

EDITORIAL**PROBIOTICS FOR GOOD HEALTH AND LONGEVITY**

Since the dawn of recorded history, human beings have sought ways of extending their lifespans beyond the biblical prophetic age of three score and ten years. In their search for longevity, they have dreamed and looked for clues by examining the food habits of indigenous communities reported for good health and longevity. Among the natural food products of special interest are yoghurt and honey.

In 1908, the Russian Nobel Laureate Elie Metchnikoff attributed the good health and longevity of Bulgarian peasants to yoghurt. More recently in a 1981 census, it was noted that Azerbaijan has one of the highest rates of longevity in the world. Approximately 48.3 people per 100,000 inhabitants were aged 100 year and above. Again, it was pointed out that yoghurt is a common food in this community. Indeed the word 'yoghurt' is of Azerbaijani origin. Among indigenous people of Africa, yoghurt (in form of fermented milk) is highly valued and often used to celebrate special occasions. In Kenya, the Kalenjin community is renowned for producing long distance athletes. In international competitions, athletes from this community have excelled in long distance races such as the marathon, 10,000 m, 5,000 m and 3,000 m for the last 30 years. On their return from these competitions, they are feted and welcomed back by relatives who offer them '*mursik*', a special type of yoghurt prepared in a ritualistic manner.

While the association between yoghurt and good health is generally well recognized, the scientific interpretation of this association is not convincing and can be challenged. The Nobel Laureate Elie Metchnikoff attributed the benefit of yoghurt to a lactobacillus which he named *Bacillus bulgaricus*. In subsequent years it was shown that this bacterium cannot survive in the human gastrointestinal tract. Although Metchnikoff's theory was discredited, it gave rise to a novel concept, namely the use of live microorganisms to confer good health to the host. Yoghurt and related substances which contain live microorganisms are now collectively referred to as 'probiotics'. In this issue of the journal, Maitai and Kokonya have given a critical review of the use of probiotics including the presumed mode of action.

Until recently, probiotics have been used as food supplements. However, it is now common to find commercial probiotics being marketed as capsules, sachets and granules. On the basis of claims made regarding use of probiotics, it is now clear that they have joined the long list of substances which are marketed as Complementary and Alternative Medicines (CAM). Studies show that between 30-50 % of adults in industrialized nations use some form of CAM. A large number of general practitioners (GPs) also prescribe some form of CAM. These health professionals who insist on proof of efficacy and safety before prescribing modern drugs do not apply the same strict criteria to CAM.

It is estimated that Britain spends about £130 million a year on 90 different types of CAM ranging from vitamins, herbal medicines and Ayurvedic medicines to probiotics among others. In the USA where CAM is practised freely, registration of probiotics is not subjected to strict scrutiny and is treated in much the same way as food supplements. The probiotic global market was estimated to be \$14.9 billion in 2007 and projected to rise dramatically in future.

Is it necessary to justify the use of probiotics by invoking scientific explanations we normally associate with modern drugs, as outlined in the article by Maitai and Kokonya? Perhaps not. Disciplines which tend to base their practice on science while deliberately violating or repudiating the scientifically accepted

research protocol may be considered to be pseudosciences. In the case of probiotics, it is difficult to justify how live microorganisms can survive and proliferate in the gastrointestinal tract, considering the exacting requirements of nutrients, temperature, pH, oxygen and trace elements.

Yoghurt is not the only product associated with longevity. There is extensive literature associating honey and its products with good health and longevity. Bees are said to produce an 'anti-aging' medium named '*Royal Jelly*'. It has been observed that the queen bee is genetically identical to workers in her hive, yet she lives 10 times longer and is reproductively viable throughout her life. The queen bee feeds on '*Royal Jelly*'. Film stars and other celebrities are said to consume that product to forestall aging.

Editor-in-Chief