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BOOK OF ABSTRACTS

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Rainbow trouts containing Enterococcus with virulence factors, antibiotic and biocide resistance genes: Can your dinner be a matter of concern?

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Portuguese marketed trouts (*Oncorhynchus mykiss*) for human consumption are mostly of aquaculture origin and studies showing their contribution to the human spread of potential clinical relevant bacteria through the food chain are unavailable. Our goal was to study the occurrence of *Enterococcus* carrying virulence and antibiotic (AB)/biocide resistance genes in rainbow trouts marketed in Portugal.

Trout samples of aquaculture origin (n=27; 3 trouts/sample; muscle and viscera) were collected from 8 supermarkets (n=25) and an aquaculture facility (n=2) (May-July 2012). Samples were enriched in peptone water (1:10) and plated in Slanetz-Bartley agar with/without antibiotics. Species identification and search of genes coding for AB^R (*vanA, vanB, vanC; tetM, tetL, tetS, tetK, tetO; ermA, ermB, ermC; aadE*), copper (3 multicopper oxidases, 2 copper export ATPases), mercury (4 *mer*A sequences) and virulence (*esp, hyl, acm, gel, asa*) were done by PCR. Susceptibility to 13 AB was tested by disk diffusion (CLSI).

Enterococcus were detected in 81% of the samples corresponding to 7 supermarkets and one aquaculture (27 *E. faecium-Efm*, 9 *E. faecalis-Efl*, 17 *E. durans*, 2 *E. hirae*, 6 *Enterococcus spp*). They were resistant to tetracycline [43%; *tet(M)*-92%, *tet(L)*-35%, *tet(S)*-12%], erythromycin [20%; *erm(B)*-83%], chloramphenicol (7%), HLR-streptomycin (5%; *aadE*-100%), ciprofloxacin (8%), trimethoprim-2% or nitrofurantoin (3%). Multidrug resistance was detected in 7% of the isolates. Genes encoding for copper (*tcrB*-5%, *cueO*-11%) and mercury (*merA1*-2%; *merA2*-2%; *merA3*-7%) resistance were detected only in *Efm* and those coding for virulence in different species (*gel*-13%, *Efl*; *asa*-3%, *Efl*; *acm*-39%, *Efm*). AB and copper or mercury resistance genes were co-detected in 11% and 7% of the isolates, respectively.

Market trouts are vehicles of *Enterococcus* spp carrying virulence (e.g. associated with adhesion), AB and biocide resistance, which might colonize human after ingestion. Studies in aquaculture production setting are needed to better understand the source of bacteria and genetic determinants contamination found in trout samples.