Risk-based meat inspection and integrated meat safety assurance

WG 3 - Abattoir level controls and risk categorisation of abattoirs

Dragan Antic | 16. 10. 2020. | RIBMINS online conference
WG3  Abattoir level: controls + risk categorization

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specific objectives

- assessment of effectiveness of new tools | methods for detection of carcass contamination
- assessment of the significant intervention strategies and alternative methods for the slaughtering | the carcass dressing

- assessment of the performance of food safety management systems
- HEI in risk categorisation of abattoirs

Years 1 & 2

Years 3 & 4
WG3 timeline

- set-up after kick-off meeting
  - report 1 due
- training school (in preparation)...
  - report 2 due

- meeting in Belgrade [RS] in Jan-20
  - working on abattoir interventions reviews, to finalise the questionnaire for stakeholders
  - discussing approaches against carcass contamination
ongoing activities

- Performing systematic literature reviews/meta-analyses on:
  - interventions for the reduction of bacterial load on beef | sheep | pig | chicken carcasses at abattoirs
  - tools | methods for detection of carcass contamination and pathological lesions (‘vision systems’)

- Developing a stakeholders oriented survey to identify current industry perspectives and uptake of interventions | ‘vision systems’ in Europe

- Interventions: - actions taken during meat processing to reduce microbial contamination of carcasses: for example, carcass surface knife trimming or lactic acid wash

- Meta-analysis - combining data from multiple studies and analysing it together to increase power and provide a clearer picture of the effect of intervention on an outcome
1. Systematic review and Meta-analysis beef interventions

- The task is finalised, report delivered (FSA project FS430388)
- Interventions analysed:
  - cattle hide shellac coating
  - beef carcass water and hot water wash
  - steam vacuuming and steam pasteurisation
  - lactic acid wash
  - multiple interventions
  - dry/spray chilling
- Steam pasteurisation effect:
  - *E. coli* prevalence (RR 0.15, 95% CI 0.09-0.26) and counts (0.54 log CFU/cm²; 95% CI 0.34-0.73)
  - *Enterobacteriaceae* prevalence (RR 0.17, 95% CI 0.07-0.43) and counts 1.04 log CFU/cm² (95% CI 0.60-1.48)
  - ACC reduced by 1.14 log CFU/cm² (95% CI 0.93-1.35)

**Contributors**

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2. Systematic review and Meta-analysis sheep interventions

- The task is ongoing
- Literature searched 1970-2020
- ~ 80 articles eligible and characterized
- Risk-of-bias assessment ongoing, MA next step
- Interventions identified:
  - fleece cleanliness assessment
  - fleece shearing
  - sheep wash
  - gas de-pelting, inverted dressing
  - carcass water and hot water wash
  - steam pasteurisation
  - steam vacuuming
  - conventional and blast chilling

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3. Systematic review and Meta-analysis pork interventions

- The task is ongoing
- Literature searched 2000-2020
- ~ 120 articles eligible and characterized
- Risk-of-bias assessment ongoing, MA next step
- Interventions identified:
  - logistic slaughter
  - SPP/GHP (scalding, dehairing, singeing, wash)
  - carcass hot water wash
  - steam pasteurisation
  - chemical washes (lactic acid, ASC)
  - novel (steam-ultra sound, pulsed light, phages)
  - conventional and blast chilling

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The task is ongoing
- Literature searched 2000-2020
- ~ 240 articles eligible and characterized
- Characterisation ongoing, RoB and MA next step

Interventions identified:
- logistic slaughter
- SPP/GHP (scalding, water spray washing)
- carcass hot water wash
- steam pasteurisation
- chemical washes (organic acids, ASC, TSP, CPC, PAA, ozone)
- novel (steam-ultra sound, pulsed light, bacteriophages)
- conventional and blast chilling

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The task is almost finished

Literature searched 1900-2020

~ 170 articles eligible and characterized

Data analysis from ~ 60 articles ongoing

Paper writing next step

‘Vision systems’ identified:
  ▪ Mostly for broiler chicken carcass faecal contamination and gross pathology

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Upcoming events

- WG3 – meeting 14 | 15-Dec-20 Paris [FR]
  - Discuss the progress report, dissemination and future activities in years 3 and 4 – including:
  - WG3 – training School Late 2021 Venue TBD
Thank you for the attention.

Please join us at RIBMINS

[Website links and QR code]