EU PiG 2020 Grand Prix

Below are the details for the Top 10 Grand Prix entries under the theme of 'Health Management' and the two challenges, 'Use of slaughter data to improve health outcomes' and 'African Swine Fever (ASF) biosecurity measures'. These have been selected by the Thematic group.

Challenge: Use of slaughter data to improve health outcomes

Title of Best Practice: IQ-Agrar PORTAL: Online portal to support inter-organizational quality management in agriculture sector
Country: Germany
Type of Farm: Finishing/Porking

General description
"IQ-Agrar PORTAL" is the internet portal for analysis of data from marketing, animal health, farm management and quality assurance in agriculture. In addition to basic analysis of slaughter data, other sources of information are connected. The basis is the analysis of the approximately 30 million processed data (classification of the carcasses, health information) per year. User specific analysis options and descriptive graphics are available. Individual filter options are given, based on the latest IT-Technologies. To detect the potential in weight sorting losses, it is possible to analyse single slaughter dates, as well as delivery periods for management and marketing decisions. Alarm lists, market information and monitoring information are shown in Widgets for quick overviews. For quality assurance, customers receive detailed information on antibiotics, salmonella or residue monitoring. Auditing management information, aspects of animal welfare and individual labels are presented.
Link to your website: https://portal.iq-agrar.de/login

Costs and benefits
To get the possibility for proactive management, users can retrieve forecast analysis based on predictive calculation and in future analysis of profitability. Potential in management and marketing is revealed by scientific based analysis - higher monetary proceeds by optimized processes based on the analysis of the data - higher profits by virtue of optimal utilization of the slaughter data. Increasing animal health by using the portal management information will lead to less findings at the slaughterhouse by the veterinary. (Every finding leads to average 50g decreased daily weight gain) - Standard losses based on 25% under- and overweight slaughter pigs will cost about 0,10€ per kg slaughter weight. Using this information, sorting losses can be easily reduced by half.

Transnational impact
- Support inter-organizational quality management
- Connection between the two fields of slaughter data and quality assurance
- Market advantage for those, who use the Portal

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727933.

Title of Best Practise: Ceva Lung Program: A web tool to monitor the pulmonary health of my pigs
Country: France
Type of Farm: Piglet rearing Sow Farm Finishing/Porking

General description
The lungs of my slaughtered pigs are controlled at the slaughterhouse. They check pneumonia and pleuritis lesions, with a lung lesion scoring system (scores from 0 - best to 4 - worst). The score is recorded on a web tool: «Ceva Lung Program»-CLP. It allows processing, summarizing the results and sending the final data. The vet has free access to the data and shows them to me. This tool helps me to follow the pulmonary health of pigs. We can evaluate the efficacy of new vaccination protocols. In late 2017, I faced respiratory troubles on my young fatteners and an increasing number of runts. We had to give antibiotics, but it was not a sustainable way to solve this sanitary problem. So, we implemented a new vaccination protocol and it was a success. Improvements were seen in the farm, but also at the slaughterhouse. The CLP data established that the new vaccination protocol led to a highest number of lungs without pneumonia lesions and to a low and stable mean pneumonia score (≤ 1.32).

Costs and benefits
Pneumonia is a lesion causing economic losses. A sick animal has a reduced Daily Weight Gain and an increased Feed Conversion Ratio. Based on scientific knowledge, the CLP tool calculates an estimated economical incidence depending on the lung scores. For each scoring recorded in the CLP tool, my veterinarian and I, know the economic losses induced by the pneumonia lesions scored. Thus, in my farm, pneumonia caused a mean loss of 1.2€/slaughtered pig in 2017, 1.1€ in 2018 and only 0.2€ in 2019. With this information I can estimate the return of investment of new measurements, like the implementation of a new vaccination protocol.

Transnational impact
The CLP application is in free-access and you can download it on a laptop, IOS and Android phone. A personal account has to be created for you by the local CEVA Animal Health team (present in 110 countries all over the world). You have an adapted access to the CLP data, depending on your job (veterinarian, lung scoring operator). For example, a veterinarian will have access to the lung score reports of all the farms that he follows. For farmers, Ceva Lung Program reports are coming through the veterinarian. The vet uses them to monitor the respiratory health of the fatteners. So, the Ceva Lung Program can be used all over Europe and can bring useful and easy-to-understand data about the pulmonary health of pigs.

Title of Best Practice: Use of slaughter data to develop dashboard system to improve pig herd health
Country: Ireland
Type of Farm: Piglet Rearing, Sow Farm, Finishing/Porking

General description
Feedback data (lung and liver) from the slaughter plant was incorporated into a dashboard system to look at various production and management parameters on the farm including: ePM herd performance figures, biosecurity assessment, pluck (lungs and liver), tail check and antimicrobial benchmarking. The main variables used for the dashboard are imported into an excel database used to produce a report which allows for benchmarking and setting targets. The main identified issue was the high levels of pleurisy and pericarditis. which the farmer did not realise were a problem. Thus, the dashboard changed his focus into control of these by better batch management, reduced

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mixing and creating separated streams for weak pigs. This resulted in improved performance via improved pig health and associated reduced use of antibiotics. Weaner ADG has increased from 433 to 486g/day.
Link to your website: www.teagasc.ie/pigs

Costs and benefits
The cost for the farmer is almost zero. These are activities normally carried out by the vet or advisor, but the integration of the information allows for benchmarking and setting targets. The particular benefits can be calculated by the Teagasc Advisor but in the case of this farmer, the main identified issue was the high levels of pleurisy and pericarditis. He thought he was not that bad in this area. The main benefit was providing information which enabled the farmer to focus his efforts where the problem was (a problem that he had not considered until he used the dashboard system). This has resulted in improved herd performance via improved pig health and associated reduced use of antibiotics. Weaner ADG has increased from 433 to 486g/day.

Transnational impact
Can be applied across all countries.

Title of Best Practice: New slaughter data report helps to improve production
Country: Finland
Type of Farm: Finishing/Porking

General description
The production report and slaughter data give important information about pig health and management success. We follow the report routinely. Our biggest advantage of it has been to optimize food setting. HK Scan renewed the report in the beginning of 2019 and finishing farms get it four times a year. Graphics show lean percentage and weight distribution and how they correlate. Average weight and lean percentage are also mentioned. In comparison to slaughter data about joint infections, etc, there is also a completely new parameter, “Completely healthy pigs”. The report also shows the amount of different meat inspection lesions and compares the amount to the national average of HK Scan. Our farm is often in the best or second-best quarter. The report also shows the loss of income due to lesions.

Costs and benefits
On our farm we read the report every 3 months. After each batch the results are accessible online. The report shows that the investments in animal welfare and early disease prevention have paid off, since we have less lesions than the HK Scan average. When meat inspection and slaughter data is measured and followed, we can change it towards the better and react to health and management problems fast. But since our animals are so healthy, we mostly use it to adjust feeding.

Transnational impact
The most important goal of the renewed report has been to increase the farmer’s knowledge of their own production, animal health and welfare. By increasing knowledge of animal welfare and slaughter data we can develop the whole pig industry. By increasing animal welfare, we can decrease meat inspection lesions – both crucial nationally and internationally in the pig industry.

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Title of Best Practice: Use of slaughter data
Country: Finland
Type of Farm: Sow Farm Finishing/Porking

General description
The Pirteä Porsas piglet production farm originates from the nineties and is situated in south western Finland. In 2019 a massive modernisation project was carried out. The farm is now in antibiotic free production and it is fully integrated with its owner´s finishing farms. There is a regular and detailed health, quality and economic report from the co-operative contract slaughterhouse Atria plc. The sow farm analyses these weekly and quarterly reports from the finishing farms on a regular basis. Important KPIs: mortality, partial and total rejects (detailed with actual cause), % tail bitten pigs, rejected kg and €, cumulative and mean value of rejects, daily gain, growing capacity utilisation (rotation speed per pig place), no. of AB treated/-free pigs, comparison of results of different finishing farms within all Atria group and between different farms with same piglet supplier
Link to your website: www.ett.fi

Costs and benefits
Big variations in production efficacy and rejection losses between farms. For example, the biggest of the owners finishing farms houses over 5000 finishers and in farms of this size there is differences in annual value of mortality, total and partial rejects from 5000 to 70 000€. Production efficacy variations between 2,8 to 4,2 finisher pigs per place per year, daily gain between 920 to almost 1200g/d. These differences sum up to cost differences up to 10€/slaughter pig.

Transnational impact
The pork production chain should use the production data much more detailed and effectively to gain a much better cost efficacy. Good examples of this demonstrate the possibilities. Addition to the 'General Description': --> KPI reports are used to manage health and production issues (vaccinations, feeding, general production management etc.) on sow farm. The farm has 1750 sows in production. The number of weaned piglets/sow/year is 33 and the number of weaned piglets/litter is 13.75.

Challenge: African Swine Fever (ASF) biosecurity measures

Title of Best Practice: National TV Programme to highlight risk of ASF entering Ireland
Country: Ireland
Type of farm: Piglet Rearing, Sow Farm, Finishing/Porking

General description
Challenge: Prevention of entrance of African Swine fever into Ireland.
Innovation: Teagasc Pig Development Department suggested that the TV show, Ear to the Ground, would run a programme to highlight the risk of ASF entering Ireland. Teagasc discussed the topic with the TV show research staff, gave background information and suggested a farm for interview. The show also visited Dublin airport to interview DAFM staff and see the sniffer dog in action. The TV show has a weekly viewership of more than 400,000 people. It resulted in increased awareness, especially amongst non-farming community, of the risks of introducing ASF into Ireland.

Cost benefit
Increased awareness, especially amongst non-farming community, of the risks of introducing ASF into Ireland.

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Transnational impact
Any country can adopt this idea.

Title of Best Practice: Mortality management: in situ incineration
Country: Spain
Type of farm: Sow Farm

General description
We faced biosecurity problems during the removal of dead animals in the designated lorries. The aim was to minimize the contamination risk as well as to improve the farm biosecurity by the on-farm management of dead pigs. We implemented a system of in situ incineration. We installed the Addfield TB incinerator that has a capacity of 1300kg and works with gas, 4 times a week. This system was implemented in order to avoid the transportation of the dead animals from one farm to the other and avoid the storage of the corpses inside the farm. The main values are: 100% vertical biosecurity as the incineration process eliminates all contamination vectors; Complete destruction of viruses and bacteria; Improvement of farm health; More autonomy and cost reduction: no need to hire an insurance; Production of inorganic waste, which can be used as inorganic fertilizer; the incineration in situ avoids the storage of dead pigs and the presence of other animals such as rodent and predators.

Cost benefit
The disease incidence reduces. Therefore, the productive rates improve. The mortality rate reduces. There is an economical benefit due to: - The reduction of diseases and the high costs related to them (treatment, food…) - The autonomy of the mortality management: the removal of dead pigs costs 0.17-0.34 euros/kg whiles the incineration cost is about 0.05-0.087 euros/kg. All the processes lasted about 4 months. The total costs were 70.000 euros. Life span (vida útil?): 30 years. The main cost is the gas consumption, however, thanks to the chamber tightness, the gas consumption is kept to a minimum. The veterinary intervention can be reduced due to the health improvement of the farm. Apart from the direct benefit, the implementation of an on-farm incineration system like the Addfield TB, allows to reduce the gross production cost resulting in a better gross margin.

Transnational impact
The awareness of the pig sector about the importance of biosecurity is fundamental, especially if we take into account all the pathogens that are circulating and the threat of the African Swine Fever. The incineration in situ represents a true commitment to preserve the animal health not only of our farm but also the health and performance of the adjacent ones, since the system minimizes the risk of transmitting pathogens from one farm to the other.

Title of Best Practice: DrySyst: Truck dry disinfection
Country: Spain
Type of farm: Piglet Rearing, Sow Farm, Finishing/Porking

General description
The challenge was to improve the biosecurity against ASF and other pathogens (PRRS, Salmonella, E.coli, DEP…) at the moment of animal transportation. Focusing the biosecurity concept exclusively inside the farm is a mistake, because truck movements are one of the most important sources of risk of disease entry for farms. The company implemented a truck thermo-assisted disinfection system called DrySyst. The process divides the disinfection in 3 different parts: trailer, wheels and chassis and cabin. The process takes place inside an expandable tunnel: cabin of the truck is manually

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disinfected following the PED disinfection protocol; lower part of the truck is disinfected from the beginning of the process to produce a high penetration effect. The system is connected to the truck and pumps hot air into the container until it reaches 75 °C for 15 minutes. The whole process takes about 30 minutes and is electronically certified. The certificate can be received remotely in real time.

Cost benefit

By increasing biosecurity, the entry of diseases (digestive and respiratory) on farms is reduced, and, therefore, the use of antibiotics is also reduced. Once the disinfection system is implemented, the farm's disease reinfection cycle is broadened from 1.5 years to 3 years, approximately. Finally, the farm productivity (less diseases and mortality) and the meat quality (food safety) are improved. Investment on innovative biosecurity systems which reduce the use of water and time spent by personnel, has obvious benefits on increasing biosecurity and, therefore, reducing the risk of disease outbreaks. Equipment:

- Electricity consumed: 8-10kW/h
- Diesel consumed: 30L/h
- Propane consumed: 37Kg/h

Veterinary costs are reduced since the disease incidence is decreased.

Transnational impact

The technology can be easily implemented in other countries. Biosecurity is an important issue at a global scale. During long journeys of transportation biosecurity is at risk on several occasions.

Title of Best Practice: How to protect outdoor pigs against contact with wild boars

Country: The Netherlands

Type of farm: Piglet Rearing, Sow Farm, Finishing/Porking

General description

The "meadow pigs" are kept outside. The plan was to keep the pigs including nature. The pigs kept in the meadows must be protected from contact with wild boars. The innovation is a systematic research project using: Double fencing (electricity), Use of cameras (against wild boar, against feeding by visitors), Agreements with hunters to locate and hunt wild boar in the nearby region, Night cameras, The use of a wildlife cage, Extra housing in case of threat/appearance of wild boar, General surveillance. Innovation is the combination of measures. The research is done by the farmer, the HAS and the government. Government, animal welfare organizations and consumer groups are interested in nature-inclusive production. The research is still ongoing. The first results are promising. That is why we want to present this initiative. Preventing contact between wild boar and pigs kept outdoors is a major challenge. Much can be learned from the results of the initiative and the research.

Cost benefit

The biosecurity measures do not directly bring better results or lower production costs. The calculation of the extra costs has not yet been completed. There will be extra costs. Part of the research is looking for the best and most cost-effective measurements. The biosecurity measures do not incur additional costs, but are essential for the surveillance of the concept Meadow Meat ELSHORSTPUUR.

Transnational impact

A good package of measures preventing contact between held pigs and wild boar are important to prevent infections with ASF or other diseases in outdoor pigs.

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Title of Best Practice: Wildlife cages and collaboration with hunters
Country: The Netherlands
Type of farm: Finishing/Porking

General description

In 2008, the first wild boars were seen. The farmer decided to talk with governments, hunters and nature associations to stop the wild boar. In consultation with governments, hunters and nature associations, he decided to build a wildlife cage. In the beginning, the farmer sat alone at the table with governments, hunters and nature associations, now almost all farmers in the region have joined their own dedicated foundation (Land users Leenderbos and surroundings). The first cage costs €300. The two cages became a mobile cage of €500. The newest model costs €850 and can be expanded with a new system. This system costs €3.500. If there is an animal within the reach of the cage, the farmer gets a signal. He can watch live images via camera and drop the cage if necessary. The wildlife cage was a greater success than expected. In one year, seventy animals were caught with it. The only thing that would work better is bigger cages.

Cost benefit

Preventing the pigs from becoming infected with animals will also reduce health costs.

Transnational impact

Placing cages does not put any pressure on the area, think of recreation no danger for flying bullets by drifting hunts, etc., but also disturbance and dispersal of populations of boar, the cage does its job without hunting animals.

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