

## The Kempen Feeding System

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The Kempen Feeding System is a complete feeding concept for dairy cows, which consists of a specialized feeder and free-choice access to dry hay and a specially formulated concentrate. The Kempen Feeder ensures that the pellet intake is equal throughout the day. The Kempen Pellet has an appropriate diameter and a specific formulation designed for safe and efficient rumen function. It contains all ingredients necessary for healthy and fertile cows with high lifetime production.

The Kempen System was developed and tested on the Nutreco Kempenhof Animal Research Centre in Boxmeer, Netherlands. In practice, there has been considerable experience with the Kempen System with over 300 Dairy farms in the Netherlands, France, Spain, Germany and South Korea and one recent herd in South Western Ontario.

The Kempen Feeding System allows the dairy cow free-choice access to two feed choices – palatable dry hay and pelleted concentrate. The feeder and pellet formulation are carefully designed to provide steady concentrate consumption throughout the day. The dairy cow will visit the feeder between 9-10 times/day and will consume up to 20 kg of pelleted concentrate. The dairy cow can only consume a limited amount of pellets per minute. This controlled consumption pattern coupled with elevated saliva production leads to healthy rumen environment.

Research at the Nutreco Kempenhof Research Centre demonstrated the following:

- Higher total VFA production as compared to TMR or component fed animals. The VFA is the primary energy source for the dairy cow. Increased VFA production will lead to higher energy status which would translate to increased milk production and less body weight loss.
- Healthy VFA production; the acetic: propionic ratio is an indication of rumen health and the survival of fibre-digesting bacteria. The Kempen dairy cows had an increased A: P ratio as compared to the other two feeding systems.
- Health rumen environment; The University of Gent, Craninx et al, 2007 measured milk fatty acids to determine if there were changes to Cellulolytic and Amylolytic bacteria. The Kempen-fed cows had increased Cellulolytic bacteria levels and similar Amylolytic bacteria levels as compared to conventionally fed animals. The researchers concluded that the rumen pH was not compromised and the risk of acidosis was unchanged with the Kempen-fed dairy cows.
- Reduced negative energy balance (NEB); the dairy cows on the Kempen Feeding System consume increased levels of feed. This is due to the density of the diet and

controlled intake of the pellet. Researchers at the Nutreco Kempenhof Research measured energy output versus energy consumption and demonstrated that the Kempen-fed cows had significantly lower NEB.

- Reduce Labour; the Kempen Feeding System has been calculated to save approximately 35% labour. A traditional system was calculated at 75 hours/week while the Kempen System was calculated at 50 hours/week. This translated to a decrease from 9 minutes/cow/day to 6 minutes/cow/day

