

Population dynamics of *Staphylococcus aureus* and *Salmonella* Typhimurium in a laboratory medium and rocket extract

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Salmonella and *Staphylococcus aureus* are an important human pathogen capable of causing a diverse array of infections, while international organization (EFSA, FAO/WHO) report that the most related microorganisms for foodborne diseases are these pathogens. In addition, the ability of both species to form biofilm and the increased number of antibiotic-resistant *S. aureus* strains, including strains resistant to methicillin (MRSA) among nosocomial infections stimulates the interest of researchers. On the other hand, the consumption of raw plant tissues, have been associated with the risk of foodborne diseases due to cross contamination. However, the ability of pathogenic strains to survive on the surface of the plant tissues needs to be studied in deep.

In the present study, the growth of *Staphylococcus aureus* and *Salmonella* Typhimurium on different growth media was studied. For this purpose, a growth medium (Luria – Bertani broth, LB) and extract from rocket, were inoculated with *Staphylococcus aureus* strain COL (MRSA) and *Salmonella* Typhimurium (CDC 6516-60). After the inoculation, the samples were incubated at 20°C. In the case of *Salmonella* Typhimurium, the final population on LB broth was about 1 log cfu/mL higher than rocket extract. On the other hand, the growth of *Staphylococcus aureus* seemed to take an advance on rocket extract at the beginning of storage, while the final population was at the same level in both medium (LB broth and rocket extract).

These results revealed that, the rocket might be a favorable environment for the growth of *Staphylococcus aureus* and *Salmonella* Typhimurium. Further studies are needed to ensure the survival and growth of both pathogens on plants extracts or plant tissues, as well as the study the potential of its pathogenicity during the growth on these media.

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