Key Messages from Training on Youngstock Housing and Ventilation
By Lindsay Ferlito

At the end of September, I had the opportunity to attend a training on youngstock housing and ventilation hosted by the University of Wisconsin Dairyland Initiative. It was a great opportunity to learn more on the latest recommendations as well as see how people are doing things in other areas across the country. Below are some key take home messages from the training.

Individual and group housing both work
Individual calf pens are better for biosecurity and identifying and handling sick calves, but there are some learning and social benefits of group housing. With individual housing, ensure pens are not too closed up and there is still fresh air reaching each animal. For group housing, have fewer than 12 calves/pen, and keep calves in individual pens for the first 3-14 days to get them off to a good start. A good compromise is pair or triplet housing, where calves are in individual pens and then every other pen divider is removed once calves are 1-2 weeks old. An "all-in-all-out" system is recommended for groups. The presenters showed examples of an ideal situation where farms built multiple small calf barns that could be filled within 2 weeks, and used these to do all-in-all-out to the fullest degree. Although most farms here can't do that, there are still benefits to all-in-all-out pens. For example, smaller, stable groups are associated with increased ADG and lower respiratory health issues.

Picture from Dr. Ken Nordlund, University of Wisconsin-Madison, showing multiple all-in-all-out calf barns.

Pens should be filled within 1-2 weeks, and the group kept stable. Wait at least one week after weaning before moving calves to give them time to adjust, and then keep the pen empty for a week to provide enough time to clean, sanitize, and dry out the pen before the next group starts filling it.

Provide calves with adequate space
Calves should be provided with at least 35 sq ft/calf of space, regardless of housing and pen type. Calves should also have adequate access to nipples or buckets for milk (more than 1 or 2 nipples in group pens) and about 12 inches of bunk space to consume starter. Additionally, calf barns should be designed to house 120-130% of the calves expected with the average calving rate. This ensures there is enough room for all calves even during peak calving months. These space recommendations come with valid reasons; studies have found that there are lower pen bedding bacteria counts in stalls where calves had more space, and anecdotal evidence suggests there may higher respiratory illness prevalence when calves have less than 35 sq ft/calf.

Provide lots of bedding and drainage
In the winter, providing calves with ample bedding and a nesting score of 3 (legs are not visible when they are lying down) is associated with a decreased prevalence of respiratory disease. Another way to

achieve this is a nesting score of 2 (legs partially covered) and a clean, dry calf jacket. Proper pen drainage is key to keeping bedding dry and warm. Individual and group pens in the barn should have draining at the front of the pen to reduce moisture and liquids from dripping back into the bedded area. Hutches should be placed on a bed of small gravel/pea stone or sand to keep them up off the main ground and provide drainage.

Provide adequate ventilation

When designing a ventilation system for a barn, 3 things should be considered: air exchanges per hour based on barn volume (ach), volume of air per animal (cfm/cow), and air speed (mph). The goal is to provide fresh, clean air to calves without creating a draft at calf level. The recommendations are to have 4 air changes per hour in cold weather, 15-20 in moderate weather, and 40-60 ach in the summer. Natural ventilation doesn't always provide adequate ventilation rates for many reasons, but positive pressure tubes are a great way to increase ventilation to each pen in the barn. For questions on barn ventilation or designing a tube system for your calf barn, contact Lindsay Ferlito (Lc636@cornell.edu, 607-592-0290).