

DUST MITE CONTROLLER

Electronic Device against Mite Allergy

Scientific Documentation

LABORATORY TEST

The attached documentation is concerning the tests performed by Prof. L. Suss and Prof. G. Lozzia at the University of Milan – Italy.

The authors have tested the device in laboratory, in order to evaluate the product's ability to denaturate Der p1, the major allergen of *Dermatophagoides pteronyssinus* mite. It is known that *Dermatophagoides* are responsible for allergic disorders such as rhinitis and asthma.

The Investigators have dispensed the media into vials. These have been kept at selected temperature and humidity rates for a 4 month period, under the consistent action of the electronic device.

The test results show an interesting decrease of active allergen presence (20% reduction at 4th month), due to the device's action.

Test of the denaturant activity of the allergens of equipments creators of ultrasounds SA05/B, version fed by network, and ZPC02/B, version with battery

A test, in order to judge the denaturant activity of the allergenic proteins produced by the dust mite *Dermatophagoides pteronyssinus* due to ultrasound creator equipments SA05/B and ZPC02/B, has been carried out.

The action has been carried out by means of a laboratory test on an exhausted ground coming from a farm of *D. pteronyssinus*.

Methodology

The test has been carried out by using the product named SA05/B, a ultrasound creator with emission at 40.000 Hertz with a power of 300mA functioning at 14Volt tension provided with a transformer and fed by the domestic electric network, to be used in houses. The radiated substratum is made of exhausted substratum coming from a laboratory farm of the house dust mite *Dermatophagoides pteronyssinus* diluted in a ratio 1:19 with inert substances (sterile sand) to stimulate the dust of the houses. Exhausted ground has been used to avoid the presence of food residuals, which could have favoured the colonization of mites or other arthropods. The obtained substratum has been put in test tubes, each containing 250mg, of which 12.5 mg of exhausted ground and 237.5 mg. of sand. 16 test tubes have been positioned in a thermo stated cell at 25 C and 85% of UR, over them at the distance of 30 cm, the equipment has been placed. All this was placed in a cage, which was placed in a tray containing Vaseline to avoid any infestation by arthropods.

SA05/B was connected to the electric network and kept on functioning non-stop for 4 months. The samples for the control of the content of the allergen Der p I have been drawn after 2 weeks, 1, 2 and 4 months from the beginning of the test. Other 4 test tubes have been used as non-treated witness.

The company Alk Abello has carried out the determination of the allergen content.

Achieved Results

The achieved results are stated in the present list:

Denaturant activity of the equipment sa05/b on the allergen Der p I.

Thesis	Repetitions Der p I in μ /g	Average data	Reduction %
Witness	26.69-62.00-41.60-38.60	42.2225	-
14 days	63.07-78.71-25.53-27.28	48.6475	0.00
1 month	58.93-82.65-11.48-28.12	45.2950	0.00
2 months	6.91-27.21-14.16-18.92	16.8000	60.21
4 months	30.00-37.30-30.39-33.00	32.6950	22.58

Conclusions

The product SA05/B, even if there is a certain data heterogeneity, reveals a certain denaturant activity at the charge of the allergen D er 0 1 of *Dermatophagoides pteronyssinus*, which starts to be evident after about 2 months from the beginning of the test and it allows a reduction of about 20% after 4 months.

- Cod. SA05/ equal to our portable electronic device against mites.
- Cod. ZPC02/B equal to our fixed electronic device against mites.