

### Antimicrobial usage in Swedish farrow-to-finish herds

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#### Introduction

Statistics on sales of antimicrobials for veterinary use have been monitored since 1980 in Sweden<sup>1</sup>. Sales of antimicrobials for animals are among the lowest in the European Union<sup>2</sup>, but data per production type and age group is not readily available. Such data are valuable as part of herd management schemes for improving health, productivity and as a consequence, reducing the need for antimicrobials. The aim of this study was to obtain estimates on antimicrobial usage in Swedish farrow-to-finish herds.

#### Materials and Methods

Data were collected within the MINAPIG research project ([www.minapig.eu](http://www.minapig.eu)). Treatment records and total number of animals produced during one year were collected from 59 farrow-to-finish herds. Antimicrobial use was recorded per age category (piglets, weaners, fatteners and adult pigs). The total amount of active substance used was calculated per kg body weight for the different age categories.

Fixed standard weights were assigned for each category: 2 kg (piglets), 10 kg (weaners), 50 kg (fatteners) and 250 kg (adults). To estimate treatment incidence, daily doses and treatment lengths based on information in the Summary of Products Characteristics (SPC) were used to calculate course doses for each product. Mean values were used for products where ranges for dosing and treatment length were given.

#### Results

Results on amounts used per age category and active substance are shown in table 1. The numbers of treated pigs expressed per 100 pigs per year by age group are shown in table 2. Treatments of sows are also shown per 100 farrowings.

#### Conclusions and Discussion

Treatment of individual animals, by injection or drench, was the most common approach. Group treatments were rare and only applied in weaners and fatteners. The low use of antimicrobials in weaners may be due to prophylactic use of high doses ( $\geq 2000$  ppm) of zinc oxide in 26 of the herds. Piglets and adults were the two age categories where most treatments were performed. Penicillin was most frequently used. Higher doses of penicillin than recommended in the SPC are often used which might have resulted in a false high number of treated pigs. Further, when assessing the treatments of sows, the average number of farrowings ( $x=2.2$ /year) should be taken into account.

Although antimicrobial use is low in Sweden in general<sup>2</sup>, there is still room for improvement with special attention

paid to sows and piglets. Data on herd level usage would support such work, as a tool for benchmarking.

**Table 1.** Amount of active substance (mg/kg body weight) used in 59 farrow-to finish herds during a year by age group

Active substance	Piglets	Weaners	Fatteners	Adults
<b>Individual</b>				
Penicillin	9.76	0.81	0.91	19.27
Amoxicillin	3.81	0.79	0.11	0.92
Penicillin-DHS	0.94	0.03	-	0.98
Trim-Sulph.	7.57	0.39	0.01	12.09
Oxytetracycline	0.51	0.13	0.15	0.41
Tylosin	0.28	0.27	0.08	0.16
Tulathromycin	-	-	<0.01	-
Neomycin	0.43	<0.01	-	-
DHS	0.01	<0.01	-	-
Enrofloxacin	0.16	<0.01	<0.01	0.07
Colistin	0.11	0.52	-	-
Tiamulin	-	<0.01	<0.01	-
<b>Group</b>				
Doxycycline	-	0.12	0.10	-
Tylosin	-	2.80	0.07	-
Tiamulin	-	0.29	0.04	-
<b>All treatments</b>	<b>30.1</b>	<b>6.7</b>	<b>2.1</b>	<b>46.7</b>

**Table 2.** Estimated number of treated pigs per 100 pigs or 100 farrowings per year in 59 farrow-to-finish herds shown by age group

Active substance	Piglets	Weaners	Fatteners	Adults	Farrowings
<b>Individual</b>					
Penicillin	27.11	2.28	2.57	53.52	24.33
Amoxicillin	6.36	1.34	0.19	1.53	0.70
Penicillin-DHS	0.74	0.02	-	0.77	0.35
Trim-Sulph.	16.83	0.87	0.02	26.86	12.21
Oxytetracycline	1.47	0.38	0.43	1.17	0.53
Tylosin	0.47	0.45	0.13	0.26	0.12
Tulathromycin	-	-	<0.01	-	-
Neomycin	0.17	<0.01	-	-	-
DHS	0.01	<0.01	-	-	-
Enrofloxacin	2.11	0.03	0.02	0.90	0.41
Colistin	0.38	1.74	-	-	-
Tiamulin	-	<0.01	0.01	-	-
<b>Group</b>					
Doxycycline	-	0.14	0.11	-	-
Tylosin	-	7.56	0.19	-	-
Tiamulin	-	0.61	0.09	-	-
<b>All treatments</b>	<b>55.6</b>	<b>15.4</b>	<b>3.8</b>	<b>85.0</b>	<b>38.64</b>

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#### References

1. SWEDRES-SVARM 2012, [www.sva.se](http://www.sva.se)
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