Salmonella reduction in chronic Salmonella infected Danish swineherds by use of a special task force.

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Summary: In the Danish Salmonella Surveillance and Control Programme all swineherds are each month assigned to one of three salmonella levels. In order to clarify why an increasing number of chronic infected level 3 herds were unable to solve their salmonella-problems an advisory task force consisting of 5 veterinarians and 5 swine consultants was established. The task force worked out mandatory herd specific intervention plans in 78 swineherds. Twelve months after the implementation of the intervention plan, 61 herds (78%) was assigned to level 1, 12 herds (15%) to level 2 and 5 herds (6%) to level 3. Of the 61 level 1 herds, 45 herds had been assigned to level 1 for six months in a row. This specific initiative shows that it is possible to reduce the number of chronic infected level 3 herds by combination of intensive advising, enforced implementation of intervention plans and economic pressure.

Keywords: Salmonella-reduction, intervention.

Introduction: Since the implementation of the Danish Salmonella Surveillance and Control Programme in 1995 approximately 16,000 finisher herds have each month been assigned to one of three levels based on the level of Salmonella antibodies in meat juice-samples from the herd (Mousing et al., 1997). Herds in level 2 and 3 are every six months requested to have pen faecal samples examined in order to determine the serotype and the distribution within the herd. Additionally, the farmer together with the herd veterinarian and the local swine consultant must work out a herd specific intervention plan in order to reduce the prevalence of Salmonella in the herd.
In September 1998, 488 herds had received from 4 to 7 requests on Salmonella advice due to recurrent Salmonella infection.
To study why many of these chronic infected herds were unable to solve their Salmonella problems, the Danish Bacon and Meat Council established a Salmonella task force consisting of 5 veterinary practitioners and 5 swine consultants.
Materials and Methods: Each month from September 1998 to August 2000, after classification of the Danish swineherds to level 1, 2 and 3, level 3 herds with four or more requests on Salmonella advice within the previous 36 months were assigned to the task force. In each herd a veterinarian and a swine consultant from the task force performed a consultancy visit and developed a herd specific intervention plan focusing on feed, management, cleaning and disinfection routines, rodent control etc. Three months later the task force performed a follow up visit to certify that the corrective actions were satisfactorily implemented.

The costs of these visits, consultancy and development of the intervention plan were paid by the farmer. If the farmer refused to receive advice from the task force or the agreed corrective actions were not implemented, he was deducted four percent of the value per slaughter carcass by the slaughterhouse.

Results: From September 1998 to August 2000, a total of 151 herds were referred to the task force. 35 herds (23%) had their participation in the programme cancelled for different reasons. Instead of receiving the task force, 29 herds (19%) decided to close their swine production. 9 herds (6%) refused to receive the task force and were deducted four percent. The remaining 78 herds (52%) were visited twice by the task force and had a herd specific intervention plan developed and implemented.

Figure 1: Distribution of herds according to Salmonella level

Figure 1. Shows the distribution of the 78 herds to level 1, 2 and 3 from 12 month before the consultancy visit to 12 months after.
At the month of consultancy visit (month=0) 6% of the herds was assigned to level 1, 40% to level 2 and 54% to level 3. 12 months after the consultancy visit 78% of the 78 herds was assigned to level 1, 16% to level 2 and 6% to level 3, figure 1. There was more or less an equal number (app. 10%) of level 3 herds in months −12 to −7 as in months 7 to 12 but the number of level 2 herds was lower in month 7-12 than in month −12 to −7 because of fewer herds changing from one level to another. 45 herds (58%) were level 1 herds every month from 7 to 12. Where as only 12 herds were level 1 herds every month from −7 to −12. The costs of consultancy visit, intervention plan and follow up visit at herd level has been ranging between 400 and 3,500 Euro.

Discussion: When forced to have a Salmonella problem solved by this special task force 29 farmers decided instead to shut down their swine production. Some farmers explained that the expenses to the task force and implementation of the intervention plan more than exceeded the profit from the production.

The task force was able to solve the Salmonella problems in the majority of the herds. 45 herds (58%) were level 1 herds six months in a row from month 7 to 12 and the number of level 2 herds was decreased indicating fewer shifts between the levels after consultancy visits.

All of the 78 herds had previous intervention plans worked out by local advisers at least 4 times without having their Salmonella problem solved. It is our experience that many of these farmers were reluctant to spent money on implementation of the intervention plan because of lack of motivation and that many local advisers hesitated to enforce the implementation due to economic dependence on the farmers.

Some farmers have had inadequate advices due to local advisers ignorance on salmonella risk factors and their optimal intervention plans. In addition farmers had a tendency not to be persistent with the individual corrective actions in their intervention plans.

This specific initiative shows that it is possible to reduce the number of chronic infected herds by combination of intensive advising, enforced implementation of intervention plans and economic pressure.

References