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### **Microbiota at different stages of industrial processing of ready-to-eat salad**

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Abstract:

Ready-to-eat salads are becoming more and more popular among consumers as convenience foods. However, the industrial processing of fresh cut products transfers processing steps such as removal of outer leaves and washing of produce to an industrial setting and it requires transport from the processing site to retail. These factors increase the duration that the product needs to be stored at 4 °C until consumption and this in turn may effect the development and composition of the microbiota in the product. In this study we investigated the bacterial numbers and diversity at the various production stages. i.e. the field, cold-storage, pre-clean and end product stages for ready-to-eat salads processed from the Romana, Endive and Lollo Bionda varieties by a fresh cut producer in Germany. Additionally we determined the bacterial load and microbial diversity of the washing water over a production time period of ca. 8 h. The microbiota analyses showed the presence of a product-specific microbiota, which changed during processing from salad on the field to the final product, e.g. a clear increase in the predominance of the *Pseudomonadaceae* could be observed. The biodiversity analyses of wash water microbiota also showed that a stable microbiota was obtained after approx. 1 h of operation of the wash tunnel and this microbiota stayed approx. the same for the rest of the 8 h operation of the wash tunnel. This implies that industrial washing does not only reduce the microbial load but that it also effects a thorough and massive distribution of microorganisms, drastically increasing the microbial homogeneity of the washed products.