

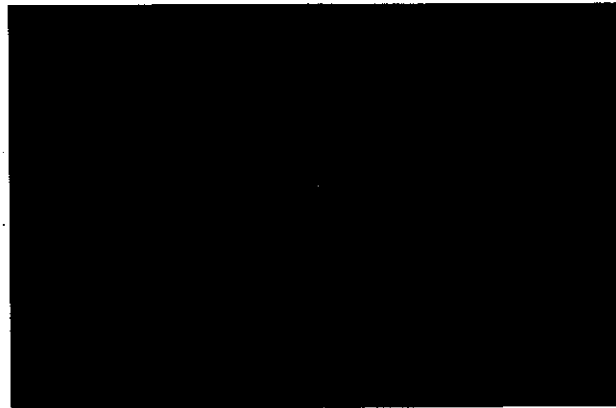


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Field efficacy study of alphacypermethrin pour-on against natural *Haematopinus tuberculatus* infestation on buffalo (*Bubalus bubalis*) and influence of the treatment on milk production.

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AIM: *Haematopinus tuberculatus*, is a specific louse of buffalo (*Bubalus bubalis*), being the principal ectoparasite which attacks this species (Bastianetto E et al, 2002, 1st Buffalo Symposium of Americas, 357-359), louse infestation often leads to skin irritation, anemia, anorexia, restlessness and loss of body condition. The itch caused by *H. tuberculatus* is responsible for the low milk and meat productivity (Bastianetto and Leite, 2005, Rev Bras Reprod Anim, 29: 118-121). The infestation needs to be controlled, particularly if the general condition of animals is affected. On buffalo, several formulations marketed for cattle have been tested in field trials against *H. tuberculatus*, mainly macrocyclic lactones such as ivermectin, avermectin, doramectin and eprinomectin (Veneziano V et al, 2004, *Bubalus bubalis*, 2: 56-65). Alphacypermethrin (ACYP) is a synthetic pyrethroid insecticide effective against a wide range of pests of many crops and is used for the control of various veterinary insects, including lice. In Italy ACPY is marketed as a pour-on formulation for use in cattle, with zero milk-withdrawal time. Therefore, the aim of this study was to assess the efficacy and safety of ACPY pour-on against *H. tuberculatus* on naturally infested buffaloes and the influence of the treatment on milk production.

MATERIALS AND METHODS: The study was performed on 56 adult buffaloes, naturally infested by *H. tuberculatus*, at 86.8±60.9 days in milk (DIM) bred in a commercial farm in Southern Italy. One day before the treatment (day -1) all animals were divided into two Groups (28 buffaloes in each Group), according to DIM, total milk production recorded in the previous year, milk production in the last seven days and louse counts. On day 0, ACPY-group received ACPY pour-on formulation at the manufacturer's recommended dose rate (Renegade™, 1.5%, Pfizer Animal Health). Control (C-Group) received pour-on saline solution. The parasitological investigations were performed on 20 buffaloes (10 in each Group). Louse counts were performed on days -1, 7, 14, 21, 28, 35, 42, 49 and 56 at eight predilection sites on the skin of each buffalo, all according to the procedures described in the WAAVP guidelines for evaluating the efficacy of ectoparasiticides in ruminants (Holdsworth PA et al, 2006, *Vet Parasitol*, 136: 45-54). Milk

production was daily recorded by software connected with an automatized milking machine throughout the experimental period. Statistical analysis of the data was performed by ANOVA for repeated measures.

RESULTS: On day -1 an average of 77.9 ±46 and 66.7 ±33 lice per buffalo were counted in ACPY and C groups, respectively. During the trial, ACPY was well tolerated by all the animals since there were no adverse reactions following the treatment. ACPY was completely effective (100%) at day 7, highly effective (99.7%) at day 14, and completely effective (100%) from day 21 until the end of study, day 56 after treatment. Total milk production throughout the experimental period was not significantly different between Groups, although buffaloes in ACPY-Group showed an increase of about 0.2 kg/day compared to C-group (10.4±1.2 vs 10.2±1.1, respectively). A significantly higher ($P<0.05$) milk yield was recorded in ACPY Group from day 14 to day 55 of the trial, when the animals produced nearly 0.3 kg/day of milk more than those in C-Group (11.1±1.7 vs 10.8±1.4, respectively). A further statistical analysis was carried out dividing the buffaloes according to their DIM. In this case, in the animals that were at less than 75 DIM at the beginning of the trial, a higher ($P<0.01$) milk yield was recorded from day 14 to day 42 of the trial in ACPY Group (12.2±1.4 vs. 11.7±1.4, ACPY and C-Groups, respectively). No differences were found among buffaloes with more than 75 DIM.

CONCLUSIONS: The results of this field trial suggest that ACPY is effective, safe and user-friendly compound suitable for the treatment of buffaloes with natural louse infestation. Furthermore, the higher milk production recorded, particularly in animals at the beginning of lactation, justifies the cost of the treatment.