***Abstract:***

A cross-sectional observational study on organic dairies had the objective of identifying whether bulk tank milk quality, udder health and hygiene outcomes were associated with facility type, and whether bedded pack systems are a viable option for winter housing in VT. We aimed to collect bulk tank milk samples, udder hygiene scores, and complete a survey on mastitis risk and bedding management on 40 farms, in order to compare the two most common winter housing systems in the state (freestalls, tiestalls) with those using a bedded pack. The survey was completed on 21 farms (5 bedded packs, 6 freestalls, 10 tiestalls) before interruption due to the pandemic. DHIA information captured included avg. linear score (LS; unweighted and weighted by production), % cows with any intramammary infection (IMI; LS ≥4.0), % cows with new IMI (LS <4.0 to ≥4.0), and % cows with chronic IMI (≥4.0 last 2 tests). There were no significant differences between bulk tank udder health measures, aerobic culture data, and hygiene scores between facility types. As sample sizes were limited, a multivariable model to describe outcomes by facility type was abandoned in favor of univariate linear regression to identify associations between management factors and outcomes for all farms combined. Farms with deeper bedding showed a tendency (p ≤ 0.20) toward a lower bulk tank SCC, lower % new IMI, lower % any IMI, lower weighted and unweighted average LS, and improved hygiene metrics. Farms with lower mean udder hygiene scores tended towards having lower % chronic IMI, lower % any IMI, and lower weighted and unweighted average LS. Increased bedding depth measures tended to be associated with improved udder hygiene metrics. Although statistical power was limited, the current study provided insight on factors affecting bulk tank milk quality, udder health and hygiene measures on organic dairy farms in Vermont. Additionally, outcomes for bedded packs were comparable to more commonly used winter housing systems, and are therefore a viable option for pasture-based herds interested in a loose-housing system in VT.