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SWEDISH EXPERIENCE OF BANNING THE USE OF ANTI-MICROBIAL GROWTH PROMOTERS

by the Ministry of Agriculture, Food and Fisheries (Sweden)

COUNTRY REPORT PROPOSED BY SWEDEN

SUMMARY

In Sweden the use of antibiotics as growth promoters in animal feed has been prohibited since 1986. Anti-microbials may only be added to feed for veterinary purposes, and always subject to veterinary prescription.

When antibiotics were withdrawn from animal feed in 1986 there were no noticeable effects on calves and fattening pigs. There were, however, initially effects on piglet and chicken health, resulting in an increased therapeutic use of antibiotics.

Through various measures the health problems in pig and chicken production were largely solved within a few years and the therapeutic use of antibiotics decreased.

Since 1988 animal health has constantly improved and the use of antibiotics for animals has decreased. The total use in 2001 was 34 percent of the use in 1984.

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EXPERIENCE IN PIG PRODUCTION

Before 1986 most pigs were given olaquinox or mecadox at a dose of 50 ppm from birth until delivery to finishing units at 25 kg live weight, at the age of 10-12 weeks. After this they were given avoparcin or virginiamycin until slaughter at the age of approximately seven months.

When antibiotics were withdrawn from the feed of finishing pigs there were no clinical problems. The growth rate continued to be high, and is comparable to the growth rate in countries where antibiotic growth promoters are still used.

In piglet producing units, however, there were problems. During the first year after the ban, significant clinical problems emerged in piglets. Post weaning mortality increased by 1,5 percent. The age at 25 kg was increased by 5-6 days. This clearly demonstrated that the "growth promoters" had actually been effective in preventing diseases.

Due to the increased disease rates veterinarians prescribed antibiotics at therapeutic doses. During the first years after the ban, the therapeutic use of antibiotics increased. During this time major efforts were made to introduce sectioning and planned production and to improve hygiene in individual herds. Feed was modified and reformulated. By 1993 the use of antibiotics had decreased by approximately 50 percent. Since then there has been a gradual reduction of use.

The Swedish Society for Veterinary Medicine has issued guidelines for veterinarians on how to prescribe antibiotics. These guidelines emphasise that prescription of antibiotics must always be accompanied by recommendations for prophylactic measures.

New rearing systems have also been developed, including the weaning of piglets on deep litter beds in large groups, so called birth-to-slaughter systems.

Swedish experience shows that under optimal conditions excellent production results can be achieved without the continuous use of antibiotic growth promoters.

After the ban on antibiotic growth promoters the use of zinc-oxide to prevent and cure diarrhoea in piglets increased. This gave rise to environmental concerns as zinc may accumulate causing long-term negative effects. To prevent zinc-oxide from being used instead of other health care and preventive measures new legislation was implemented in 1998 whereby zinc-oxide in concentrations higher than 250 mg per kg of feed were regulated as prescription-only medicines. This made it possible to reduce further use. By September 1998 approximately 85 percent of piglets reached the age of delivery to fattening units without having been given either antibiotics or zinc-oxide.

EXPERIENCE IN CHICKEN PRODUCTION

Initially the withdrawal of antibiotics from chicken feed led to problems for the broiler industry due to the disease necrotic enteritis. In 1987 virtually all chickens were prescribed virginiamycin to prevent this disease. After this a new approach was adopted to combat the disease. Instead of continual prophylactic treatment with virginiamycin, a two-day treatment with phenoxy methyl penicillin in drinking water was given when there was an outbreak. Necrotic enteritis is caused by a number of factors, including poor hygiene, bad management, unsuitable feed composition and suboptimal construction and climate of stables. During the 1980s research was carried out in close co-operation between the feed industry and the

broiler producers to find alternative ways to treat necrotic enteritis. Changes were made in the composition of chicken feed, reducing the protein contents, increasing contents of fibre and coarse grain particles and adding enzymes. As a result of these and other measures the use of antibiotics for treatment of necrotic enteritis decreased from approximately two tonnes of virginiamycin in 1987 to 100 kg of phenoxy methyl penicillin in 1988 and since then to a negligible level.

It should be noted that coccidiostats of the ionophore type used in Sweden also inhibit the growth of *Clostridium perfringens*, the causative agent of necrotic enteritis, and thus also help prevent the disease.

EXPERIENCE IN BEEF PRODUCTION

The use of antibiotic growth promoters in specialised beef production had more or less come to an end in Sweden before the ban in 1986. The reason for this was that antibiotics were not seen to have positive effects on production results. For these reasons the ban in 1986 did not have any effect on beef production.

GENERAL COMMENTS

In 1988 a new Animal Welfare Act came into force in Sweden, placing high demands on animal housing, management and preventive health care. According to the Animal Welfare Act animals must be protected from unnecessary suffering and from disease. Production systems must be adapted so that animals can perform natural behaviour.

Sweden's experience shows that it is possible to adapt to a situation where antibiotic feed additives are not used. To make this possible the use of such feed additives should be phased out during a transitional period, so that the necessary changes can be made in feed composition, management, preventive health care, housing etc. This was also recommended in a report by the European Commission's Multidisciplinary Scientific Committee on Antibiotic Resistance in 1999.