2. Fayer, R. and Ungar, B.L.P. *Cryptosporidium spp.* and cryptosporidiosis. *Microbiological Reviews.* 1986; **50**: 458-483.
3. Current, W.L. & Garcia, L.S. Cryptosporidiosis. *Clinical Microbiology Reviews.* 1991; **4**: 325-358.