ANTIMICROBIAL USE AT HERD LEVEL IN THE DANISH BROILER SECTOR

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**Background**

Antimicrobial use in poultry is a global concern as antimicrobial use in animals contributes to antimicrobial resistance with potential impact on animal, environmental and public health. Antimicrobial use in poultry in Denmark is relatively low compared to the use for other animal species, i.e. only 1-2% of the total antimicrobial use in kg active compound for animals in Denmark in 2015-2021. Knowledge about the distribution of antimicrobial use between poultry herds and herd types is lacking.

**Study design**

Register data study
- Data on antimicrobials prescribed for poultry herds from 2015-2019 from the VetStat database; a national public database that has collected sales data on medical products prescribed for animals in Denmark since 2000.
- To quantify antimicrobial use at herd level, data about herd sizes from the Danish Zoonoses database.

**Data analysis**

Antimicrobial use was quantified as Animal Daily Doses (ADD) per 1,000 birds per herd-month.

**Study population**

All active Danish conventional (n=238) and organic broiler herds (n=32), and conventional broiler breeder (n=47) and broiler breeder pullet herds (n=22) in 2015-2019.

**Results**

Antimicrobials were used in 969 of 17,927 (5.4%) herd-months in 2015-2019

<table>
<thead>
<tr>
<th>Herd type</th>
<th>n (herds)</th>
<th>Median ADD per 1,000 birds per herd-month</th>
<th>% herds that used antimicrobials in 2015-2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional broiler herds</td>
<td>238</td>
<td>3,199</td>
<td>68.1%</td>
</tr>
<tr>
<td>Organic broiler herds</td>
<td>32</td>
<td>11,532</td>
<td>28.2%</td>
</tr>
<tr>
<td>Conventional breeder pullet herds</td>
<td>22</td>
<td>1,190</td>
<td>86.4%</td>
</tr>
<tr>
<td>Conventional breeder herds</td>
<td>47</td>
<td>6,818</td>
<td>63.8%</td>
</tr>
</tbody>
</table>

A lower proportion of organic broiler herds (28.2%) used antimicrobials in at least one herd-month in 2015-2019 compared to conventional broiler herds (68.1%) in 2015-2019

**Conclusions**

- The results provide new insights into how antimicrobial usage patterns in the Danish broiler sector are distributed over time, within herds and between herd types.
- Further studies are needed to understand the reasons behind the relatively low use of antimicrobials in the Danish broiler sector and the associations with health, welfare and management, including use of vaccines.
- Such investigations may require both field investigations, interviews and register-based research to enable development of recommendations to ensure prudent antimicrobial use.