

Danish consumption of antimicrobials

by Jens Peter Nielsen and Helle Stege, Royal Veterinary and Agricultural University, Copenhagen, Denmark.

The use of antimicrobial growth promoters (AGPs) in Danish food animal production was stopped on 1st January 2000.

This followed a period of increasing focus and discussion on the use of AGPs in relation to antimicrobial resistance in human pathogens.

The Danish food animal industries responded to this by voluntarily stopping the use of all AGPs in finisher pigs, cattle and poultry in 1998 and in weaning pigs in 1999.

The aim of this article is to describe the development in antimicrobial consumption in the Danish pig production sector during and after the AGP stop.

Since 1995, practically all therapeutic antimicrobials used in pig herds in Denmark have been prescribed by veterinarians and bought from pharmacies.

Since 2001, antimicrobial consumption in pigs and other production animals has been recorded in a central database, Vetstat.

Figures on total consumption of AGPs and prescribed antimicrobials in Denmark were obtained from the Danish Antimicrobial Resistance Monitoring and Research Programme (DANMAP).

The consumption of prescribed antimicrobials per pig was calculated by dividing the total annual consumption of antimicrobials used for pigs by the total number of pigs produced. Approximately 80% of the total consumption of prescribed antimicrobials in Denmark was used for pigs.

Following the AGP stop, an increased

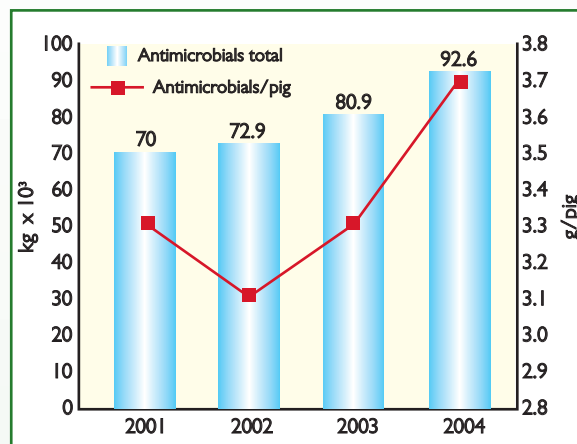


Fig. 1. Consumption of prescribed antimicrobials used per finisher pig in Denmark 2001-2004.

therapeutic consumption of antimicrobials in food animals was observed (Table 1).

However, the total antimicrobial consumption (therapeutic + AGP) was considerably lower than before the AGP stop.

When correcting for the annual production of finisher pigs, it is apparent that the increase appeared approximately two years after the AGP stop (Fig. 1).

Since the Danish AGP stop in 2000, pig production has been able to further expand its intensive and export oriented pig production without using AGPs (Table 1).

The total consumption of antimicrobials used for production animals was reduced significantly after the AGP stop (Table 1).

However, significant negative effects on health and productivity were observed in weaner pigs, and the amount of antimicrobials used per produced pig gradually increased, especially after 2002 (Fig. 1).

This was probably partly due to the intro-

duction of new diseases such as PMWS. When comparing antimicrobial consumption over a period of years, it is important to correct for the size of production, including live animal exports. This was done in the present study. Other biases may be due to mis-recordings and rejected recordings as described by Stege et al. Finally, since the potencies of antimicrobials vary considerably, the amount of antimicrobials may be converted into therapeutic doses.

Since pork is traded internationally, food safety regulations should preferably be used on an international scale. It is, therefore, of particular interest that antimicrobial growth promoters will be banned in all EU countries by the end of 2006. ■

Table 1. Annual pig production figures and total consumption of AGPs and prescribed antimicrobials for Danish food producing animals 1994-2004.

Year	94	96	98	99	00	01	02	03	04
Pig prod. (Millions)	21	20	23	23	22	23	24	24	25
AGP Prescribed	116	106	49	12	-	-	-	-	-
TOTAL (tonnes)	206	154	116	74	81	96	96	103	113