Food chain information - data based recommendations for a standardised "relevant period of time" within all EU member states

Meekenken B.1, Papp J.1, Pingen S.1, Schill F.1, Loreck K.2, Hille K.2, Sartison D.3, Ertugrul H.3, Hommerich K.3, Fortenbacher S.3, Kreienbrock L.3, Freie Universität Berlin, Institute of Food Safety and Food Hygiene, Berlin, Germany, 1University of Veterinary Medicine Hannover, Institute for Food Quality and Food Safety, Hannover, Germany, 2University of Veterinary Medicine Hannover, Institute for Biometry, Epidemiology and Information Processing, Hannover, Germany

Introduction
As part of the food chain information, the farmer has to inform about administered veterinary medicinal products with withdrawal periods greater than zero within a “relevant period of time” before slaughter. This time period, which is not yet defined uniformly within the EU, is fixed at seven days for all farm animal species except for broilers in Germany.

Methods
Within the project “Survey on the treatment of certain farm animal species (in turkeys and pigs [rearing and fattening] and fattening cattle including fattening calves) with veterinary medicinal products with regard to the food chain information, 2nd stage” (grant 2815HS008) data on the usage of veterinary medicinal products with withdrawal periods greater than zero and on the slaughter check findings have been collected and analysed from 43 German fattening pig farms.

Results
The “treatment-free period” and the “withdrawal free period before slaughter” have proved to be particularly meaningful for answering the question of a species specific adaptation of the “relevant period” within the food chain information according to Reg. (EU) No. 853/2004. The median for the shortest withdrawal period before slaughtering is 71 days and the 5% percentile of this shortest waiting time before slaughter is 24 days. On the basis of these data, for fattening pigs it is recommended to maintain the “relevant period” at seven days.

Conclusions
The presented recommendations for the included farm animals species are an essential part of the political discourse on the definition of an EU-wide uniform “relevant period per animal species” as they were derived on the basis of data representative for Germany and other countries with comparable agricultural structures.

ANIMAL WELFARE

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The effect of inulin-feed and improved housing conditions on boar taint reduction
Pinto R.1, Reis N.1, Barbosa C.1, Vaz-Velho M.1, Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal, 1Faculdade de Farmácia da Universidade do Porto, Lav-Requnte, Porto, Portugal, 2CISAS-Centre for Research and Development in AgriFood Systems and Sustainability, Viana do Castelo, Portugal

Introduction
The potential ban on surgical castration in Europe is turning a major advantage of this practice, the elimination of boar taint, into a big challenge for pig industry (Meinert et al., 2017). Raising entire male pigs has some economic advantages as boars possess the advantage of superior growth over castrates, generally leaner carcasses, and compared to castrates less feed is needed in order to achieve the same final weight (Morlein et al., 2015; Wauters et al., 2017). Boar taint is described as an unpleasant odour which becomes especially intense when pork is cooked (Mathur et al., 2012), and is mainly associated with the presence of skatole and androstenone. Skatole (3-methylindole) is a metabolite derived from the amino acid tryptophan produced in the lower gut by intestinal bacterial flora, and androstenone (5α-androst-16-en-3-one) is a steroid produced in the testis (Aldal et al., 2005). Introduction of functional ingredients in feed can reduce boar taint. Aluwe et al., (2013), Backus et al., (2016), Byrne et al., (2008) reported that inulin was effective in the reduction of the skatole’s concentration in the hindgut Housing conditions and genetic selection can also have a favourable effect on boar taint reduction (Backus et al., 2016).

Methods
Sixty entire male pigs (progeny of Large White x Landrace gilts sired by Pietrain boars) were raised under controlled housing and feeding conditions in order to determine its effects on boar taint content. Inulin was added to feed 48 days prior to slaughter in three different levels, combined with two housing conditions - normal and improved housing, which consisted in a larger area, easier access to water and environmental enrichment accessories, making a total of 6 sampling groups (Table 1). A quantitative descriptive sensory analysis was performed by 11 trained panellists in two sessions, assessing odour and flavour of skatole and androstenone, on a 1 to 10 scale. A total of eight coded samples, with the six conditions and two replicates to evaluate repeatability. Hardness (Texture analyser), pH, moisture content and intramuscular fat (Sokhlet method) were determined in ham samples. An HPLC method for the simultaneous quantification of skatole and androstenone, adapted from Hansen-Moller, (1994), was performed using the liquid fat extracted from belly’s adipose tissue. ANOVA with a post hoc Tukey’s test was used to investigate the significance of observed differences.

Results
Results showed that improved housing conditions led to higher hardness and lower pH values (p < 0.05). Intramuscular fat was significantly higher for this condition, specifically in group C6 %.

Table 1: Housing conditions, inulin feed composition and number of pigs for each trial

<table>
<thead>
<tr>
<th>Pen</th>
<th>Housing</th>
<th>Added inulin in feed</th>
<th>Number of pigs</th>
<th>Group code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Normal</td>
<td>0%</td>
<td>10</td>
<td>N0 %</td>
</tr>
<tr>
<td>B</td>
<td>Normal</td>
<td>3%</td>
<td>10</td>
<td>N3 %</td>
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<tr>
<td>C</td>
<td>Normal</td>
<td>6%</td>
<td>10</td>
<td>N6 %</td>
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<tr>
<td>D</td>
<td>Improved (+Care)</td>
<td>0%</td>
<td>10</td>
<td>C0 %</td>
</tr>
<tr>
<td>E</td>
<td>Improved (+Care)</td>
<td>3%</td>
<td>10</td>
<td>C3 %</td>
</tr>
<tr>
<td>F</td>
<td>Improved (+Care)</td>
<td>6%</td>
<td>10</td>
<td>C6 %</td>
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