

Lifetime Net Merit 2006: Building More Profitable Cows

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Lifetime Net Merit \$ (LNM\$) rankings of bulls and cows were first introduced in 1994 with the goal of ranking the dairy cattle population on bottom-line profitability. Since its inception, it has been revised to reflect progress in identifying and evaluating traits in addition to production that affect farm profits. Table 1, below, reflects the most recent changes and highlights the LNM\$ 2006 enhancements.

What changed? And why?

Non-production trait values have been increased to reflect the value of cows that produce longer and are more reproductively efficient. Productive Life (PL) is now 17 percent of the value within the index. Additionally, PL has been revised to reflect the ability of today's cows to produce high volumes of milk for longer periods of time. Its previous parameters capped a lactation at 305 days and a cow's life at 84 months. The changes now credit a cow for more than a 305-day lactation, and also rewards her for staying productive past 84 months.

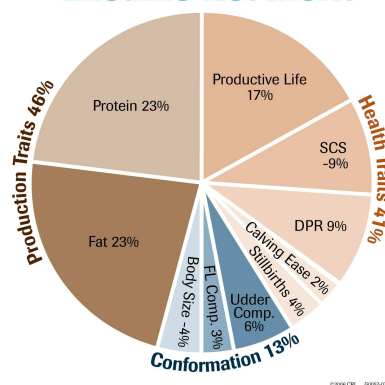
Daughter Pregnancy Rate (DPR) has also been raised to nine percent of the index and quantifies the ability of daughters of a sire to become pregnant. It is measured as a percent and each percent positive reflects four less days open. Reproductively efficient cows with more frequent birthings provide a farm with increased internal growth and substantial savings in all phases of a reproductive program.

Table 1

Traits Included	USDA Economic Index (Year Introduced)		
	LNM\$ (2000)	LNM\$ (2003)	LNM\$ (2006)
Milk	5	0	0
Fat	21	22	23
Protein	36	33	23
Productive Life (months)	14	11	17
Somatic Cell Score	-9	-9	-9
Udder Composite	7	7	6
Feet/Legs Composite	4	4	3
Body Size Composite	-4	-3	-4
Daughter Pregnancy Rate (%)	-	7	9
Service Sire Calving Difficulty	-	-2	-
Daughter Calving Difficulty	-	-2	-
Calving Ability \$ (CAS)	-	-	6

LNMS 2006 also introduces the Calving Ability Dollar (CAS) index with a six percent weighting. It is related to PL and DPR as it measures the genetic birthing efficiency of a bull and his daughters. The index includes Sire Calving Ease (SCE) and Daughter Calving Ease (DCE) (first quantified in LNM\$ 2003) and introduces and incorporates Sire Stillbirth (SSB) and Daughter Stillbirth (DSB) into the equation. Both of these reflect the impact of the sire and dam, respectively, in the birthing process. Average stillbirth percent among all birthings is eight percent and rises to 12 percent in first calvings. SCE and DCE represent about one-third of the value

Traits Included in Lifetime Net Merit



in CA\$, and SSB and DSB account for two-thirds of the six percent. Each of the four birthing traits will be published; however, the CA\$ will not be published as a stand-alone trait.

The heritability of this group of traits is relatively low (less than .10); however, if no effort is made to select for them, progress will not be made except by accident. Overall, the value of this group of traits increases from 22 to 32 percent or nearly a third of the index.

"50 Pounds of Flour"

Grandpa used to say, "You can only put 50 pounds of flour in a 50-pound sack." It is true in indexing also. The increases in PL, DPR and CA\$ mean the production value is reduced to 46 percent in the index with equal values of protein and fat. However, Table 2 indicates the amount of production progress attainable using LNM\$ 2006 as your selection index. And, frankly, we have been pretty successful at weighing the milk and increasing production.

Why is it Important to Me?

Obviously, sound management and husbandry practices are a key ingredient of any successful dairy, but if you like the idea of a more genetically efficient cow helping with the project let LNM\$ 2006 be your guide. Table 2 reflects the progress genetically that can be made by using LNM\$ 2006 as your primary breeding tool. I encourage you to note the progress that can be attained in PL, DPR and CA\$.

A Practical Approach

"One purpose of a breeding program is to increase the frequency of those genes that contribute to a more profitable herd."

~ Bennet Cassel

Extension Dairy Scientist, Virginia Tech

Use of LNM\$ 2006 fulfills this statement for me. It is consistent with the Genex Mission Statement and provides dairy owners, whether large or small, with a current and practical approach to selecting service sires. It is research based and weighs the traits for bottom line profitability increasing the frequency of those genes that contribute to a more profitable herd.

Table 2

PTA Trait	Expected Genetic Progress from LNM\$
	Breeding Value Change/Decade
Protein (lb.)	52
Fat (lb.)	76
Milk (lb.)	1720
Productive Life (months)	6.0
Somatic Cell Score	-.34
Udder Composite	+.80
Feet/Legs Composite	+.60
Body Size Composite	-.80
Daughter Pregnancy Rate (%)	1.4
Calving Ability \$ (CA\$)	25