

# ZAP SALMONELLA



A zoonoses action plan  
for the British Pig Industry

Prepared by  
the British Pig  
Executive  
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**BPEX**

**BMMA**  
BRITISH MEAT MANUFACTURERS'  
ASSOCIATION



### BACKGROUND

The safety of food is of growing importance to consumers in Great Britain and throughout the rest of the EU. These concerns are reflected in market research and in media coverage.

Reported cases of food poisoning were increasing until 1998. Significantly more cases occur in the community than are reported - for Salmonella it is estimated that three cases occur for every one reported. The majority of Salmonellas isolated in food are serotypes found only in poultry. Reported cases of Salmonellosis in people have fallen since 1998, mainly as a result of monitoring and measures introduced by the poultry industry.

So far, the number of cases of Salmonellosis in people connected with pork and pork products have been relatively low. However, research published in 2000 shows that 23% of pigs arriving at abattoirs carry Salmonella and thus the risk of contaminating the meat is present.

The Food Standards Agency has made it clear that it expects an improvement. If there is no action the introduction of legislation will be considered. The industry has agreed that self-regulation is preferable to having new laws imposed. In response the British Pig Executive (BPEX) has developed a Zoonoses Action Plan (ZAP) Salmonella monitoring programme in order to safeguard and build the image of British pig production, to enhance its competitive position and to help ensure that any risk to our consumers, however small, is minimised.

### WHY DO WE NEED A SALMONELLA MONITORING AND CONTROL PROGRAMME?

A survey of British abattoirs published in December 2000 showed that Salmonella was present in 23% of pigs. Abattoir processing techniques generally minimise carcass contamination. However, Salmonella was found on the surface of 5% of carcasses in the survey. Salmonella cases in humans have been falling in recent years, but *Salmonella* Typhimurium isolations rose between 1999 and 2000 at the same time as incidents involving other strains of Salmonella, including those found only in poultry, continued to fall. *Salmonella* Typhimurium is the most common strain of Salmonella

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found in pigs. Reports of Salmonella in humans increased between 2000 and 2001 because of a rise in the strains of Salmonella usually found only in poultry.

### WHAT ARE THE OBJECTIVES OF ZAP SALMONELLA?

Any pig exposed to Salmonella develops antibodies. The more recent and greater the infection, the higher the number of antibodies. The objective of the ZAP Salmonella monitoring programme is to identify those farms where high proportions of pigs test positive for Salmonella antibodies. The programme will pinpoint those farms where pigs are exposed to high levels of Salmonella and allow producers to take action to control the level of exposure. The ZAP Salmonella monitoring programme will not in itself reduce Salmonella in pigs but it is the most practical way of identifying farms where problems with Salmonella exist.

### CAN WE ERADICATE SALMONELLA?

No, not entirely, but it can be controlled and minimised. The British pig industry should play its part in reducing the risk of Salmonellosis wherever possible to consumers of British pig meat. It is also important that we are seen to be acting in a responsible manner by our customers.

### WHY ARE WE INTRODUCING ZAP SALMONELLA NOW?

The timetable for ZAP is to start the monitoring scheme in mid-2002. Over the following 12 months producers will be provided with information on the levels of Salmonella positive results in their pigs and whether the trend of the results is improving or deteriorating. The worst affected farms will be assigned to Level 3 in 2003 and will be required to develop and introduce an action plan to control Salmonella. In parallel in 2003 the initial results from DEFRA commissioned research into strategies to control Salmonella on farm will start to become available. Information packs containing advice based on DEFRA and MLC funded research as well as on the experience in other countries will be available.

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Government has made it clear that they expect the industry to act. If it does not then a framework may be imposed through legislation for control of Salmonella and other zoonoses.

### DO ANY OTHER COUNTRIES CONTROL SALMONELLA?

Yes, Denmark has been operating a Salmonella control scheme similar to the ZAP Salmonella scheme for 9 years. Salmonella control programmes are also operated in Ireland and are currently being introduced in the Netherlands and Germany.

The EU Commission is currently consulting on the requirements for Salmonella control throughout the EU, which will be included in a revised Zoonosis Directive and come into operation in 2004. In designing the ZAP scheme BPEX have monitored the EU Commission proposals closely and are working to ensure that the scheme will be compatible with any EU requirements.

### HOW WILL IT WORK?

ZAP Salmonella is an abattoir based monitoring programme operated through farm and abattoir assurance schemes. Samples will be collected from 2% of pigs slaughtered at British Quality Assured Pork abattoirs. These samples will then be analysed at a central laboratory using a Meat Juice ELISA test. Producers will receive regular reports of the results of the Salmonella monitoring of their pigs.

### WHY IS MEAT-JUICE ELISA BEING USED FOR MONITORING?

The meat-juice ELISA test was developed in Denmark and forms the basis of their Salmonella control programme. It is becoming the defacto European standard and is being used in schemes in Ireland, the Netherlands, Germany and some parts of the US. The test measures Salmonella antibodies that are produced by pigs when they encounter Salmonella. Levels of antibody are much higher if pigs have recently been infected with Salmonella. Pigs infected with Salmonella in the late finishing

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phase will have high levels of Salmonella antibodies and are more likely to be carrying Salmonella when they arrive at the abattoir. The meat-juice ELISA test is the most cost-effective method of identifying farms supplying pigs with the highest risk of Salmonella infection in the late finishing phase.

The other alternative would have been to use microbiological culture of on-farm pen samples or of samples taken from pigs in abattoir. All Salmonella isolates have to be reported to DEFRA under the Zoonosis Order. Pigs exposed to Salmonella after leaving the farm could be identified as positives with caecal sampling in the abattoir. There would be a risk of cross-contamination during sampling with microbiological culture tests. This increases the risk of farms being wrongly identified as having a high incidence of Salmonella. No test is perfect but meat-juice ELISA testing avoids the risk of cross-contamination during sampling, and is a rapid, cost-effective herd screening test.

### WHEN WILL PIG PRODUCERS NEED TO TAKE ACTION?

Sampling in abattoirs will start in June 2002. Producers will be assigned an initial ZAP status by July 2003. Most units (c.94 percent) will be allocated to ZAP 1. Only the top 1% of pig units with the highest prevalence of Salmonella antibodies will be classified as ZAP 3 with the next 5% assigned a ZAP 2 status. ZAP 3 and 2 producers will then be required to draw up plans and take action to control the level of Salmonella in their pigs. An advice package will be made available to ZAP 3 and 2 producers. The programme initially allows between a further 9 and 18 months for progress in reducing Salmonella on a particular unit to be demonstrated.

### WHAT WILL HAPPEN TO PRODUCERS WITH PERSISTENT PROBLEMS?

It is proposed that by June 2004 the scheme will be fully incorporated into the Quality Standard Mark. ZAP 1 and 2 levels will be acceptable within the scheme. Should a producer remain consistently in ZAP 3, the meat from their pigs may no longer be eligible to carry the QSM until they can demonstrate an improvement. Other sanctions, including price

adjustments, may be introduced following consultation with producers and processors.

### WHAT ABOUT OUTDOOR HERDS or MULTI-SITE PRODUCTION?

The majority of commercial outdoor herds are breeding herds and control of exposure to Salmonella in such an environment is more difficult. However, the ZAP Salmonella programme is based on monitoring Salmonella exposure in **finished pigs**. Reductions in the level of Salmonella in slaughtered pigs can be achieved through the introduction of control measures for pigs after weaning.

### IS HELP AND ADVICE AVAILABLE?

It is recognised that reducing Salmonella levels on farm may take some time. ZAP 2 and 3 producers will be provided with an on farm Salmonella control advice pack. ZAP 3 producers will be required to develop an action plan. This will be reviewed by that farm's own veterinary surgeon. A list of approved consultants will also be available. ZAP 3 producers will be advised to use these consultants, at their own expense, to review and advise on Salmonella control plans, and to help ensure that improvements are being achieved. Advice is already available in the MAFF Code of Practice for the Prevention and Control of Salmonella on Pig Farms issued to all Assured British Pigs and QMS *Specially Selected Scotch Farm Assured Pigs* members and others at the beginning of 2001.

### DO CONTROL METHODS WORK?

The incidence of Salmonella in pigs in Denmark has halved through their control plan even though they started from a much lower initial baseline. Control plans are tailored for individual farms. Issues including bio-security, hygiene and pest control are common to such plans. The application of good hygiene and effective management should also have a positive effect on the control of endemic diseases such as PMWS.

### HOW MUCH WILL ZAP SALMONELLA COST?

In introducing the ZAP Salmonella monitoring programme, BPEX are acutely aware of the financial pressures that producers have been under for a number of years. It is intended that producers will not be charged for monitoring during the first 3 years. Participating abattoirs have agreed to fund the cost of collecting meat samples from pigs. The Food Standards Agency (FSA) has agreed to provide financial support for the introduction of the scheme. DEFRA will also provide assistance with the development of on farm control strategies. The overriding principle is that the national programme should be delivered in an effective manner and at least cost. Levels of control costs incurred by producers will reflect the level of Salmonella present on individual units.

### CAN THE INDUSTRY AFFORD MORE SCHEMES AT PRESENT?

There is never a good time to introduce a scheme such as a ZAP Salmonella. BPEX are very aware of the difficulties producers are currently facing financially and from pig wasting diseases. However, for the majority of producers the costs of ZAP Salmonella should be negligible. It is intended that ZAP Salmonella monitoring will be delivered at no charge for at least the first 3 years. Where it is necessary to control Salmonella, many of the steps taken such as improved hygiene and bio-security will also benefit producers in other areas such as managing the effects of PMWS/PDNS.

### ARE PROCESSORS ALSO AIMING TO CONTROL SALMONELLA?

Yes, many processors have already introduced HACCP (Hazard Analysis Critical Control Point) procedures to reduce the risk of Salmonella contamination in abattoirs. The Food Standards Agency (FSA) will require all abattoirs to introduce HACCP within the next year. Bacterial counts in abattoirs are also being introduced. Salmonella is an industry wide issue and BPEX believes that all elements of the industry must play their part in reducing the risk from Salmonella in British pig meat.

### **DOES ZAP SALMONELLA HAVE INDUSTRY SUPPORT?**

The ZAP Salmonella programme has the full support of the British Pig Executive (BPEX), which represents producers, processors and retailers involved in the British Pig Industry. The Food Standards Agency (FSA) has also expressed its support for ZAP and is jointly funding the introduction of the scheme. Retailers have been consulted on the principle of introducing a monitoring programme and have been very positive.

### **PROPERLY COOKED PORK DESTROYS SALMONELLA, SO WHAT IS THE POINT?**

As the egg industry found to its cost, it is not acceptable to rely solely on consumers to prepare food in a way that will remove Salmonella. The pig production, processing and distribution industry must take all steps to supply the consumer with a safe and wholesome product. By doing this we will give the consumer reassurance that pork does not need to be overcooked. This will in turn enhance the image of pork as a tender meat retaining a great taste.

### **WILL IMPORTED PORK BE TESTED?**

It is essential that the British pig industry gain proper recognition for its responsible reaction to the threat of Salmonellosis. As already stated Denmark and Ireland already operate schemes similar to the ZAP Salmonella proposal and the Netherlands and Germany are currently introducing monitoring schemes. BPEX will press government for the introduction of testing of all imported pig meat into Britain. The programme will also allow further differentiation of British pig meat, a key element of the BPEX strategy and essential at a time of increasing global competition frequently from low cost countries with different standards of production.

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