

Abstract

The industry of probiotics has seen substantial growth over the past years as researchers learn more about the benefits they can provide to the user. However, several recent studies have suggested that there may be a deficiency in labeling accuracy for commercial probiotics in labeling the number of colony-forming units (CFUs). The purpose of this project was to quantify the number of CFUs in three brands of probiotics in order to compare against the manufacturer's label. Quantifying the bacteria was accomplished through the plate count method, which involved diluting each sample of the probiotics by a factor of 10^{-8} , plating the final dilution on a petri dish, incubating the samples for 72 hours, and then manually counting the bacterial colonies that had formed. By using this number, the amount of bacteria in the original, undiluted sample was determined mathematically. Of the nine bottles tested, only one met or exceeded the guaranteed number of CFUs for all three samples. Two of the brands had zero samples that met their guaranteed number of CFUs. Only one brand averaged a CFU higher than that listed on the label, and even this brand delivered less than the guaranteed quantity in four of the nine samples. The research suggests that there is a deficiency in labeling accuracy of colony-forming units in probiotics. Further research would need to be done to confirm these results and to determine the cause.