RESEARCHES REGARDING RESISTANCE OF
A.PLEUROPNEUMONIAE AT ANTISEPTIC AND DISINFECTANT
SUBSTANCES ACTION

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Abstract. In the paper are presented data concerning A. pleuropneumoniae resistance on antiseptic and disinfectant substances. A. pleuropneumoniae presented a high sensibility on antiseptics and disinfectants action, these inactivated almost instantaneous the bacteria. The longer survival of A. pleuropneumoniae was finding on chloramines (5 minutes) and on sodium hydroxide action A. pleuropneumoniae are inactivated in less than one minute.

INTRODUCTION

Pig pleuropneumonia is causing by Actinobacillus pleuropneumoniae (3, 4, 6). The bacteria is considered an obligate parasite of the porcine respiratory tract (1, 2). A.pleuropneumoniae is destroyed by the most disinfectants. Resistance of high temperature is reduced (1, 5).

MATERIAL AND METHOD

A. pleuropneumoniae strains were obtained by culture from pigs’ lungs with pleuropneumoniae lesions.

A. pleuropneumoniae resistance at antiseptic and disinfectant substances were studied comparatively with resistance of two standardize bacterial strains knowing their moderate or high resistance – strain Wood of staphylococcus and Mycobacterium fortuitum.

The antiseptic substances were:
- Betadine (Iod povidone 10%)
- Rivanol (Etacridin lactat 1‰)

The disinfectant substances that are used to test the resistance of A.pleuropneumoniae were:
- Cationic detergent (Quaternar salts of ammonium 0,1%)
- Germostop L (Clorhexidină 1:39)
- Decontaminol (Glutaraldehyde 0,5%)
- Chloramin B (Chlor 1,5%)
- Caustic soda (NaOH 2%)  
- Formol (Formaldehyde 4%)
- Virkon S (Peroxidic compounds 1:200 for A. pleuropneumoniae and 1:100 for staphylococcus strains and Mycobacterium fortuitum)

For each product was used the dilution prescribed by producer (antiseptic or disinfectant action). The substance was dilute at work concentration in sterile distilled water and put it in sterile tube numbered 1 to 9 for each studied strains.
The strains of *A. pleuropneumoniae* were put in sterile tubes with physiological serum until moderate turbidity was obtained.

There were added two drops from bacterial suspension in all tubes with antiseptic and disinfectant substances. Then the tubes with antiseptics were keeping at 37°C and the tubes with disinfectants at room temperature. The exposing at different temperature was choice to optimize the action of these substances.

After the action of antiseptics and disinfectants *A. pleuropneumoniae* strains were recovered on blood agar 5% supplemented with NAD 0.1% at different intervals: 15 min., 30 min., 60 min., 6 hours and 24 hours.

The staphylococcus strain was recovered on nutritive agar and *Mycobacterium fortuitum* on blood agar 10%.

**RESULTS AND DISCUSSIONS**

The obtained results after exposure these bacterial strains were presented in table 1.

Analyze the data presented in table 1 it was establish that *A. pleuropneumoniae* was very sensible at antiseptics and disinfectants action. All substances tested have a drastic, almost instantaneous action of destroy on *A. pleuropneumoniae*. Is remark a survival on 5 minutes at chloramine, after this time bacteria could not be recovered. On sodium hydroxide action *A. pleuropneumoniae* resists less than one minute.

These results are in conformity with literature in which is specify that *A. pleuropneumoniae* is destroyed by the most disinfectant, especial by chloramines derivates even the presence of organic material (4, 6, 7). We mentioned that in our researches were tested cultures on solid media.

**CONCLUSIONS**

The obtained results in our study allow formulating the next conclusion:

*A. pleuropneumoniae* presented a high sensibility on antiseptics and disinfectants action, these inactivated almost instantaneous the bacteria. The longer survival of *A. pleuropneumoniae* was finding on chloramines (5 minutes) and on sodium hydroxide action *A. pleuropneumoniae* are inactivated in less than one minute.

**BIBLIOGRAPHY**

Table 1

Results obtained at antiseptics and disinfectants action

<table>
<thead>
<tr>
<th>Commercial product (work concentration)</th>
<th>Active substance</th>
<th>A. pleuropneumoniae</th>
<th>Staphylococcus Wood</th>
<th>Mycobacterium fortuitum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1'</td>
<td>5'</td>
<td>15'</td>
</tr>
<tr>
<td>Betadine (10%)</td>
<td>Iod povidone</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rivanol (1%)</td>
<td>Etacridin lactat</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cationic detergent (0,1%)</td>
<td>Quaternar salts of ammonium</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Germostop (1:39)</td>
<td>Clorhexidină</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Decontaminol (0,5%)</td>
<td>Glutaraldehyde</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Chloramin B (1,5%)</td>
<td>Chlor</td>
<td>+</td>
<td>±</td>
<td>-</td>
</tr>
<tr>
<td>Caustic soda (2%)</td>
<td>NaOH</td>
<td>±</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Formol (4%)</td>
<td>Formaldehyde</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Virkon S (1:200 și 1:100)</td>
<td>Peroxidic compounds</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend: - absence of colonies after antiseptics and disinfectants action; + presence of colonies after antiseptics and disinfectants action.

The dishes were examined after 24 hours for A. pleuropneumoniae and staphylococcus strain and after 48 and 72 hours for Mycobacterium fortuitum

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