

## THE SUITABILITY OF PERACETIC ACID FOR DISINFECTION OF LARGE ANIMAL HOUSES USING COLD-MIST AND FOAM SPRAYING TECHNIQUES

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Various deficiencies in disinfection may induce that chains of infection are not interrupted from one stock to the next. The goal of the present work arose from the efforts to displace usual methods in terms of the dangerous substance regulation and the TRGS 540. Cold-mist and foam spraying techniques with peracetic acid are seen as alternatives and were tested and evaluated on their suitability for disinfection in large animal houses.

In large chicken houses with ground and cage keeping samples were taken from representative subsurfaces and places in the animal house from moistened surfaces using moist swabs before and after disinfection in order to determine the number of germs; the mean germ reduction factors were determined for each experimental condition. An cold-mist generator with large throwing range (Turbostar) and a foam generator (SG 3/10), which had been specially developed by the Kesla Hygiene AG for the Wofasteril<sup>®</sup> – Kombiverfahren, were applied. An amount of 10 ml/m<sup>3</sup> room capacity of 5% buffered peracetic acid (Wofasteril<sup>®</sup> – Kombiverfahren) were used in the cold-mist technique. In the foaming technique 350 – 470 ml use dilution /m<sup>2</sup> application concentrations of 0.8 – 1.7% Wofasteril<sup>®</sup> E 400 were used.

The cold-mist technique allows the spatial dispersion of peracetic acid, and large rooms get filled fast by the fine mist. In the practical experiments employed considerable results could be achieved even with difficult elements of equipment (Tab.1).

By the possibility of visual inspection, securing of the amount of disinfection dilution reaching the location that shall be effected and longer effecting times disinfection by foam shows crucial advantages for the success of disinfection at a high surface efficiency per time unit. The success of disinfection is proved by high germ reduction factors (Tab.1) and the incidence of 85.7 – 89.3% negative microbial samples in the swab technique.

Taking into account the constructional, device-related, economic and infection hygienic situation for the disinfection of large animal houses peracetic acid is suitable and under this assumption an alternative for active disinfection ingredients underlying the TRGS 540.

Table 1: Disinfection with buffered peracetic acid (average GKZ/cm<sup>2</sup>)

	Cold-mist technique		
		before	after
	n	x	x
Feeding-through	20	4450	82
Cage/ Nest	20	322	*50
Drinking-throughs	10	957700	37540
Ventilator	5	152520	*50
Ground	10	4961210	13580

	Foaming 0.8% Wofasteril <sup>®</sup> E 400		
		before	after
	n	x	x
Feeding-through	n.u.		
Cage/ Nest	10	1000840	*50
Drinking-throughs	5	1712000	1040
Ventilator	5	306000	*50
Ground	15	2660327	1223

	Foaming 1.7% Wofasteril <sup>®</sup> E 400		
		before	after
	n	x	x
Feeding-through	n.u.		
Cage/ Nest	10	56100	*5
Drinking-throughs	5	6511000	504
Ventilator	5	90440	6
Ground	15	106746000	6

\* below the detection limit