

“How Many is Too Many?”

By Brian Reed DVM, MBA

“Hey, Doc, how many cows do you think I should have in this barn?” This is a question I have been asked many times over my career. One would think this should be a simple question to answer. There must be some common recommendation based on research that gives a specific numerical answer such as 100% or 115% of the number of available freestalls in the group. Various industry experts have recommendations on this issue, although their recommendations may vary. Some cow comfort and animal well-being programs may have specific parameters in their guidelines as well. I have personally been in facilities that have varied from 80% to over 200% cows per available freestall – with varying degrees of success. Those of you who know me probably realize my answer will most likely be “it depends,” followed by some discussion about the specifics of your situation.

Why do I say it depends? If the answer only depended on every cow having a stall to lie down in (assuming they all want to lie down at the same time), the simple answer would be 100%. Depending on other factors, it may be more or less likely that this is necessary in your barn. If you have an AMS (Automated Milking System), short times in the holding area, extremely cow-comfortable stalls or frequent push-up of feed around the clock, you will find your cows most likely don't wish to lie down all at the same time. In these situations, both animal performance and well-being can be achieved at higher animal densities. They will fulfill their lying down time required for their time budget at a more evenly distributed pace.

However, if your cows have an extended time in the holding area, limited bunk space, poor feedbunk management, poor stall design leading to “perching” in stalls or poor foot health, you will find the performance and comfort of the animals is affected at a much lower cow density. In these situations, the cows will want to do the same key things at the same time, leading to cows trying to lie down at the same times. Think of this as a “surge” capacity. Since they all want to do things at the same time, you must meet this surge demand to achieve optimal performance within your system. If you are able to alleviate and improve the previous situations, you may not only be able to increase your animal density, but also improve individual performance of all the cows in the group. Other capacities of your barn to consider in the same manner could include availability of water, fresh air entering the barn, removal of stale air and water vapor from the barn, and effectiveness of cow cooling systems in place. These capacities are not necessarily related to the number of freestalls, but rather to the number of cows in the facility. When these factors are improved, better animal performance occurs.

From a financial perspective, why do dairy farmers want to increase their animal density per stall? The most obvious reason is that fixed costs on the farm can be spread out over more cows or pounds of milk sold from the farm. This dilution of costs can improve the cost of production per unit of milk sold, as well as increase the scale of the operation in a positive cash flow

environment. When building new facilities, decreased costs per cow can be achieved by spreading costs over more animals as well.

There is a point, however, when variable costs can start to rise in relation to milk production. This could stem from either increased variable costs and/or decreased output per cow versus a lower density situation. Increased variable costs might show up as increased treatment costs from damaged teats or other injuries, increased foot and leg health costs, higher culling costs and changes in components. Decreased output per cow can occur due to inadequate lying times, stresses due to slug eating, stresses related to transition cow issues, poorer feed efficiencies from stressed cows and effects of poor foot health. You can probably think of other ways in which overcrowding beyond a certain point starts to affect various things on your farm.

Almost every on-farm service provider can share experiences of a farm that sold 5 or 10% of the cows without seeing a drop in milk sold from that group of cows. These are examples where, due to the various conditions I described in this article, the animal density was pushed too far and is actually hurting the farm financially. They have costs for owning, feeding and caring for more animals than they need without an increase in overall production. Variable costs have gone up and there is no dilution of fixed costs at this point. The challenging part is figuring out where the optimal point is on your farm where you are maximizing your profits, rather than just churning through dollars and not making any more money. The other important consideration is how this affects the comfort and well-being of your livestock.

I urge you to work with all of your on-farm advisors to help you determine not only the optimal animal density in your facilities, but also to help identify the ways you can improve your management practices and facilities. This should improve both the comfort and performance of your herd, while improving your checkbook at the same time. Now you know why my answer is “it depends.”