

**The Pediculicidal Activity of a Device from Novomic Ltd. on the
Head Louse (*Pediculus humanus capitis*)**

Report prepared by:

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For: NOVOMIC Ltd.

Dec. 7, 2016

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OBJECTIVE(S)

To learn the effect of exposing adults lice to acetic acid with one of 2 different perfumes (# 0056 and # 9709).

INTRODUCTION

Applying acetic acid on human scalps for controlling lice may be rejected by the population because of the smell of the acetic acid. Adding perfumes may partially or fully hide the acetic acid smell. The described experiment checks the possible effect of adding perfume to the acid on the anti lice activity of acetic acid. Two experiments were performed each with 10% of a different perfume (# 9709 or #0056).

MATERIALS & METHODS

Lice:

Collected in Ranana ca 4h before starting experiment.

Live and vital adult lice were selected under stereoscope and transferred into each of 4 Petry dishes (9 cm. diameter). In each of the 2 experiments 1 dish served as “experiment” dish and the other as no acetic acid and no perfume control dish. The “experiment” dishes were transferred (open) into a plastic bag where it was exposed to vapors of acetic acid with 1 of the 2 perfumes tested. After exposure the dish was left open for a few min. The previously exposed dish and the non exposed (control) dish were transferred into an incubator (30⁰C and 78%RH in the dark). At set times post exposure lice mortality was recorded.

Producing and exposing to acetic acid vapors with perfume:

Special capsules were designed in which the acetic acid gas was produced (Novomic patent). Each capsule contained: 8 gr of ceramic beads and in a separate compartment 1.5 ml glacial acetic acid. The capsule was connected to a pump and to a 2 liter bag. The divider between the compartments in the capsule was broken seconds before use as to let the 2 compounds to mix. Each capsule was thoroughly sealed and the pump was started pushing air via capsule, for 75 Sec. into the deflated bag containing open Petry dish with lice. The bags with the lice, acetic acid and perfume was left closed for 5 min.

The capsules were weighed before and after use.

Treatments protocols:

Two separate protocols were applied each on 2 Petri dish:

Perfume 9709

1. No treatment dish (control).
2. Single treatment – exposing adult lice for 5 min. to acetic acid with 10% Perfume # 9709.

Perfume 0056

1. No treatment dish (control).
2. Single treatment – exposing adult lice for 5 min. to acetic acid with 10% Perfume # 0056.

RESULTS

TABLE 1 – Mortality (%) of adult lice after exposing to acetic acid with 10% perfume.

			Treatment		Mortality (%) recorded time post exposure			
Perfume tested (#) (10%)	Dish number	Lice\dish	Exposure to acid	Acetic acid + Perfume \ cap (gr.)	2 min.	1h	10h	24
0056	1 (control)	50	--	--	0	0	32	98
	2	50	+	?	100	98	94	98
9709	3 (control)	30	--	--	0	2	76	100
	4	30	+	0.29	100	100	100	100

CONCLUSIONS

- Needs more repetitions.
- It seems that the two perfume tested has hardly any effect on the anti lice activity of acetic acid.

RECOMMENDATIONS

- To perform 1 -2 more repetitions.
- To try to reduce mortality in the control dishes after 12h in the incubator.
- In order to be able to compare tests performed in different time one need to record mortality in the same time intervals post exposure. Thus, it is recommended to start the varicose experiments in about the same hour of the day.
- Ten hours post exposure on the one hand the degree of success of the tested compounds to kill lice is clear and on the other hand the mortality in the control group is quite high. Thus we may consider to stop recording results of tests 8 – 10 hours post exposure.

All the presented tests were performed by Dr. M. SAMISH.

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Dr. M. Smaish

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