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AGRICULTURE & INNOVATION

## Animal husbandry Reduction of antibiotic use in the pig sector

### How to reduce the use of antibiotic treatments in the pig sector?

This question was addressed by the EIP-AGRI Focus group on animal husbandry, consisting of 20 experts from different countries, including farmers, researchers and advisers. Antibiotics have been a key tool against infectious diseases for decades in human and animal populations. But bacteria naturally develop resistance to antibiotics and there is evidence that global levels of resistance are increasing, in part due to the widespread use of antibiotics in human and animal medicine. This may impair treatment efficacy and potentially lead to therapeutic failures.

In swine rearing systems the need for antibiotics is heavily influenced by non-infectious factors, such as biosecurity (a set of preventive measures designed to reduce the risk of transmission of infectious diseases), the environment provided for the pigs, management and feeding practices, and their direct links to animal health. Preventive non-medication actions can therefore contribute to reducing disease risk and thus the use of antibiotics.

The group identified three main interrelated areas of intervention for the reduction of antibiotic use:

- ▶ **General enhancement of animal health and welfare** which includes results such as better biosecurity, management and husbandry, facility design and management, and training of personnel, veterinarians and advisers.
- ▶ **Specific alternatives to antibiotics** including vaccination, breeding and feeding approaches: a number of feed supplements and techniques may for instance promote pig health, these include changing the structure and viscosity of pig feed to reduce the risk of Salmonella infections.
- ▶ **Changing attitudes, habits and human behaviour and improving information dissemination** form the basis for a more balanced and sustainable use of antibiotics: improving the education of farmers, veterinarians and advisers and giving accurate and positive information can be a first step in the right direction.

*"The key to reducing the need for antibiotics in the pig sector is improving pig health."*

- Christelle Fablet (France), coordinating expert from the EIP-AGRI Focus Group on Animal husbandry - Reduction of antibiotic use in the pig sector -

# Animal husbandry

## Reduction of antibiotic use in the pig sector

### Ideas for Operational Groups

- ▶ Testing and adapting easy-to-use decision support tools, specifically interactive tools for farmers and farm advisers to help them both assess disease risks and see which management decisions will most likely improve pig health on the farm.
- ▶ Adapting Precision Livestock Farming (PLF) technology, which allows a targeted use of antibiotics so that only animals that are actually sick need to be treated. The technology will need to be adapted to the local situation so it will be feasible and economically viable.
- ▶ Practical innovation to provide adjustable pig pen sizes and flexible facilities, allowing litters to stay together during their lifetime. New technical approaches to improve piglet behaviour and reduce stress should be evaluated in different field conditions (infrared radiation, alignment within pen, design).
- ▶ Testing innovative livestock facilities and systems that promote normal pig behaviour and therefore better welfare. These should also contribute to better standards of hygiene, improve the working conditions of stockpersons, and reduce the environmental footprint of pig production systems.
- ▶ Testing the effectiveness of new cleaning and disinfection products and equipment at farm level, with adequate evidence, such as quantification of microorganisms, dust and emissions.
- ▶ Developing aerosolization procedures using innovative techniques to produce small disinfectant droplets in air which will not cause health hazards, to disinfect animal housing.

### Research needs

- ▶ Developing easy-to-use, interactive decision support tools for farmers and farm advisers (see above), using standardised risk-based analysis. Experts from different fields should work together on this.
- ▶ Increasing the understanding of the pig immune system.
- ▶ Research on feeding approaches and modification of microbiota.
- ▶ Cost-benefit and efficacy analyses on the relationships between biosecurity, management, rearing conditions, herd health and use of antibiotics on farm to evaluate the economic viability of proposed improvements.
- ▶ Description of the causes of antibiotic prescribing habits in different countries
- ▶ Development and optimisation of software platforms for data collection and information exchange.
- ▶ Gaining insight into social factors affecting the acceptance of technological innovations that would reduce the need for antibiotics on farms.

### More ideas for Operational Groups and research needs available in the Focus Group report



#### More information

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|-------------------------------------|--|---|
| <a href="#">Focus Group webpage</a> | <a href="#">EIP-AGRI Brochure on Reducing antibiotics in pig farming</a><br>(EN - PL - PT) | Inspirational ideas:<br>- <a href="#">Cutting antibiotic use in pig farming</a><br>- <a href="#">Adding a touch of spice to improve animal health</a> |
| <a href="#">Focus Group report</a>  | <a href="#">EIP-AGRI workshop on biosecurity</a>   |   |

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