

Investigation of the ovicidal efficacy of Dimet 20 and InfectoPedicul: Higher efficacy than comparator products against young and more mature lice eggs

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Aim of the investigation

Testing the in-vitro efficacy of various test solutions against the eggs of clothes lice (*Pediculus humanus humanus*) compared with demineralised water.

Materials and methods

The following products were tested for their ovicidal efficacy:

- Dimet[®] 20 (dimeticone and dodecanol)
- EtoPril[®] (4% dimeticone) – available as Hedrin[®] in Austria
- InfectoPedicul[®] (permethrin)
- Goldgeist[®] forte (pyrethrum)
- Demineralised water

The tests were performed blinded in 2010 by a renowned institute for insect studies in Germany, i.e. without knowledge of the allocation of the test products, on clothes lice eggs at various stages of maturity (age: 0–1 day or 4–5 days). Twenty-nine to 31 eggs adhering to hairs were examined per tested product. The tests were conducted on the basis of Oliveira *et al.* (2007) and Sonnberg *et al.* (2008). The eggs were completely incubated with each product for three minutes. After an exposure time of 20 minutes, the eggs were dipped into a shampoo solution for one minute and swirled about. They were then rinsed with tap water for one minute. To establish ovicidal efficacy, the eggs, which, by Day 15, had either not hatched at all or only hatched incompletely, were counted.

Results

For comparison of the ovicidal efficacy, Fig. 1 and Fig. 2 show the fractions of non-hatched larvae. The ovicidal efficacy of INFECTOPEDICUL[®] was 97% for young eggs and 100% for more mature eggs, while for DIMET[®] 20, the corresponding figure was 87% for young eggs and 93% for more mature eggs. With Goldgeist[®] forte, an ovicidal efficacy of 53% and 16% respectively was achieved and with EtoPril[®] / Hedrin[®], 33% and 20% respectively. The comparison with water showed ovicidal efficacy of 10% and 17% respectively. The difference between INFECTOPEDICUL[®] and DIMET[®] 20 and the comparator products is statistically significant for both young and more mature eggs.

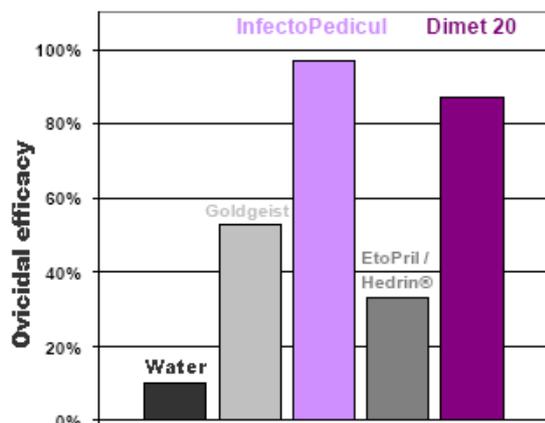


Fig. 1: Ovicidal efficacy against young lice eggs (0–1 day) (n=29 or 30)

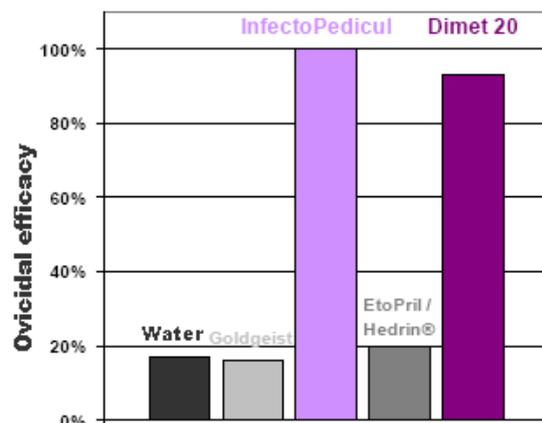


Fig. 2: Ovicidal efficacy against more mature lice eggs (4–5 days) (n=30 or 31).

Summary

The products INFECTOPEDICUL[®] and DIMET[®] 20 have high ovicidal efficacy against young and more mature lice eggs. They demonstrate statistically significant superiority to the comparator products in both young and more mature eggs.

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Oliveira, FAS; Speare, R; Heukelbach, J; (2007): High in vitro efficacy of Nyda L., a pediculicide containing dimethicone, Journal of the European Academy of Dermatology and Venereology 21: 1325-1329.

Sonnberg, S; Oliveira, FAS; Melo, ILA; Soares, MMM; Becher, H; Heukelbach, J; (2008): Ovizide Wirksamkeit von over-the-counter Kopflausprodukten (Ovicidal efficacy of over-the-counter head lice products). Monatsschrift Kinderheilkunde, volume 156, suppl. 1, p. 82-83