

WO 2007/050735 "MARKERS FOR PRODUCTION TRAITS"
by Innovative Dairy Products Pty. Ltd. (as Trustees for Dairy CRC)

Patent Application Summary

Applicant: INNOVATIVE DAIRY PRODUCTS PTY. LTD. (Australia)

Inventors: H. W. Raadsma, JA. L. Cavanagh, R. J. Hawken, K. R. Zenger, R. E. Crump, Sandy & Sara McClintock, B. Tier, M. Hobbs & W. C. Baris

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Current Status: This PCT patent application will enter the National Phase (country-by-country stage) by **25 May 2008**, which is the date when any corresponding foreign patent applications (including any potential NZ application) will be filed.

Patent Abstract: The invention relates to a method for selecting an animal for a group of traits consisting of **milk protein yield, milk fat yield, cell count, Australian profit ranking (APR), Australian selection index (ASI), milk fat percent, milk protein percent, milk volume, cow fertility, milking speed, temperament, calving ease, survival, mammary system, overall type, teat length, centre ligament, udder depth, likeability and live weight**, using marker assisted selection (**MAS**), wherein the method comprises:

- (a) analyzing a nucleic acid sample from the animal for a single nucleotide polymorphism (SNP) in at least one genetic marker selected from the groups set out in Tables 1 – 20 (see full text of the patent specification); and
- (b) selecting the animal based on the presence or absence of the SNP in the at least one genetic marker, wherein the SNP is predictive of a particular animal trait (see all animal traits listed above).

Current Patent Claims: The patent specification (which is 2,178 pages long!) has a total of 43 claims out of which **26 are key claims**, as follows:

(1) **a method for selecting an animal** for a group of traits consisting of *milk protein yield, milk fat yield, cell count, Australian profit ranking (APR), Australian selection index (ASI), milk fat percent, milk protein percent, milk volume, cow fertility, milking speed, temperament, calving ease, survival, mammary system, overall type, teat length, centre ligament, udder depth, likeability and live weight*, using marker assisted selection (MAS), wherein the method comprises:

- analyzing a nucleic acid sample from the animal for a single nucleotide polymorphism (SNP) in at least one genetic marker selected from the groups set out in Tables 1 – 20 (see full text of the patent specification); and
- selecting the animal based on the presence or absence of the SNP in the at least one genetic marker, wherein the SNP is predictive of a particular animal trait (see all animal traits listed above).

(2) **a method for breeding an animal**, wherein parents of the animal are selected according to method (1)

(3) **a method for breeding an animal as per (2)**, wherein the method comprises:

- analyzing a nucleic acid sample from progeny of the parents for a SNP in at least one genetic marker selected from the group set out in Tables 1 – 20; and
- selecting the progeny based on the presence or absence of the SNP in the at least one genetic marker, wherein the SNP is predictive of a trait set out in Tables 1 – 20.

(4) a method of determining whether an animal is to be used for breeding purposes, production purposes or culled, wherein the animal is selected according to method (1)

(5) a kit for selecting an animal for a trait set out in Tables 1 – 20, wherein the kit comprises:

- means for analyzing a nucleic acid sample from the animal for a SNP in at least one genetic marker selected from the group set out in Tables 1 –20; and
- selecting an animal based on the presence or absence of the SNP in the at least one genetic marker, wherein the SNP is predictive of the trait.

(7) an animal selected by the method (1) or by the use of the kit (5)

(8) an animal bred by methods (2) or (3)

(9) a progeny animal selected by method (3)

(10) an animal product (including milk or any milk-related products) derived from the animal described under (8)