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Effects of slaughtering methods on stress and *post mortem* changes in rainbow trout

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The study evaluated the effects on stress and freshness evolution in rainbow trout (*Oncorhynchus mykiss*) slaughtered by percussion or immersion in cold saline water (-4/-8 °C; 5‰ NaCl) during 5 minutes. A total of 100 rainbow trout were sampled for measuring stress indicators (cortisol, malondialdehyde-MDA) in plasma and tissues (30 fish; 15 per treatment) and for evaluating freshness (pH, rigor mortis index, fillet and skin colour and muscular texture) at 3, 48, 168 and 264 h of storage (70 fish; 35 per treatment). When cold immersion was used compared to percussion, trout showed lower cortisol in skin mucus (4.33 vs 10.4 ng/ml; P<0.001), muscle (14.8 vs 31.4 ng/g; P<0.01) and fin (34.9 vs 70.6 ng/g; P<0.01), and higher muscle MDA (20.0 vs 10.5 nmol; P<0.001). Plasma cortisol (184 ng/ml, on average) and MDA (13.7 nmol) were not affected. As for freshness evolution, the cold immersion sped up the onset of rigor mortis compared with percussion, but no differences were found between slaughtering methods in fillet pH (6.46), colour (L* 47.3; a* -0.89; b* 10.1), TVB-N (17.6 mg/100 g of fillet), fatty acids composition (% total FA) (EPA: 0.73%; DHA: 2.66%; PUFA n-3: 7.67%) or texture profile analysis. Some minor changes were observed according to storage time, that is TVB-N showed the highest value at 264 h of storage (15.8, 13.8, 14.2 vs 26.5 mg/100 g of fillet); pH changed from 6.57 at 3 h of storage to 6.39 and 6.37 at 48 and 168 h to raise at 6.50 at 264 h (P<0.001). In conclusion, based on cortisol changes, cold immersion was likely to be a less stressful slaughtering method compared to percussion. As for freshness, some differences were found on rigor mortis onset between the two methods, which however did not produce relevant effects on fish quality traits.

Session 15

Poster 12

Citizen's opinions regarding pig welfare conditions detected at ante-mortem inspections

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The aim of this study was to assess the opinion of Chilean citizens with different level of involvement in animal production and different animal product consumption regarding welfare conditions detected in pigs at ante-mortem (AM) inspections. All participants filled the same survey. Citizens involved (I; n=157) and not involved (NI; n=551) in animal production were recruited in public places. Participants were asked about their level of agreement using Likert scale (1 to 4): (Q1) 'To what extent the presence of tail lesion, ear lesion, lameness, bruising, wound, and hernia produce suffering/pain in the pigs?' (Q2) 'To what extent each outcome can affect the quality of the meat?'. (Q3) Participants were also asked what they considered to be the most important investment to improve on farm animal welfare (among 4 options). Among participants, 103 were vegan, vegetarian or pescatarian (V). Mean value (±SD) for Q1 and Q2 were calculated and descriptive data are presented. The responses of citizens involved and not involved in animal production were similar in Q1 (I: 3.0±0.35; NI: 3.1±0.34) and Q2 (I: 2.3±0.87; NI: 2.4±0.66). Similarly, the responses of meat consumers (MC) and V were similar in Q1 (MC: 3.1±0.34; V: 3.1±0.36) and Q2 (MC: 2.5±0.72; V: 2.1±0.66). The most important investment chosen by participants were 'to improve the ability to detect and treat diseases on farm (33%)', followed by 'the usage of anaesthesia for male pig castration (27%)', 'implementation of training courses in animal management for farm workers (20%)', and 'provision of straw as environmental enrichment (20%)'. These results suggest that citizens have similar opinions regarding welfare conditions detected in pigs at AM inspections regardless of their involvement with animal production or animal products.