



COUNCIL ON ANIMAL AFFAIRS

ANTIBIOTIC POLICY IN ANIMAL HUSBANDRY:  
EFFECTS AND PERSPECTIVES

SUMMARY

## Aims and activities of the Council

The Council on Animal Affairs (Raad voor Dierenangelegenheden – RDA) is an independent council of experts that gives the Minister for Agriculture solicited and unsolicited advice on multidisciplinary issues in the field of animal welfare and health. The Council on Animal Affairs currently comprises around 40 members with very different backgrounds and expertise, whose membership is in a personal capacity and not bound by any instructions or binding mandate.

The Council on Animal Affairs deals with issues across the spectrum of public policy on animals: about farmed and non-farmed, in other words animals that are ‘living in the wild,’ about hobby farm animals, about companion animals and about production and laboratory animals.

The Council documents the outcome of its considerations in an advisory report. This gives details of the scientific and social background of an issue and gives advice on policy directions and solution directions for dilemmas. Consensus is not necessary: a Council advisory report can contain minority opinions.

## Foreword

The Dutch government aims to establish a sensible antibiotic policy, restricting the use of antibiotics in both animal husbandry and human healthcare. Preventive use of these substances has been forbidden since 2012, and use to promote animal growth in animal husbandry since 2006. Determined attempts have been made in recent years, with full assistance from veterinarians, to restrict the use of antibiotics for therapeutic purposes in the four main sectors of animal husbandry: cattle, pigs, calves and poultry. The Dutch Ministry of Economic Affairs is updating its policy concerning the use of antibiotics in animal husbandry, and has requested advice in this connection from various bodies, including the RDA. The RDA was asked in particular to make an inventory of the consequences of the current policy of reducing antibiotic use on animal health and welfare, and to assess the possible further steps that might be taken in this field.

The preparation of this Advisory Report involved not only consultation of the relevant scientific literature but also use of the practical knowledge collected by the antibiotic resistance working groups for the four above-mentioned sectors, which were set up within the framework of the Agreement on Antibiotic Resistance in Animal Husbandry (Convenant antibioticaresistente dierhouderij).

Apart from publishing the full text of this Advisory Report, the Council is simultaneously issuing the present Summary, with the intention of making its opinions more widely available to the public at large.

The Hague, March 2016



*Marc Schakenraad,  
Secretary to the Council*

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RAAD VOOR DIERENAANGELEGENHEDEN

# Antibiotic policy in animal husbandry: Effects and perspectives

## An Advisory Report requested by the Minister for Agriculture

**Question:** The Dutch government has had a policy restricting the use of antibiotics in animal husbandry for several years now. What effect has this had on animal welfare and health, would it be advisable to take further steps in this direction, and if so, what should these steps be?

**Background:** The Dutch Cabinet is considering updating its existing antibiotic policy. Voices have been raised from the world of animal husbandry suggesting that the current policy may have adverse effects on animal health and hence on animal welfare. On the other hand, there is evidence that individual farms with a low level of antibiotic use may actually do very well in terms of animal health and welfare. Before the government takes any further steps, it is important to know the effect of the current policy on animal health and welfare.

**Considerations:** Arjan Stegeman, Chairman of the expert committee that prepared this Advisory Report, stated that the group decided on a two-stage approach. “First we consulted the scientific literature, and then we asked practitioners in the field what their views were. There was little relevant scientific information, since the policy of reducing antibiotic use is so recent, and is still mainly found in the Netherlands. That is why we also consulted practical experts. We were fortunate to be able to hear the experience of the antibiotic resistance working groups that have been set up in the various sectors of Dutch animal husbandry.”

Photo: Hans Roggen



Arjan Stegeman

The expert committee stated that there has been little scientific research in this field, and that moreover there are relatively few objective databases on animal health and welfare. “That makes policy formation difficult,” said Arjan Stegeman, who is professor of Farm Animal Health in the Faculty of Veterinary Medicine at Utrecht University in daily life. “A good policy should preferably be based on a clear link between practical data on health and welfare and the use of antibiotics.” Such data are only available for dairy farming and the rearing of calves for their meat, and show that the reduction in antibiotic use in recent years has been accompanied by an increase in calf mortality rates and more cases of mastitis in dairy cattle. The various interviews held by the expert committee indicated among other things that the current guidelines and lists of approved antibiotics can lead to the use of insufficiently effective agents.

“This may cause animals to suffer longer than when the right agent is used,” said Prof. Stegeman, who added, “Farmers and veterinarians sometimes make a reduction in antibiotic use their primary aim. This overshoots the mark, often at the expense of animal welfare.” However, many positive trends have also been observed, the Chairman

of the expert committee went on. “It is clear that the current antibiotic policy has led to a different mind-set, with greater awareness of the effects of antibiotics and greater readiness to take preventive measures. New lines of research have also opened up, for example on sturdier animals, quicker diagnosis and the development of new vaccines to make antibiotic use unnecessary.”

**Recommendation:** The new policy should include steps to ensure proper collection of data on antibiotic use and animal health and welfare. Effective animal welfare indicators should be introduced. Attention should be paid to the large differences in antibiotic use between different farms, and further action should be focused on the farms that still use too much antibiotics. An integrated approach should be taken to animal husbandry in the interests of better animal health and welfare, with closer cooperation and exchange of information between different links of the production chain. Policy-makers should be aware of the lower yields in some sectors, and financial stimuli should as far as possible be introduced to encourage healthy business practices.



# Brief summary of the contents

## Introduction

The Dutch Cabinet has a policy of restricting antibiotic use to limit the development of resistance in sensitive microorganisms. Antibiotic use in the cattle, pig, calf and poultry sectors of Dutch animal husbandry has been substantially reduced in recent years, with effective support from veterinary services. The Dutch Ministry of Economic Affairs is updating its policy concerning the use of antibiotics in animal husbandry, and has asked the Council on Animal Affairs (RDA) for its view on the consequences of the current policy of reducing antibiotic use on animal health and welfare, and for an assessment of the possible further steps that might be taken to reduce antibiotic use without prejudice to animal health and welfare.

## Approach

The preparation of this Advisory Report involved not only consultation of the relevant scientific literature but also use of the practical knowledge collected by antibiotic resistance working groups<sup>1</sup> and other relevant organisations. The RDA discussed, assessed and weighted this information, and used it as a basis for preparation of the desired Advisory Report.

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1 Antibiotic resistance working groups were set up in 2008 for the four main sectors of Dutch animal husbandry: cattle, pigs, calves and poultry, within the framework of the Agreement on Antibiotic Resistance in Animal Husbandry (Convenant Antibioticaresistente Dierhouderij). These working groups comprised mainly farmers, veterinarians and representatives of various professional associations and pressure groups.

## Conclusions

The RDA has found that the scientific literature on the effects of the current antibiotic policy and the available field data are still too limited to permit an unambiguous answer to the question of whether this policy has an effect on animal health and welfare. The reduction of antibiotic use seems to have been accompanied by a rise in disease and mortality among calves, and by more mastitis in dairy cattle after calving. Interviewees from other sectors expressed concerns about a rise in disease and mortality, but there are no aggregated objective data on this topic or on animal welfare and other factors (including risk factors). It is thus not possible at present to establish an unambiguous relationship between antibiotic use on the one hand and animal health and welfare on the other. There are also as yet no reliable, objective indicators that can be used to monitor animal welfare.

All four sectors of animal husbandry investigated show a marked reduction in antibiotic use. There has been close, effective cooperation within the farming community to respond to the changing demands made by society. The RDA has found that both livestock breeders and veterinarians display greater awareness of the need for responsible, restricted antibiotic use. The rules required for this have been laid down in quality systems, professional guidelines, lists of approved antibiotics and the treatment plan drawn up for individual farms. More attention is now paid to the need for preventive animal healthcare, where the health plan drawn up jointly by the farmer and the veterinarian for each farm plays an important role. Close, effective



Sensitivity test: inhibition of bacterial growth around the black disc with antibiotics

cooperation in the various sectors of animal husbandry has helped to bring these advances about. The benchmarking of antibiotic use for farmers and veterinarians contributes to transparency of use and permits internal comparison. There are however large differences between sectors; and there are still farmers who use too much antibiotics, and veterinarians who prescribe too much antibiotics, in each sector.

When disease occurs, the lack of timely treatment (due to fear of sanctions and the wish to maintain restrictions on antibiotic use) and effective treatment (due to bacterial resistance to the first choice antibiotic) can have an adverse effect on the incidence of disease and the mortality, and hence on animal welfare, on some farms.

The activity and safety of new therapeutic and preventive drugs have not yet been adequately verified in practice. It is expected that a wider arsenal of usable agents will be available in the near future.

Biosecurity and promotion of animal resistance to infection both make a major contribution in their own way to preventive animal healthcare and combatting the adverse effects of the antibiotic policy. The motivation, knowledge and expertise of farmers and veterinarians, and the advisory skills of the latter group, play a major role in preventive animal healthcare. The entrepreneurial skills of the farmers, and their ability to make the necessary investments, are also extremely important. Field observations indicate that major differences exist between farms on all these points.

Photo: Twan Wiermans



A sick piglet receives treatment

Poor financial results in some sectors, potentially conflicting requirements, prolonged application procedures for modifications to animal accommodation and the lack of a level playing field in Europe are some of the main factors delaying progress in this field.

Completely antibiotic-free animal husbandry is impossible without sacrifices in animal welfare. Animal diseases occur in all forms of animal husbandry. The RDA approves the responsible and selective use of antibiotics in animal husbandry, where sick animals receive quick, effective treatment.

### Recommendations

- Integrated data on disease incidence, mortality, welfare, antibiotic use and other factors (including risk factors) should be made available to all parties concerned, such as farmers and researchers, as possible benchmarks for animal health and welfare, and as a basis for research into optimal action perspectives. Reliable, objective animal welfare indicators are also needed in this connection.
- Steps should be taken to ensure responsible, selective antibiotic use in animal husbandry, including rapid, effective treatment of animals where necessary. The wish to achieve a major reduction in antibiotic use should never lead to the attitude that higher disease incidence and mortality are acceptable.
- Control measures for antibiotic use should be focused on those using or prescribing large amounts of these agents, and should include close monitoring of the effects on animal health and welfare.
- Minimum antibiotic use demands system innovation, which in its turn requires further research and time for implementation.



- Stakeholder research and validation of best practices should be encouraged and facilitated. The implementation of successful innovation should be stimulated by financial measures and robust market concepts.
- An integrated, sector- and production-chain-oriented approach should be taken to the reduction of antibiotic use: this will facilitate horizontal and vertical coordination and cooperation. Closer cooperation and exchange of information between farms and suppliers of young animals (hatcheries, dairy farmers, and breeders) should be encouraged. Good communication between animal husbandry, veterinary services and others who visit the farms on business should be facilitated.
- Steps should be taken to create a level playing field in European regulations concerning antibiotic use, animal health and welfare, and new approaches to prevention and treatment.
- The dissemination of existing knowledge in this field should be improved by education and other means such as life-long learning and study groups for farmers, veterinarians and others who visit farms on business. Steps should also be taken to change the mind-set of stakeholders, where necessary, towards a better balance between attempts to reduce antibiotic use and awareness of the need for animal health and welfare.

In this Advisory Report, the RDA makes detailed recommendations for continued cooperation, more measurement, more research, more knowledge transfer and more encouragement of the necessary measures. The RDA is convinced that these recommendations can make a big contribution to increasing the motivation and ability of those involved in Dutch animal husbandry to take further steps to reduce antibiotic use without prejudice to animal health and welfare.

Photo: Twan Wiermans



## Appendix

### Parties involved in the preparation of this Advisory Report

This advisory report is a product of the Council on Animal Affairs (RDA). It was prepared by a working group composed of RDA members Dr F.L.B. Meijboom, Prof. F. van Knapen, Prof. L.J. Hellebrekers, Prof. M.C.M. de Jong, P.J. Vingerling, H.W.A. Swinkels and A.J.M. van Hoof, under the chairmanship of Prof. J.A. Stegeman. Prof. D.J. Mevius and Prof. Y.H. Schukken were added to the working group at the request of the RDA. Dr T.C.W. Ploegaert acted as secretary of the working group.

### Members of the Council on Animal Affairs as of 1 January 2016

Prof. J.J.M. van Alphen	J. Kaandorp
Prof. J.A.M. van Arendonk (till 1 January 2016)	Prof. B. Kemp
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