Lecture 26: From Donkeys to Zebras

Microbial fermentations are used to produce and preserve many foods.
I. Dairy fermentations
   A. Used to produce ________________, buttermilk, sour cream and ________________.
   B. Performed by the ________________________, which include species in the genera *Lactobacillus*, *Lactococcus*, *Leuconostoc* and *Streptococcus*. These bacteria ferment the milk sugar, ________________, to lactic acid. The lactic acid production lowers the pH and _________________.
   D. Provide a way to ________________, while at the same time providing products with various _________________________.
   E. History
      1. As long as 1000 years ago, people began learning methods to _________________.
      2. These “sour” milks have varied from country to country and have used as their source animals from _________________.
         a. The Russian *kumiss* is made from _________________.
         b. The Swedish *surmjÖlk* comes from _________________________.
         c. ________________________ is made from cow, goat or sheep milk and originated in the Caucasus Mountains. Like kumiss, it may contain up to 2% alcohol. Originally kefir was produced in leather sacks and hung by the door. People passing by would massage the sack and stimulate fermentation.

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1 The Microbiology of Fermented Foods by Brian J.B. Wood
2 Prescott text (seventh edition) p. 1040
3. For many years, the ________________ was unknown. The initial microbial inoculation came from ________________. Successive batches were inoculated with ________________

II. Yogurt
A. One of the ________________ fermented milk product in the U.S.³
B. Produced both commercially and by individuals (yogurt-making kits).
C. A virtual tour of a yogurt factory

³ Prescott text (seventh edition) p. 1038
III. **Live cultures in fermented milk products may provide health benefits**.  
A. control of diarrhea  
B. **antitumor** effects (some lactobacilli have antitumor compounds in their cell walls)  
C. improvement of inflammatory bowel disease  
D. help maintain the normal balance of microbes in the gut and improve

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*Prescott (seventh edition) p. 1039*