

VARIATION IN OVICIDAL RESPONSE OF THE HUMAN BODY LOUSE TO A PYRETHRIN-BASED SHAMPOO

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The human body louse (*Pediculus humanus*) is a convenient surrogate for screening pediculicidal shampoos and creams intended for its subspecific relative, the head louse (*P. h. capitis*). The head louse is unsuited to routine lab rearing as it requires constant access to a human host for blood feeding. The body louse tolerates daily blood meals and the ICR strain has been adapted to a rabbit host. Mortalities among the eggs of the ICR strain used in contract screening of head louse shampoos under standardized testing conditions, have shown unexplained variation.

To investigate this variation, eggs were tested against Pronto, a pyrethrin-based pediculicidal shampoo with equal numbers of controls. The ASTM method E1517-93 was used to test batches of 10 replicates of 30 eggs, Monday through Friday, for three weeks. The method involves immersing eggs in the shampoo for 10 minutes, washing and rinsing in water for one minute each. The eggs are then incubated until all hatching has ceased.

Mortalities were highest on Mondays (98.8–100% for treated and 17.7–34.4% for control eggs) and declined successively until Thursday (85.0–92.7% for treated) or Friday (4.0–7.8% for controls). This decline was significant for treated and control eggs. For treated eggs there were significant declines as summarized by : Mon Tue Wed Thur Fri, where the days sharing an underline are not significantly different. Similarly, for the control eggs significant declines were: Mon Tue Wed Thur Fri. Mortality probably declined because of the Saturday fast from blood feeding to which our strain is subjected (the lice are blood fed daily from Sunday–Friday). This fasting apparently results in reduced egg viability over several days. There were no significant differences between the same days on different weeks for the controls. Variation in mortality was greater among the control eggs than treated eggs.

The downward trend of mortality suggests that testing should be restricted to Thursdays and Fridays or to blood feeding 7 days a week.