

A Selection Index to Create Ideal Commercial Cows

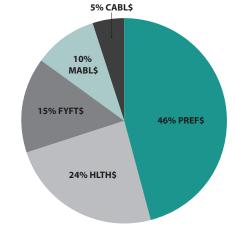
The Ideal Commercial Cow (ICC\$) index is a sire ranking tool that was first released in August 2014. Building on its reputation for innovation, CRI created the index after producers asked for a better way to rank sires that create cows which excel in commercial conditions. The ICC\$ index was updated in December 2016 to include three cutting-edge proprietary traits: Subclinical Ketosis (SCK), Metritis (MTR) and Foot Health (FH).

ICC\$ incorporates science and data-driven genetic evaluations from multiple sources including the cooperative's research arm, the CRI International Center for Biotechnology (ICB). The CRI ICB research database includes nearly 4 million cows and 26 million recorded health events.

Five Sub-Indexes Target Specific Management Areas

ICC\$, the optimal selection tool for creating ideal commercial cows, is the summation of five easy-to-use sub-indexes: Health, Production Efficiency, Fertility and Fitness, Milking Ability, and Calving Ability. The sub-indexes enable producers to narrow their genetic emphasis to specific areas of farm management.

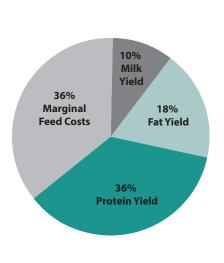
- The Production Efficiency (PREF\$) sub-index pinpoints genetics resulting in high yielding cows with lower feed costs. Emphasis is placed on pounds of protein. Use of PREF\$ and ICC\$ reverses the trend for taller cows.
- The Health (HLTH\$) sub-index breeds for improved, sustainable health and longevity.
 High-ranking HLTH\$ bulls have daughters with proper body condition, low somatic cell scores and excellent locomotion. With inclusion of the proprietary health traits SCK, MTR and FH, this sub-index also selects for lower predicted blood BHBA and fewer cases of metritis and lameness.
- With nine measures of cow and heifer fertility, Fertility and Fitness (FYFT\$) meets the needs
 of producers looking to emphasize reproductive efficiency. Selection of bulls with high FYFT\$
 rankings results in optimal age at first calving, reduced days open and shorter calving intervals.

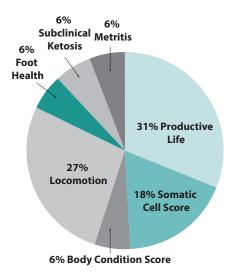


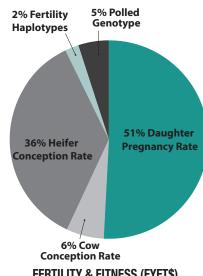
SUB-INDEXES INCLUDED IN ICC\$

- Milking Ability (MABL\$) optimizes efficiency with trouble-free milking cows. MABL\$ includes
 mastitis resistance, milking speed and temperament, and ideal commercial udder conformation and function. Ideal udders have strong
 attachments; are above the hock; and include proper teat placement and length. Choosing bulls using MABL\$ enhances udder texture and
 manages the emerging trend of short teat length.
- Calving Ability (CABL\$) focuses on live calves born without difficulty. High-ranking CABL\$ sires with high ICC\$ values can maximize genetic progress in heifer pens while ensuring an easy transition into the milking string.

ICC\$ Sub-Indexes Target Specific Management Areas



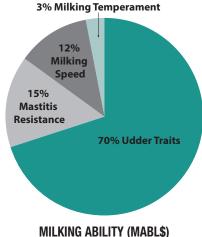


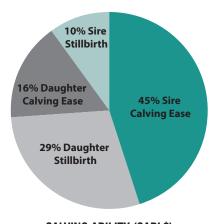


PRODUCTION EFFICIENCY (PREF\$)

HEALTH (HLTH\$)

FERTILITY & FITNESS (FYFT\$)





CALVING ABILITY (CABL\$)

Production Efficiency (PREF\$)

- 64% total yield, 36% feed efficiency indicators
- 2:1 Protein to Fat ratio
- . Marginal feed costs includes production costs and body maintenance costs
- Selects for ideally sized commercial cows

► Health (HLTH\$)

- · Improves overall health and longevity
- Incorporates Body Condition Score and locomotion breeding values
- Includes proprietary SCK, MTR and FH breeding values

Fertility and Fitness (FYFT\$)

- · Emphasizes fertility selection with nine measures of cow and heifer fertility
- · Assigns a slight economic advantage to the polled genotype

► Milking Ability (MABL\$)

- · Optimizes milking efficiencies
- Incorporates Mastitis Resistance breeding value
- Udder selection emphasis includes udder depth, attachments, teat length and placement
- · Specifically manages rear teat length and placement

Calving Ability (CABL\$)

- · Selects for the ability to have live calves born without difficulty
- Emphasis on Sire Calving Ease to minimize assistance needed in maternity pens



Cooperative Resources International

Shawano, WI (USA) • +001-715-526-2141 www.crinet.com