



12.08.2009

Information note regarding the Danish and EU restrictions of non-therapeutical use of antibiotics for growth promotion

Denmark is a major animal food producer in Europe, and the worlds' largest exporter of pork. The Danish food animal production is industrialised, highly intensive and applies modern management principles. Due to the great significance for the Danish economy the National Government takes the livelihood and the international competitiveness of the Danish farmers very serious.

The Danish decision to terminate the non-therapeutic use of antibiotics for growth promotion were taken as the persistent use could compromise the future effect of antibiotics for treatment of serious infections in humans as well as animals due to increasing resistance in bacteria. Moreover, the use of growth promoters were proved to possess very little, if any, effect in productivity in modern food animal production

In Denmark the termination of non-therapeutic use of antimicrobials for growth promotion has not caused any negative impact on the animal production. The Danish animal food industry has continued to improve its productivity and to increase its output.

Overall, we have observed a more than 50% reduction in the total use of antibiotics in animal food production as a result of terminating the non-therapeutic use of antimicrobial growth promoters without compromising animal health and welfare.

Danish animals are treated with antibiotics if they show symptoms of disease and because all veterinary medicinal products intended for food producing animals have been prescription-only since 2000, farmers have to seek veterinary guidance before the necessary antibiotics to ensure the optimal treatment can be obtained.

The Danish Veterinary and Food Administration has issued treatment guidelines for swine and cattle veterinary practitioners in order to introduce food safety aspects when the veterinary practitioner is prescribing drugs. Additionally, the Danish Veterinary and Food Administration is carrying out yearly inspections of veterinary practitioners treating food-producing animals in order to secure a prudent use of antimicrobials.

Further details are included in the attached FACT SHEET and in the attached report 'Risk management of antimicrobial use and resistance from food-producing animals in Denmark, 2007'

FACT sheet – Effects of Danish restrictions on non-therapeutic use of antibiotics

Scientific justification/risk assessment

Research in the mid nineteen nineties revealed that the non-therapeutic use of the antibiotics for growth promotion in food producing animals created resistance to medically important antibiotics in pathogenic bacteria, which could transmit from animal to humans. Furthermore, as the pipeline of new antibiotics entering the market was running nearly dry, there was a growing concern of a serious shortage of effective antibiotics for treatment of life threatening infections in humans. This led the World Health Organization (WHO) to call for global action to reduce the overuse and misuse of antibiotics, in order to preserve the power of the existing drugs. In this context the WHO recommended the termination of the non-therapeutic use of antibiotics in food animals for growth promotion.

Risk management in EU and in Denmark

Government interventions based on science

- In 1995, the Danish government banned the non-therapeutic use of avoparcin for growth promotion in Denmark; a ban that was extended to all EU countries in 1997.
- In January 1998, the Danish government banned the non-therapeutic use of virginiamycin for growth promotion.
- In December 1998 the EU implemented an overall ban of virginiamycin, bacitracin, tylosin and spiramycin for growth promotion.
- In 2002, EU voted to phase out all non-therapeutic use of antibiotics for growth promotion (i.e. all non-prescription use) as of the beginning of 2006.

Voluntary actions by the Danish agricultural industry

- The Danish cattle and broiler industries voluntarily stopped the non-therapeutic use of all antibiotics for growth promotion in February 1998.
- The Danish swine industry stopped all non-therapeutic use of antibiotics in swine above 35 kg by April 1998, and for all age groups by January 2000

Changes in antimicrobial usage from 1992 to 2008

- Total antimicrobial consumption in Denmark has fluctuated over time; highest in 1992, lowest in 1999 and less than 50% of the 1992 level in 2008 (**Figure 1**).

Changes in antimicrobial resistance

- The stop for use of different non-therapeutic antibiotic growth promoters (avilamycin, avoparcin, spiramycin, tylosin, virginiamycin) has resulted in a major reduction in antimicrobial resistance as measured among several different bacterial species in food animals and food. This has been thoroughly documented in scientific publications from Denmark.

Changes in productivity and animal health

Cattle

No evidence, not even anecdotal, suggests any negative health effects of the AGP stop.

Swine

- The Danish swine production has increased with similar rates before and after the non-therapeutic use of for growth promotion stopped (almost 50% from 1992 to 2008) (**Figure 2**).
- The average annual number of pigs raised for slaughter per sow has continued to increase (**Figure 2**).
- Weaner mortality increased several years before as well as few years after non-therapeutic use stopped, but has drastically decreased in recent years, indicating no effect of the termination (**Figure 3**).
- Weaner average daily gain has increased after the termination (**Figure 3**).
- Finisher mortality has not been affected by the termination (**Figure 4**)
- Finisher average daily gain has continued to increase before and after the termination (**Figure 4**).

Broilers

- Kg broilers produced per m² and mortality was not affected by the termination (**Figure 5 & 6**).
- The feed conversion ratio increased marginally with cost increase equivalent to costs saved on not using the antibiotics (**Figure 7**)
- Overall effect on industry neutral, and performance indicators has continued to improve.

In conclusion:

- Total antibiotic consumption in food producing animals has been reduced by >50%
- Animal health has not been compromised
- Agricultural productivity has continued to improve
- Consumer prices have not been affected

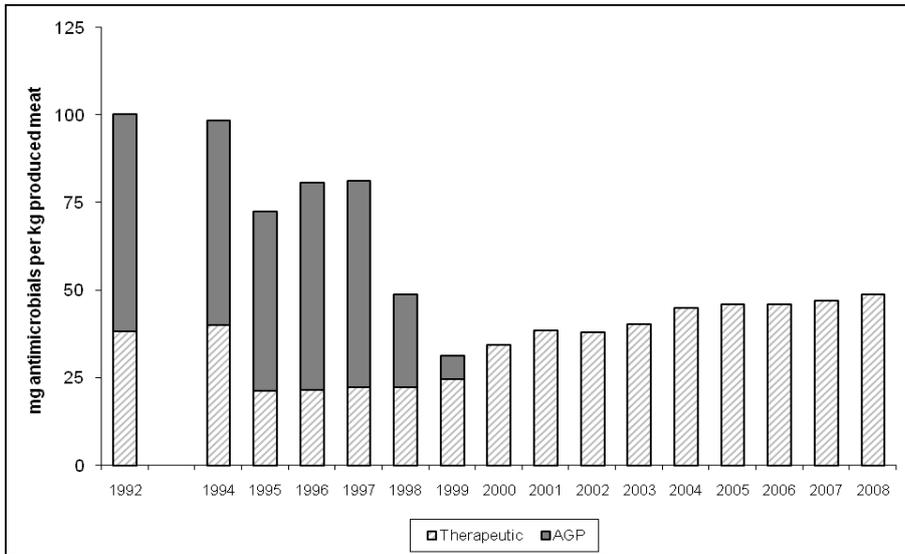


Figure 1. Consumption of antibiotics (therapeutic and non-therapeutic (AGP)) in swine in Denmark (mg/kg meat produced). Swine consume >80% of the total antibiotic usage in animals in Denmark. The corresponding usage in broiler chicken in 2007 was 0,3 mg/kg and the usage in all cattle, incl. dairy cows, in 2007 was 21 mg/kg meat produced.

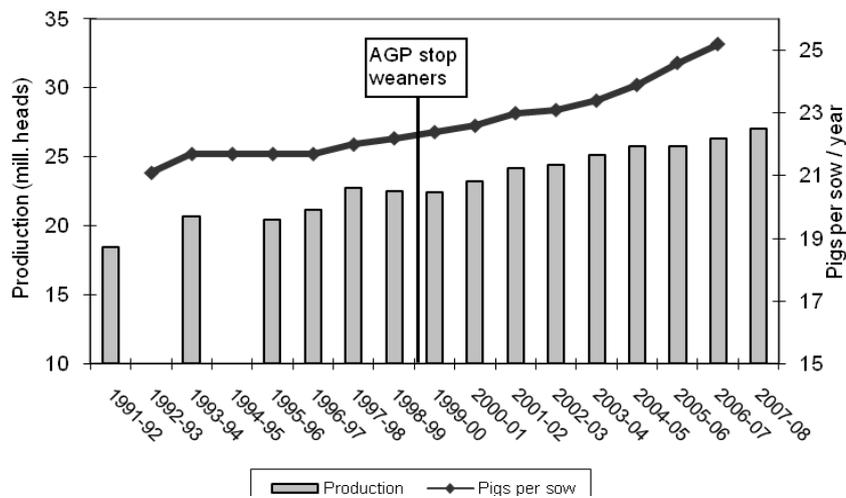


Figure 2. Production of swine and No. pigs produced per sow/year in Denmark

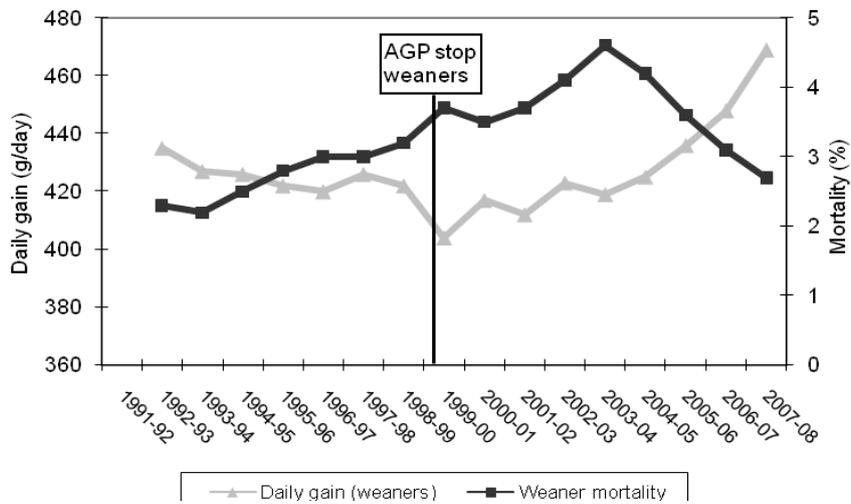


Figure 3. Daily weight gain of weaner pigs and mortality of weaner pigs in Denmark

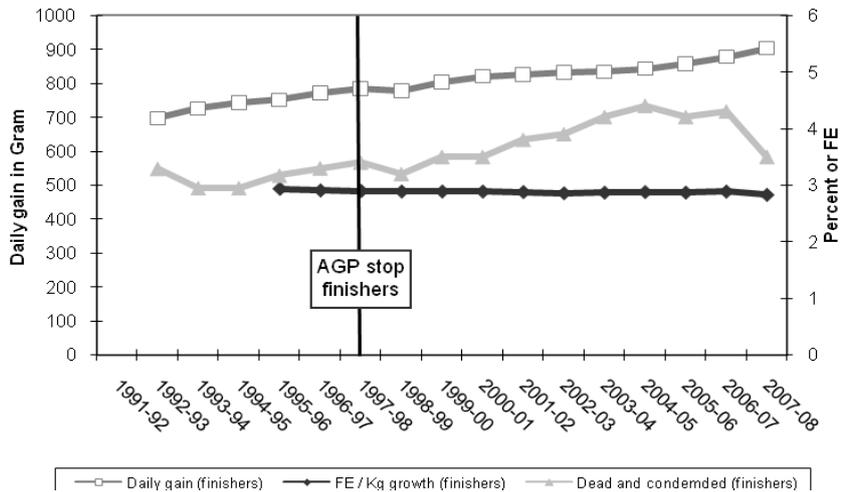


Figure 4. Daily weight gain, mortality and feed efficiency of finishing pigs in Denmark

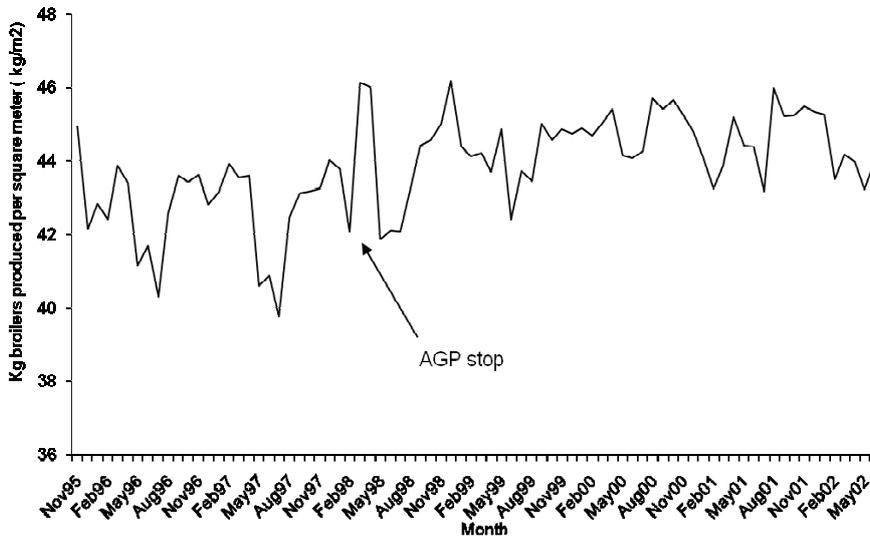


Figure 5. Productivity of broiler chicken in Denmark (kg produced per sqm)

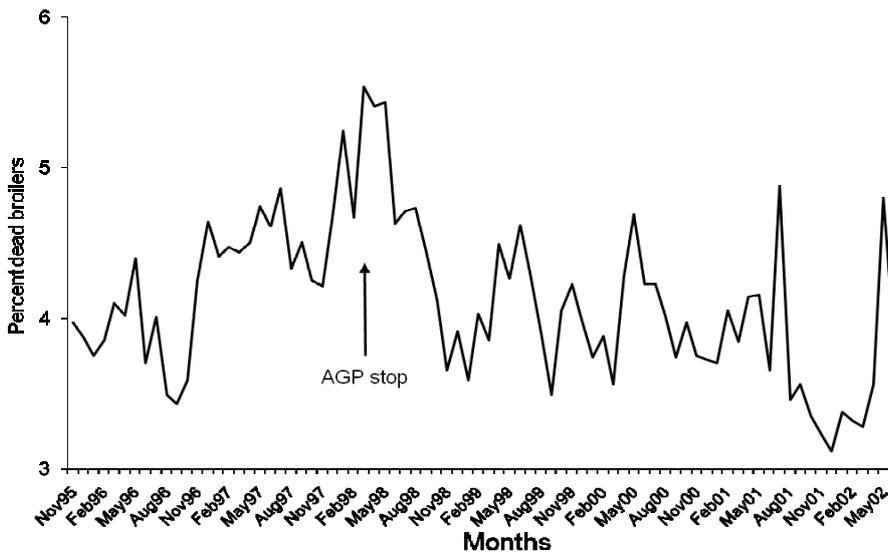


Figure 6. Mortality of broiler chicken in Denmark

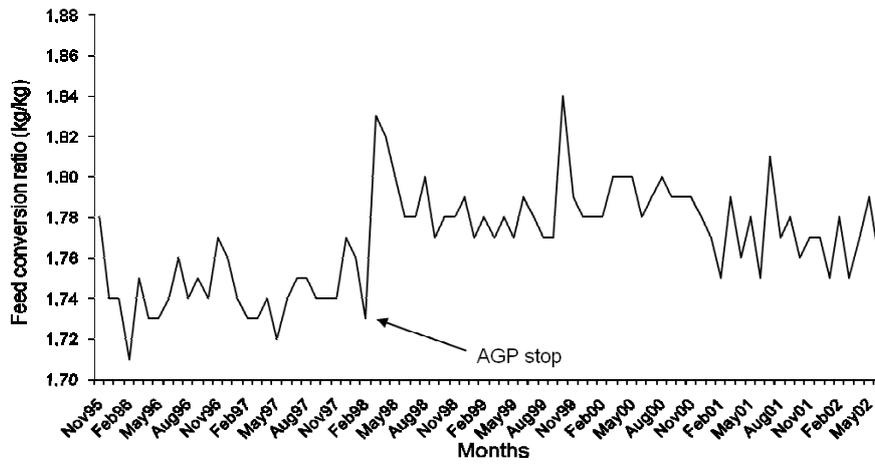


Figure 7. Feed conversion ratio in broilers in Denmark, change offset by reduced costs