

Cow's milk - A1 or A2 good for us?

Cow's milk is nutritious and beneficial to human health. It is a natural source of calcium, vitamins, and zinc. Cows give three types of milk:

- Milk with A1 proteins
- Milk with A2 proteins
- Milk with a combination of A1 and A2

A recent research results published in the New Zealand Medical Journal claims that type A2 cow's milk is better for human health.

Cow's milk contains six major proteins, four are casein and two are whey (watery part of milk). The casein is made up of about 80%. One of the major casein is beta-casein, of which the most common are beta (β)-casein A1 and beta (β)-casein A2. Milk high in beta-casein A1 is referred to as 'A1 milk' while milk high in beta-casein A2 is called 'A2 milk'.

Milk produced in Australia, New Zealand and other countries are a mixture of A1 and A2 beta caseins. Friesian cows produce mostly A1 milk, while Guernsey cows, as well as sheep and goats produce mostly A2 milk.



Friesian cows is believed to produce A1 type milk



Guernsey cows is believed to produce A2 type milk

The ancestors of the modern cow lived primarily in the Middle East and Asia. These cattle carried only the original A2 variety of the beta casein gene. Still some cows produce the original A2 beta casein. It is believed that thousands of years of domestication and inbreeding have resulted in A1 protein being in cows. Utilising DNA test it is now possible to determine whether a cow produces milk that contains the desired protein A2 beta casein (which is done through a DNA test of a cow's tail hair).

Research results published in the New Zealand Medical Journal has suggested that the consumption of A2 milk has some health benefits to humans compared to A1 milk, though the results is inconclusive and requires further research. The inconclusive research results suggest that consumption of A1 milk may aggravate diseases such as heart disease, type I diabetes, whereas A2 type milk containing β -casein has not been implicated with the above diseases. Researchers found that in A1 type, one amino acid is different (note: proteins are chains of amino acids) which creates a weak link thus may trigger disease. However, evidence for this correlation is insufficient.

References and further readings :

- <http://www.a2milkaustralia.com.au/faqs.asp>
- <http://www.nzfsa.govt.nz/policy-law/projects/a1-a2-milk/>
- <http://www.abc.net.au/landline/content/2006/s1702999.htm>
- New Zealand Food Safety Authority (<http://www.nzfsa.govt.nz/consumers/food-safety-topics/chemicals-in-food/milk-a1-a2/index>)
- Swinburn. B. (2004). Beta casein A1 and A2 in milk and human health. Report to New Zealand Food Safety Authority

The article is based on various sources and was compiled by Golam Kibria, Ph.D in October 2007 for <http://www.sydneybashi-bangla.com/> (10) Views expressed in this article are those of the author and are not to be taken to be the views of any others including third parties. The author disclaims any liability for any error, loss or other consequences which may arise from relying on any information in this article.