

Editorial**Music affects survival and activity of microorganisms**

Music is produced by integration of sounds (mostly periodic sounds-namely regular vibrating sound waves or tone- with different tone color, pitch and volume) into the rhythm patterns (sequential sections of time). It exhibit an intrinsic power and provide a magical world not only in front of human (possessing the deepest mental, emotional, cognitive and spiritual impacts and displaying one of the best ways of discovery in meaning), but also for animals, plants and even microorganisms. It seems that all livings are somehow affected by music in different ways and various levels.

Several research have proven that sonic waves and ‘green music’ (which normally comprises a classic music base along with some natural sounds such as those of birds, insects, water and wind) affects the metabolism and growth of some plants and vegetables as well as enhances daily milking yield in cows. Music waves have been also applied for attracting livestock to move along a laneway. Also, recent investigations have revealed that music can affect survival and activity of different microorganisms. For instance, green music was shown to render influences on acidification rate and viability of fermenting microorganisms and probiotics (The healthful microorganisms -such as *Bifidobacterium* spp. and *Lactobacillus acidophilus*- that help maintaining and/or improving the microbial balance of intestine in adequate viable number, and they are presently incorporated in and consumed via food products) during fermentation of yogurt. This effect comprises good consequences for factory staffs, because by broadcasting music in production lines that is pleasant to the staffs, positive industrial impacts on fermentation of yogurt is also achievable. According to the latest investigations, green music waves significantly increased the cell activity and acidification rate of yogurt and probiotic bacteria during fermentation as well as significantly reduced the incubation time.

Further works could be focused on deep consideration of different music styles on survival and activity of different strains (pathogens, spoilage and useful microorganisms) with investigating the mechanisms of impacts and qualitative and quantitative monitoring of the produced metabolites during fermentation.

Amir M. Mortazavian, Ph.D. (Dairy & Probiotic Specialist)
Assistant Professor, Department of Food Science and Technology