

National FFA Convention – Housing and Facilities Scenario October 2014

Answer Key:

FFA Dairy, LLC has several positive strengths. Overall, the production is good for a mixed Holstein/Jersey herd, and the milk components are very good.

Major Considerations:

- **Groups are too large and there are too many cows for the number of stalls:** Overcrowding of the stalls is a general concern for all of the lactating cows except the current fresh cow group. Each of the pens are overcrowded between 13 to 28% on the number of stalls.
- **Limited bunk space:** For feed bunk space, overcrowding is a severe challenge in the 6-row free stall barn. These cows have less than 15 inches of bunk space available when the recommendation is for 24 inches. Fresh cows have 20 inches of bunk space and are recommended to have at least 30 inches per cow. The 4-row barn at the current stocking rate has 20.6 inches per cow, better than the 6-row barn but still short of the 24 inch/cow recommendation.
- **Freestalls too small:** Perching in the stalls is an issue for the cows (as pictured in Figure #3). This indicates a lack of cow comfort. This is likely an issue because the cows are too large for the stalls.
- **Limited sand bedding:** The level of the sand bedding in the free stalls (Figure 5) is too low. The low level of sand bedding makes the stalls less comfortable and essentially shortens the length of the stall since the back curb is exposed.
- **Redistribute groups of cows within barns:** The Jersey cows should be moved to the 6-row free stall barn. Since they are smaller cows, they would fit better in the free stalls (the width is only 44 inches). The fresh cows, high group of heifers and mature cows may be best housed in the 4-row free stall barn
- **Waterer Space:** There is not enough water trough space for the cows in the 6-row free stall barn.
- **Heat abatement:** Cooling during the summer appears to be an issue on this dairy operation. Soaker lines could be installed in the free stall barns to assist with cooling. Also, installing fans and soakers in the holding pen would be beneficial to cool the cows as they are bunched during this period.

Minor Considerations:

- The employee should not be bringing up the 2 pens of low cows at the same time. This results in those cows spending a very long time in the holding pen each day (approximately 6 total hours of holding pen time). It also allows for these cows to be

mixed up into a different pen at each milking, thus the social hierarchy in these pens could change at each milking.

- The cows that have just calved and the hospital cows are all housed in the same pen together. This increases the potential for the spread of diseases.

Question #1 – Immediate investment to improve performance:

Purchasing fans and sprinklers for the holding pen would help cool cows while they are waiting to be milked. In addition, adding sprinklers over the feed bunk in each of the free stall barns and replacing or adding fans needed for good air movement would help reduce heat stress. Additional purchases could include additional water troughs to increase amount of water space per cow and lighting for 16 hrs of light and 8 hrs of darkness during the winter/fall months to increase milk production.

With an investment limited to \$25,000 at this time, additional barn space is not an option even though it is needed with the current sized herd. Redistributing the number of cows per group within this facility is a possibility.

Question #2 – Feed rails compared to head locks:

There are some advantages and disadvantages to each. Probably the greatest disadvantage to headlocks is the cost to install them in the barn as they are much more expensive than installing a feed rail.

Another disadvantage is that some cows do not like to put their heads through headlocks.

Cows need to be trained

to use headlocks, which often times is done when they are heifers. Major advantages to head locks is that cows are able to be “locked up” or caught, which allows for administration of shots, breeding cows, and other basic veterinary care. Headlocks result in less cows being displaced from the feed alley. Headlocks do need to be managed to make sure that they are opened and closed when needed to allow cows to be able to eat and to prevent cows from standing for excessive periods of time. A concern with feed rails is that they need to be placed in order to prevent cows from getting out of the pen or stepping into the feed, but improperly placed feed rails can prevent cows from being able to adequately reach feed and can cause rubbing and sores on the necks of cows.



Question #3 – Sizing of a new milking parlor:

To milk 2200 cows, 3x/d, all of the cows would need to be milked approximately every 7 hours to allow for cleaning after each shift. This would mean ~315 cows need to be milked each hour. Assuming 4 turns of the parlor per hour, 80 cows would need to be milked each turn. Therefore, the parlor would need to be approximately a double-40.