# Maximize Management of Milk Production

Milk production from cows varies within lactactions and across lactations. Some of this variation is due to genetic differences. Other factors include intake and lactation number of the individuals. You control the feed ration and energy content, but you can't make the cow eat. You decide when to cull a cow and which heifers will be replacements, but you can't decide how much milk they will produce.

The genetic differences that impact milk production do so because they impact a cow's intake and energy balance. What if you knew which cows and heifers will eat more, have increased lactation persistency and longevity? Q-lact gives you the answer and allows you to maximize management of milk production.

Identify High Producers

Q-lact is a DNA test that identifies differences in a cow's intake, milk production, and longevity, allowing dairy producers and nutritionists to tailor management for each cow to maximize output.

Q-lact tests for a functional mutation in a gene that controls a cow's appetite (intake). An increased appetite leads to a higher intake and more energy for milk production. There are 3 possible genetic variants: homozygous TT (mutation), heterozygous (CT), and homozygous CC (wild type).

Milk Production Response to DMI
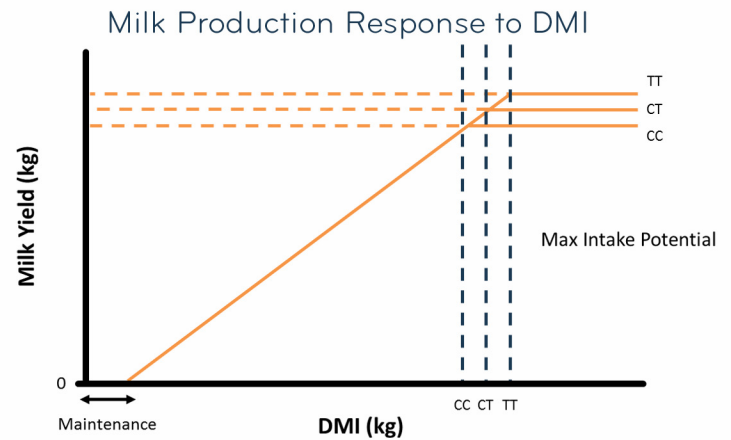
Cows that are TT have a greater DMI which is critical, especially in the first 100 days of milk, to overcome negative energy balance and maintain optimal body condition (BCS). Higher milk production in the first 100 days of the lactation period translates to a greater lactation persistency.

What does this mean?

Q-lact identifies cows with
1) ↑ DMI
2) ↑ Milk Production
3) ↑ Lacation Persistency
4) ↑ Cow Longevity

Lactation Curve
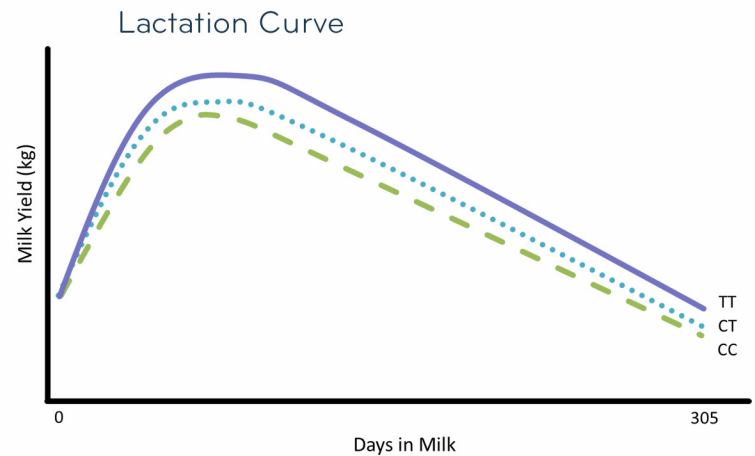
Postpartum Results by Q-lact Genotype

	CC	TT	SEM	P–value
3.5% FCM[1]	42.3	45.8	1.17	0.05
DMI kg/d	20.7	22.0	0.47	0.07
NE_L Intake (Mcal/d)	32.9	34.9	0.76	0.07
BCS	3.2	3.2	0.13	0.98

[1] Fat corrected milk = (kg fat X 16.2) + (kg milk X 0.43)

[2] Body condition score: 5 points scale

How does it work?

The process is simple: collect ear tissue with Quantum designed sample collection tags and send to our lab for analysis. You will receive a report that accurately predicts which cows will be higher producers to aid in grouping decisions or individual cow management.

Genomics Simplified