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Further reduction in antimicrobial use in Danish animals

Antimicrobial consumption in Danish animals has continued to decrease in 2015, mainly due to a reduction in pigs. By contrast, serious outbreaks of disease among broilers and mink have resulted in an increased use of antimicrobials in these animals. These are some of the findings in the annual DANMAP report from Statens Serum Institut as well as the National Veterinary Institute and the National Food Institute, which are both departments under the Technical University of Denmark. This year's report is the 20th anniversary edition of DANMAP.

The total antimicrobial consumption in Denmark – when measured in kilos – in production and companion animals was 5% lower in 2015 than the previous year. The fall in consumption is mainly due to a 5% reduction in usage in the pig production sector, which constitutes about 86% of meat production in Denmark. These figures should be seen in light of the fact that Danish farmers have produced more pigs in 2015 than the year before.

Lower consumption in pig production

Antimicrobial consumption in pigs - when measured in doses and adjusted for the number of pigs produced per year - was 22% lower in 2015 than in 2009, when consumption was at its peak following Denmark's ban on the use of antimicrobial growth promoters. This decrease in consumption is primarily due to a reduction in the use of the type of antimicrobials called tetracyclines, which has been reduced by 9% since 2014 and by 24% since 2009.

The development in the consumption of colistins is worrying

Contrary to the general fall in antimicrobial use in pigs, the use of colistins has doubled from 409 kilos in 2009 to 825 kilos in 2015 - mainly because of an increased use in weaners.

"The increase in consumption of colistins among animals is not desirable, because this type of antimicrobial is used to treat serious bacterial infections in people, where other antimicrobials are ineffective," Head of Division Flemming Bager from the National Food Institute says.

Disease outbreaks in poultry trigger high consumption

Several severe disease outbreaks in the boiler production are the reason behind a 184% increase in antimicrobial consumption in the poultry production in 2015. The increase applies particularly to tetracyclines and macrolides. As such, consumption is by far the highest in the past decade.

"Antimicrobial consumption in the broiler production has traditionally been very low. So when – as in this past year – it is necessary to take action to treat some serious disease outbreaks, this will result in considerable fluctuations in consumption figures," Flemming Bager explains.

Consumption in mink, fish and companion animals

Large fluctuations in the consumption of antimicrobials for the treatment of mink and fish have been observed in 2015. Again, this can mainly be explained by unusual disease patterns, such as the biggest outbreak in Danish history of plasmocytosis in mink, which has resulted in a 23% increase in antimicrobial consumption in the mink industry.

By contrast, a cool summer has resulted in fewer disease problems in Danish fish farms and antimicrobial consumption is thus 42% lower in 2015 than the year before. A successful vaccination strategy has also helped to generally reduce consumption in fish farms.

Consumption figures for companion animals show an overall 15% fall in 2015, which includes a reduction in the use of two types of critically important antimicrobials, namely cephalosporins and fluoroquinolones. This is in line with the Danish Veterinary Association's treatment manual, which encourages minimal use of critically important antimicrobials.

Still low consumption of critically important antimicrobials

Consumption of critically important antimicrobials – such as cephalosporins og fluoroquinolones – is still very low in production animals.

"By only using critically important antimicrobials to treat animals, when it is absolutely necessary, farmers are helping to ensure that these drugs continue to be effective in the treatment of seriously ill people," Flemming Bager says.

Read more

Since 1995, the DANMAP programme has monitored the use of antimicrobials in humans and animals in Denmark and the occurrence of antimicrobial resistance in bacteria in animals, people and foods. The organizations behind DANMAP are the National Food Institute, the National Veterinary Institute and Statens Serum Institute. The DANMAP report is prepared by the National Food Institute and Statens Serum Institute.

[Find the DANMAP report on DANMAP's website.](#)

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Facts about antimicrobial resistance

Treatment with antimicrobials is intended to kill pathogenic bacteria. Unfortunately, antimicrobials also cause the bacteria to protect themselves by developing resistance to the type of antimicrobials that are used to treat them.

Resistant bacteria can be transmitted between humans, and bacteria can transmit resistance to each other. However, resistant bacteria are poor at surviving if antimicrobials are not present. Therefore, it is important to have an overall focus on using as few antimicrobials as possible for the treatment of both animals and humans.

Bacteria know no borders. Therefore antimicrobial resistance in one country can cause problems outside of its borders. As such the over usage of antimicrobials in both animals and humans is a global problem.

Narrow and broad spectrum antimicrobials

Not all antimicrobials are the same. Some have a narrow spectrum and affect only specific types of bacteria. They are used when you know which bacteria are causing the disease.

Others are broad spectrum and affect numerous groups of bacteria at the same time. They can therefore be used to treat a disease before knowing which bacteria cause the disease. However, they often also kill useful and harmless bacteria such as bacteria from the intestine, which may lead to the emergence of resistant bacteria.

Critically important antimicrobials

Not all antimicrobials are equally important in the treatment of humans. WHO has declared a number of antimicrobials to be 'critically important', because they are the only or one of only a few antimicrobials, which can be used to treat serious or life-threatening infections in humans.

These types include carbapenems, third and fourth generation cephalosporins, fluoroquinolones and macrolides.