# 7 Summary

**Comparison of pour upon method and wet-dabbing method to judge the disinfecting qualities of building materials.**

To evaluate the possibilites of use of building materials in the veterinary and quarantine area of a zoo, twelve materials have been tested for their cleaning and desinfecting qualities. Namely: Relatex, floor tile, wall tile, chipboard, Trespa Athlon, Betoplan, aluminum sheet metal, PVC-board, acrylic glass, artificial rock, glass, concrete corner block sealed with Propalit, and concrete corner block without Propalit-sealing.

The materials were contaminated with a specified amount of *Serratia marcescens* germs and afterwards cleaned with cold water only, then with a sponge, warm water and cleansing agent and, finally, disinfected with disinfecting agent. After pre-experiments to determine the best methods for surface-germ-count, in the main experiment the wet-dabbing method and the Direct Surface Agar Planting-method (DSAP-method) were used in comparison.

The main experiment was divided in four parts.

First, the recovery rates of the DSAP and wet-dabbing methods were determined for the different materials.

In a second experiment, the surfaces were cleaned under running water.

Thirdly, the surfaces were cleaned with a sponge, cleansing agent and warm water.

And last, the surfaces were disinfected with Lysovet PA.

After cleaning and disinfecting the amount of *Serratia marcescens* germs was determined.

The germ count and the cleaning and disinfecting ability was influenced by the type of surface, so the building materials were grouped according to their surface structure.

Materials with smooth and sealed surfaces were easy to clean und disinfect. Their surface structure prevented the access of liquid into the material's interior. Thus, the germs could not evade cleaning and disinfection. These materials are well suited for use in veterinary and quarantine areas.

Materials with a porous surface conducted the larger part of the germs directly to the inner structures. The recovery rates with both methods of surface-germ-count ranged between 37% and 0,37%. The efficiency of cleaning and disinfecting can only be evaluated by destructive methods of germ-count. These materials should be avoided in veterinary and quarantine stations.

Materials with uneven and sealed surfaces could be differenciated further. Relatex and floor tile showed only minor unevenness. The test-results for both materials are similar to those with smooth and sealed surfaces.

Artificial rock showed extreme unevenness and furrows. Compared to the other materials, cleaning with water as well as cleaning with a sponge and cleansing agent did not remove as many germs. Disinfection, on the other hand, produced results similar to those materials with smooth and sealed surfaces. Thus, floor tile and Relatex are suited für use in the veterinary and quaratine section, whereas aritficial rock should not be used in this area.

Furthermore, concrete corner block was sealed with Propalit. The glaze prevented the penetration of germs and the corner block could be grouped in the group of materials with smooth and sealed surfaces. The results for corner block sealed with Propalit are comparable to those of other materials in this group: smooth and sealed surfaces.

The two methods employed to determine the surface-germ-count can be used in evaluations of efficiency of cleaning and disinfecting. On artificial rock, the DSAP-method achieved significantly higher colony-counts than the wet-dabbing method. Generally, the DSAP-method is the more sensitive procedure and can thus be used as a reference method (ANGELOTTI et al., 1957).