



High androstenone in Norwegian immunocastrates and the effect on vaccination rate and farmer attitudes

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BACKGROUND

In Norway, almost all male piglets are surgically castrated under local anesthesia when they are a few days old, and receive long-acting analgesics during the procedure to reduce post-surgery pain. However, from 2012, pig producers have had the option to select vaccination against boar taint as an alternative to surgical castration. Since preventing boar tainted meat from reaching the consumer is of great importance for the pork meat industry, Norwegian pig abattoirs are part of a sampling program where at least 1% of the immunocastrated (IC) pigs that are slaughtered must be tested for androstenone. Any samples measuring above the 1 ppm androstenone threshold results in a substantial fine for the pig producer.

MATERIALS

Data collected from several Norwegian abattoirs provided information on the number of IC pigs slaughtered yearly, the number of samples collected for androstenone measurements as well as the number of samples measuring above the 1ppm threshold.

RESULTS

From 2014 to 2016 there was a substantial increase in the number of vaccinated pigs in Norway; from a total of 10 629 IC pigs in 2014 to a total of 46 857 IC pigs in 2016. However, in 2017 the number of IC pigs in Norway considerably decreased, to 34 655 IC pigs, which is approximately 12 000 fewer pigs than in the previous year (Table 1). Most IC pigs in Norway are slaughtered in the northern parts of the country, with Nord-Trøndelag (NT) and Nordland (N) counties accounting for approximately 65% of the slaughtered IC pig population (Fig. 1). As per the required sampling program, 1,6% of the IC pigs slaughtered in 2016 were measured for androstenone. Of the samples collected, 27,5% had androstenone values above the 1ppm threshold (Fig. 2). Based on data available to date for 2017*, 1,0% of IC pigs slaughtered have been sampled for androstenone, and of these, 29% had androstenone values above 1ppm (Fig. 2). The counties of Nord-Trøndelag and Nordland had the highest percentage of collected samples above 1ppm androstenone in 2016 and also in 2017, as shown in figure 1.

*Numbers for 2017 are not yet finalized

Figure 1. Geographical distribution of slaughtered IC pigs in Norway in 2017. Percentages show number of IC pigs with androstenone above the 1ppm threshold.

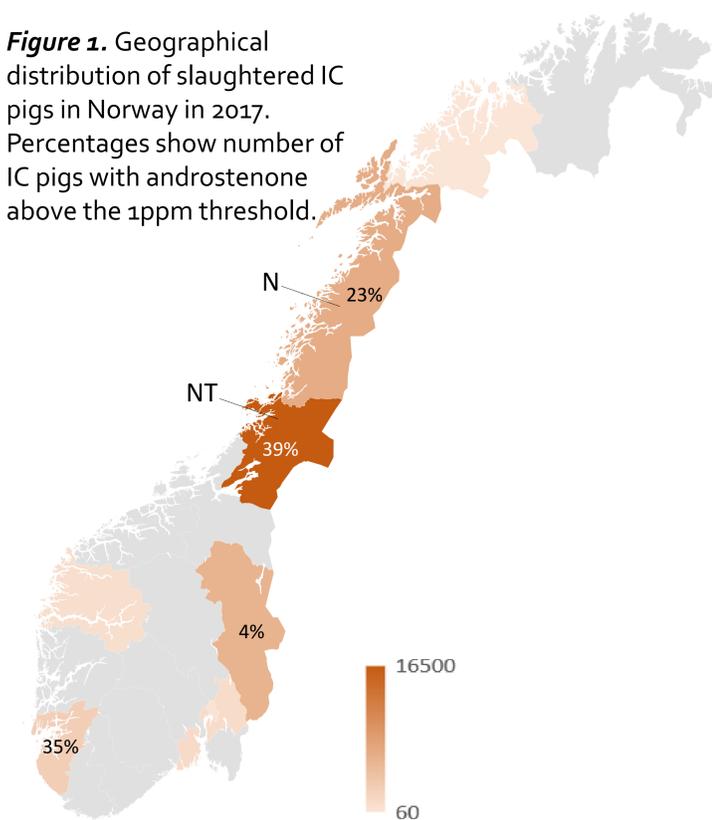


Table 1. Number of IC pigs slaughtered in Norway from 2014 to 2017.

	2014	2015	2016	2017
Total number of IC pigs slaughtered	10 629	38 029	46 857	34 655
Number of IC pigs in sample pool for androstenone measurements (Percent of total number)	10 629 (100%)	37 404 (98%)	42 842 (91%)	33 294 (96%)

DISCUSSION

Although many Norwegian pig producers have tried vaccinating male pigs against boar taint, the declining number of IC pigs slaughtered in 2017, as compared to 2016, indicate that many of these producers eventually return to surgical castration. The reason behind this decline in IC pigs is not clear, but may be connected to the high number of IC pigs that test positive for androstenone above the 1 ppm threshold, and the sanctions placed on pigs above threshold. The fine on samples measuring above the 1 ppm androstenone threshold was initially set at 25 000 NOK (approx. €2500) per positive sample, but has since been reduced to 10 000 NOK (approx. €1000) per pig in 2013 and again to 3000 NOK (approx. €300) per pig in 2015. In abattoirs that collect samples for the androstenone sampling program, testicle size on IC pigs are often used as a quick-measure for choosing which animals to sample. However, about 10% of immunocastrated pigs have such large testicles at slaughter that it causes doubt as to whether the vaccination has been effective. In several of these findings, the industry considers it well documented that the vaccine in fact has been used in accordance with regulations and recommendations.

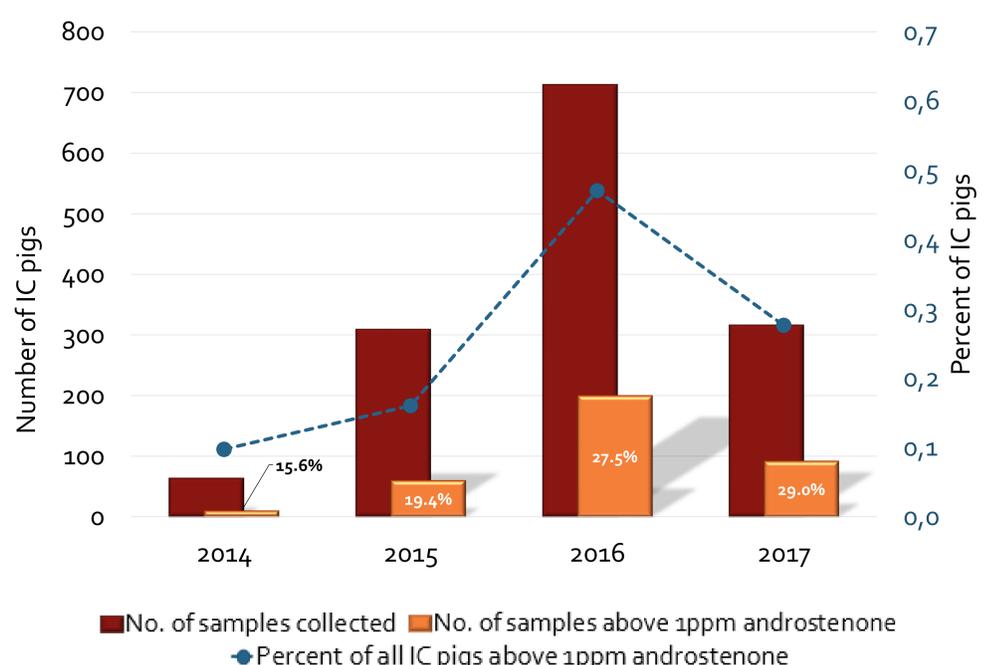


Figure 2. Number of IC pigs tested for androstenone and the percentage of IC pigs that measured above the 1ppm threshold.