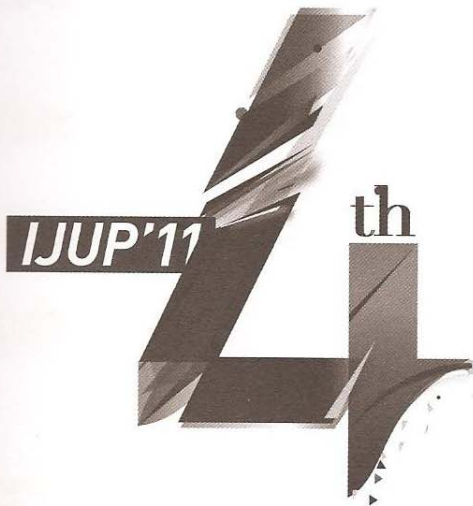


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ABSTRACT BOOK



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Are ready-to-eat salads an important vehicle of pathogenic and comensal bacteria resistant to antibiotics?

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The increase demand for fresh fruits and vegetables is causing an expansion of the market share for minimally processed vegetables along with recognized food safety problems. We analyzed the microbiological quality of Portuguese ready-to-eat salads (RTS) and their role in the spread of bacteria carrying antibiotic resistance (AB^R) genes.

RTS (n=50; 7 brands; split or mixed leaves, carrot, cornmeal) were collected in 5 of the main supermarkets (2010). The evaluation of microbiological load and quality followed the international standard methods for counting aerobic mesophilic, coliforms, *Enterococcus* sp and detection of *Salmonella* sp or *Listeria monocytogenes*. Samples were also plated in different culture media with/without AB before and after a pre-enrichment step. AB^R was studied by agar diffusion method (CLSI) and ESBL expression by double disk synergy test (DDST). Species were identified by PCR (Gram positive), API ID32GN or 16rRNA (Gram negative). AB^R genes, integron types and *E. coli* phylogenetic groups were searched by PCR and clonality by MLST in specific isolates.

A high number of RTS presented poor microbiological quality (86% for aerobic mesophilic, 74%-coliforms, 4%-*E. coli*), but no pathogens. Different AB^R phenotypes and genotypes were seen to both Gram positive and Gram negative bacteria. *E. coli* detected in 13 samples (n=26; phylogenetic groups A-7, B1-10, B2-1, D-8) presented resistance (%) to tetracycline (73; *tetA* and/or *tetB*), streptomycin (50; *aadA*), sulfametoxazole (46; *sul1* and/or *sul2*), trimethoprim (46; *dfrA1* or *dfrA12*), ampicillin (46; *blaTEM*), nalidixic acid (27), ciprofloxacin (8) or chloramphenicol (4). Two integron types (*dfrA1* + *aadA*, *dfrA12* + *aadA*) were detected in 11 isolates. Multidrug resistant *E. coli* (n=2; D) belonged to the widespread ST69; the *fimC* alleles of other *E. coli* were highly diverse and identified as 8, 48, 65 and 100. DDST gave a positive test for 2 *Raoultella* sp (2 samples) carrying an ESBL identified as SHV₂. Among enterococci (n=108; *E. faecalis*-20, *E. faecium*-18, *E. gallinarum*-5, *E. hirae*-9, *E. casseliflavus*-40 and *Enterococcus spp*-16) AB^R (%) was seen for tetracyclines (6; *tetM* and/or *tetL*), erythromycin (3; *ermB*), nitrofurantoin (1) or ciprofloxacin (1).

The present study positions RTS within the spectrum of ecological niches that may be reservoirs/vehicles for AB^R bacteria/genes with clinical interest (e.g. *E. coli*-B2 or ST69; ESBL) being these findings worthy of attention as their spread to humans by ingestion cannot be dismissed.

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