

Editor: Ciarán Carroll

Welcome to the June Newsletter

Ciarán Carroll



Welcome to the June edition of our monthly newsletter. Pig prices continue to improve and as the uncertainty associated with the ASF problem in China continues there's expectation of more to come. June has been busy for the Pig Development Department. The Teagasc ePM Herd Performance 2018 data has been completed, with some improvements in born alive, finisher sale weights, feed conversion efficiency and kg pig meat produced per sow per year. The report is gone to print and will be circulated very soon along with an infographic summarising the key performance indicators, which also includes a section for you to benchmark your farm against the National Average figures. Gerard McCutcheon's article in this newsletter gives an overview of the 2018 performance and highlights how far we've come in the past 18 years.

Finally, this month sees the retirement of Henry Allen, the longest serving member of the PDD. Not many of you will know Henry, but he has worked in our pig research facility for 43 years, carrying out work that ensures our research programme is world class. A brilliant stockperson, with a great eye for detail, Henry has been an invaluable member of our team. He has a great rapport with researchers and students, and has guided numerous students through their projects, too many to remember at this stage! He will be sorely missed. We wish Henry the very best of everything for a happy and healthy retirement.

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Performance on Irish Pig Farms

Gerard McCutcheon, Oak Park

The Teagasc e Profit Monitor (ePM) compiles a Group Report for the entire “national pig herd” each year. This article shows the average performance on Irish pig units in 2018. Benchmarking your performance allows producers see how your farm is performing when compared to the average and top producers.

The data in the “national pig herd” comprises the data from farms that currently have records within the ePM system for each particular year. The data in 2018 was from 104 farms (with an average of 762 sows per herd). The “national pig herd” performance is closely screened to ensure that any “outlier” results are excluded to prevent individual performance from distorting the average figures. For example, every effort is made to ensure the “weaning to sale” figures do not include herds that are selling more than 5% of their pigs as weaners as this could distort the feed conversion efficiency (FCE) figures.

Table 1 below shows the Average number of pigs produced per sow per year on Irish herds keeping records on Teagasc ePM during 2018. The born alive



has risen steadily with a 24% increase when 2018 is compared to 2000 performance. The improved performance has contributed to the 25% increase in pigs produced per sow per year in 2018 relative to 2000.

Table 1: Pigs produced per sow per year from 2000 and 2018

	2000	2018
Litters/sow/year	2.29	2.34
Born Alive/Litter	10.85	13.69
Piglet Mortality %	9.0	11.1
Weaner Mortality %	2.6	2.9
Finisher Mortality %	2.3	2.43
Pigs Produced/Sow/Year	21.5	26.9

(Source: Teagasc ePM)

Table 2 shows the performance based upon feed conversion of pigs from weaning to sale over the same years. There is an increase in live sale weight of 22.5 kg over the eighteen year period. The average daily gain from weaning to sale has improved by 133g per day over the same period.

The combined benefit of getting more pigs produced and the heavier weights at sale is shown in Table 3. The carcass weight sold per sow per year is 58%

higher in 2018 compared to 2000. This is a substantial increase in performance mainly due to advances in animal genetics, nutrition, healthcare and overall management.

All farms should measure their own performance and not be afraid to benchmark their results against other producers. All farms will shortly receive the Pig Herd. If you do not receive it please contact your Teagasc Specialist Pig Advisor.

Table 2: FCE Weaning to Sale in 2000 and 2018

	2000	2018
Liveweight at sale (kg)	90.1	112.6
Deadweight at sale (kg)	68.1	86.2
ADG (g)	584	717
Feed Conversion Efficiency	2.37	2.43

(Source: Teagasc ePM)

Table 3: Pigmeat produced and FCE Weaning to Sale in 2000 and 2018

	2000	2018
Carcass weight sold / sow / year (kg) *	1464	2319
Total feed per sow (kg)	5358	8226
kg feed per kg of Carcass	3.66	3.55

*This is the pigs produced /sow/year multiplied by the average deadweight at sale.

Antimicrobial Resistant Genes in Spanish pigs: the Colistin Story

Laura Boyle, Moorepark

In March this year I attended an international course on antimicrobial resistance (AMR) run by the Food and Agric. Organisation (FAO) and the World Organisation for animal health (OIE) in Zaragoza, Spain.

AMR is a major threat to society and it is predicted that in 2050 10 million people per annum will die from it. Currently 70k people die every year because the bacteria or microbe they are infected with is resistant to the antimicrobial (AM) available to treat the disease.

Things are so bad that doctors have had to resort to using toxic AM to treat certain diseases in humans. Colistin is one such agent. While colistin is one of the few AM commercialized in both human and veterinary medicine it was rarely or never used to treat disease in humans until recently. This is because of its toxicity to the human kidneys. However, colistin has been extensively used since the 1960s in food animals, and particularly in pigs with different purposes: therapeutically, prophylactically, and growth promotion. Food producing animals don't live long enough for the detrimental effects of colistin on the kidneys to manifest.

We learned that the use of colistin in pig production was widespread in Spain to prevent/treat enteric disease around the time

of weaning. However, discovery of a mobile colistin resistant gene (*mcr-1*) in Spanish pigs changed all that. MCR genes render a range of common bacteria, including *E. coli*, resistant to the carbapenems family of antibiotics. These are critically important antibiotics for human medicine that are not used in veterinary medicine. Because of AMR, carbapenems have become a drug of last resort for certain infections. These pose a serious threat for hospitalized and immunocompromised people, like cancer patients.



One of the lecturers described the surprise amongst Spanish medical doctors to hear of the widespread and routine use of colistin in Spanish pig production. He suggested that this

'silo' use of AMs, or the lack of communication between the veterinary and medical professions, is a major reason for the difficulty in tackling the AMR problem. He also referenced the blame game between agriculture and hospitals which doesn't help. Learning from these findings, the Spanish National Action Plan (NAP) on AMR was developed and is promoted by the Spanish Agency of Medicine and Sanitary Products (AEMPS). Crucially, this organisation represents drug use in medicine and agriculture equally. On 1st December 2016, a Declaration of Accession to the Agreement for the Reduction of Colistin Consumption in Pigs was signed, within the Spanish NAP.

Spanish pig producers quickly reduced colistin use by 82%. The reduction in colistin use was accompanied by a dramatic reduction in the resistant gene. Unfortunately, a reduction in AM use is not always followed by such a clear cut reduction in the resistant gene. This can be a cause for complacency amongst prescribers and users of AM and further complicates the fight against AMR.

Furthermore, while associations between AM use and resistance are clear, causality is difficult to prove. There is certainty that the *mcr-1* gene is selected in animals and pig production has been singled out as the principal reservoir for colistin resistance spread. Hence when *mcr* genes are found in humans they have certainly come from animals and, as such, act as a marker for

human and animal contact. An opposite example where the pig was blamed in the wrong is the *armA* gene, which renders all of a particular family of AM, the aminoglycosides (e.g. streptomycin, neomycin), inactive. This gene was first found in pigs in Spain and people were quick to blame pig production. However, following intense sampling of humans and animals in Europe all isolates of the gene were traced back to a hospital in Poland. Here 5 times more next generation aminoglycosides were being used than necessary. So in this case the rogue resistant gene was selected in humans and when found in animals, there was certainty that it had come from overuse of AM in human medicine. There was no noticeable increase in pig morbidity or mortality following the reduction in colistin use in Spain. This was likely because of improvements made at farm level after several years of investment and consolidation in the industry. The use of colistin was largely cultural, it had become a habit, which like any habit was difficult to break. Interviews with Irish pig producers about AM use in recent years reveal reluctance, and a degree of fear of changing something that "we've always done". Assuming that housing and husbandry practices are in order, it is possible that, like in Spain, there is great potential to reduce AM use in the Irish pig industry. The risk AMR poses to our families should be enough of an incentive to at least re-evaluate the use of in-feed medication on the farm.

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Education Update

The Teagasc Pig Farm Managers course will finish over the next few months and has been recognized as a great success by those involved. We are now considering the start of a new level 5 Certificate in Agriculture (Pig Production) in September 2019. Previously this course has been conducted jointly by the Pig Development Department and Clonakilty and Ballyhaise Agricultural Colleges to ensure pig farm operatives are trained to the highest technical standards of animal husbandry. This course is a component award made up of a number of Level 5 modules relating to pig husbandry management that are accredited by QQI. The course will consist of a combination of lectures delivered by the Pig Development Department, Agricultural College lecturers and external guest speakers as well as group discussions, day trips and team work activities. Delivery of this course is subject to demand, so if you are interested or have staff members who might be interested please contact your Teagasc Specialist Pig Development Officer to register.

African Swine Fever

At this stage everyone involved in the pig sector here is aware of this serious threat to pig production. This

devastating disease has spread beyond China to other parts of Asia. It is endemic in parts of Russia and other Eastern European countries. We continue to observe the situation in Belgium which to date is thankfully being contained to the specific area it broke in last year. We cannot underestimate the cost of this disease to our industry if it were to break here. Education and vigilance is key. We must ensure that staff are aware of what to look out for and what we must do to prevent this problem. Do not sell weaners to members of the public who may feed household waste, including meat, to pigs. Many are unaware that this practice of feeding swill is illegal. As the holiday season kicks off it is also important that we educate our neighbours (farming and non-farming). One of the biggest threats to the Irish pig sector is the introduction of this disease via contaminated meat. It is imperative that people (staff and neighbours) travelling abroad, in particular to Eastern European countries, do not bring back meat products. DAFM have worked well to introduce warning signage at ports and airports but we have a duty to spread the word and create awareness so that we keep ASF out of Ireland.



For more information

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