



## Worksheet 9: Cud Chewing Index (CCI) and Cow Comfort Quotient (CCQ)

### Cud Chewing Index:

$$\text{CCI} = \text{Cows chewing cuds} / \text{Cows in the stalls} \times 100$$

The expectation is that more than 50% of the cows lying in the stalls are chewing their cud. Many herds where diets are properly designed and the cows are comfortable will have a CCI of 60 to 65%.

### Cow Comfort Quotient:

$$\text{CCQ} = \text{Cows lying properly} / \text{Cows "in stalls"} \times 100$$

The CCQ is not considering cows standing in the alleys. It only considers those cows that made an attempt to go to a stall, lie down and get comfortable. Cows lying halfway out of a stall, lying backwards, or standing with two feet in a stall are considered "in stall" cows. The suggested goal is to have at least 80% of cows that are in the stalls appearing comfortable and lying properly. In very well managed cow comfort herds, the CCQ is 85 to 90%.

Normally cows should lie down 11 to 12 hours each day, which approximates the normal cud chewing time required to maintain a healthy rumen. It is felt that getting adequate rest impacts milk production in two ways:

- 1) Blood flow to the mammary gland improves 22% in cows lying versus standing. (Rolquin, H., and J.P. Caudal. 1992. *Annals of Zootechnology*. 41:101.)
- 2) Stall comfort has dramatic effect on reducing laminitis in cows even on the same diets. (Colam-Ainsworth, P., G.A. Lunn, R.C. Thomas, and R.D. Eddy. 1989. *The Veterinary Record*, 2 Dec 89, pp. 563-576.)