

# NEW ORGANIC COMPOUNDS FOR THE CONTROL OF THE HOUSE DUST MITE, *DERMATOPHAGOIDES PTERONYSSINUS* (ACARI: PYROGLYPHIDAE)

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House dust mites are one of the main reasons for allergies which makes an efficient control necessary. The commonly used compounds are pyrethrins, pyrethroids but also compounds as benzyl benzoate. Furthermore the acaricidal effects of some solvents (e.g. propylenglycol, diethylenglycolmonobutylether), alcohols (e.g. octanol) or organic acids (e.g. octanoic acid) or essential oils are known. Aim of the present study was to examine further simple organic compounds for acaricidal efficacy. A plastic dish (7 cm Ø, 3 cm high) is treated with glue on the upper inner wall and a piece of mattress fabric with the same diameter is put on the floor. On this fabric a spatula point of a mixture of mites (*Dermatophagoides pteronyssinus*) and food (powdered Tetramin®) is applied. Then the dish is placed on a turned petri dish in a plastic container (20 x 20 cm, height 8 cm), which contains a saturated solution of table salt, and is closed with a lid. After one day 0,4 ml of the test compound solved in ethanol is pipetted on the fabric. Illumination is daylight, the temperature 24-26 °C, the relative humidity about 75 % inside the container. At different times the state of the mites is observed under a stereo microscope in comparison with an untreated control (3= many mites, 0 = no mites). If necessary (control, ineffective compounds) new food is added. Each trial consists of three replicates and at the end of the test the sum of the estimations is noted.

Compound (10 % in Ethanol)	Evaluation after					
	1 d	3 d	7 d	14 d	21 d	28 d
Adipinic Acid	3,0	9,0	9,0	9,0	9,0	9,0
Benzyl Acetate	0	0	1,5	2,0	8,0	9,0
Benzyl Benzoate (known)	0	0	0	0	0	0
n-Butanol	1,0	2,5	7,0	9,0	9,0	9,0
Diethyl Succinate	0	0	0	0	0	0
Citric Acid Triethylester	9,0	9,0	9,0	9,0	9,0	9,0
Diethylglycolmonobutylether (known)	0	0	0	0	0	0
Diethyl Phthalate	0	0	0	0	0	0
Dimethyl Adipate	0	0	0	0	0	0
Formic Acid, Ammonium Salt	9,0	6,0	0	0	0	0
Glycerinformale	2,5	1,5	0	0	0	0
Mentholglycerinacetale	1,5	0	0	0	0	0
Menthylactate	0	0	0	0	0	0
n-Methylpyrrolidone	0	0	0	0	0	0
Phthalic Acid Diethylester	1,5	0	0	0	0	0
Propylenglycol (known)	1,5	0	1,0	1,0	1,0	1,5
Ethanol (control)	9,0	9,0	9,0	9,0	9,0	9,0

0 = no mites, 9 = many mites (estimated)

There exist many compounds with good efficacy against house dust mites which will be examined further with regard e.g. to long duration efficacy or formulation properties.