

BETA-CASEIN GENE INFLUENCES PRODUCTION OF MILK PROTEIN CASEIN WHICH HAS A1 & A2 VARIANTS

A2 MILK IS POTENTIALLY LINKED TO HEALTH BENEFITS ASSOCIATED WITH:



Autoimmune Disease



Heart Disease



Type 1 Diabetes



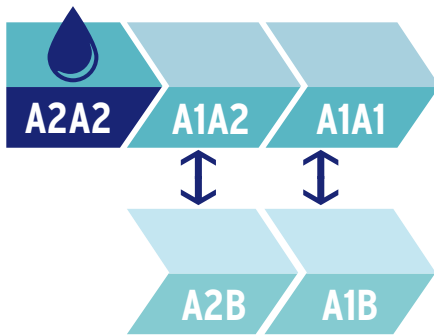
Dairy Intolerance

Laugesen and Elliott 2003, McLachlan 2001, Woodford 2006.

		A2A2 SIRE	
DAM	A2A2	100% A2A2	Produce 100% of A2 milk
	A1A2	50% A2A2 50% A1A2	
	A1A1	100% A1A2	Produce 50% A1 milk & 50% A2 milk

Holstein Canada, 2015

Herds can convert to 100% A2 milk within 4 years using intensive selection.



A SINGLE GENE CONTROLS BETA-CASEIN PRODUCTION

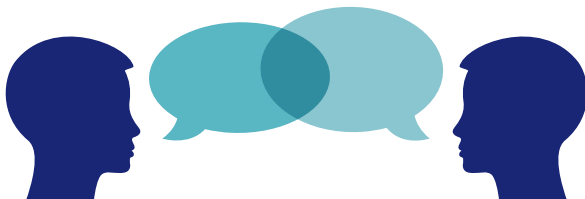
* B is a variant within the gene that can be inherited along with A1. For simplicity sake, it can be considered the same as A1.

S. Kaminski 2007 Journal of Applied Genetics.



A2 MILK IS SELLING AT A PREMIUM

HEALTH BENEFITS ARE STILL BEING DEBATED IN THE RESEARCH COMMUNITY



A2 variant is becoming more common in Holstein sires
121 SEMEX A2A2 SIRES
> 2700 GTPI

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Homozygous A2A2 Carrier Sires