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Title : **METAGENOMIC INSIGHTS INTO THE DYNAMICS AND FUNCTIONALITY OF FOOD MICROBIAL COMMUNITIES**

Food products can be considered as rich substrates, and environmental conditions of processes such as fermentation or storage are favorable to development of a wide range of microorganisms. Understanding dynamics of microbial communities which develop in these ecosystems, thus constitutes a major challenge as well as for reducing food waste and losses, developing innovative storage processes, producing new functional foods or enhancing food safety. However, up to now, unlike environmental or animal microbiota, these communities have partly been explored globally. Development of new high throughput technologies have recently brought new insights in the comprehension of the dynamics and functionality of these food communities, modifying well established paradigms such as their low diversity, supposed to be reduced to a few number of cultivable species. In this survey, we will show which main global approaches have been or will be used to describe the communities and to determine the main role of their expressed functions in food products. We will illustrate some of the future perspectives open by these approaches in the field of food preservation, food fermentation or food safety.