Worksheet 8: Estimating Access to Feed and Water

Average Feed Bunk Access Time

(Length of feed bunk / 2 ft*) x (24 hr – Total milking time) = Total cow access time

Total cow access time / No. cows in the pen = Average feed bunk access time / Cow

or

No. of lockups x (24 hr – Total milking time) = Total cow access

Total cow access time / No. cows in the pen = Average feed bunk access time / Cow**

* 2.0 feet for 1st lactation cows and 2.5 feet for older cows

**This equation assumes that edible feed is always available in the feed bunk. If the bunks are without feed for any length of time this time must be taken into consideration.

The minimum eating time of cows fed TMR diets in a non-competitive tie stall environment and producing 80 to 90 lb of milk is 6 to 7 hr (Dado and Allen[1]). It is felt that high producing cows in early lactation, in a competitive freestall environment should have 12 hr access to feed in order to maximize dry matter intakes.

Water Access

Midwest Plan Service Free Stall Handbook recommends a 2-foot water tank perimeter for every 15 to 20 milk cows. Water intake varies greatly and is determined by age, stage of lactation, production and season. Cows in a non-competitive tie-stall environment with free access to water will drink an average of 14 times each day and it will take them approximately 20 minutes each day (Dado and Allen[1]). In a competitive freestall environment, it is felt that it may take a minimum of 30 to 40 minutes of water access time to allow each cow adequate time to drink.

Linear feet of water space / 2 ft x (24 hr – Milking time) = Total water access time

Total water access time / No. cows in the pen = Average water access time / Cow

Water access is really only half the concern relative to water availability. The water must also be clean and palatable in order that optimal water intake needs are met.

[1] Dado, R.G. and M.S. Allen, 1994, JDS 77:132-144.