

# EFFECTS OF PRODUCTION SYSTEMS ON THE SUNDRY COSTS IN TROPICAL DAIRY FARMS

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## RESUMO

Farms with large milk production demand a great cost with maintenance of fences and machinery, purchase of fuel and materials for cleaning facilities and animals, etc. Thus, farmers must be more capricious and detail oriented, aiming at the use of these inputs in a more rational way, reducing the cost of superfluous things within their properties. We aimed to compare the sundry costs of dairy operations in Compost Bedded Pack (CBP), Free Stall (FS), and Drylot (DL) systems. We collected data from 960 Brazilian farms over 120 consecutive months. The production level of the farms ranged from 150 to 10,000 L of milk/day. Milk production of the farms was calculated by converting revenue beef sales (surplus animals) to the equivalent amount in milk with the same revenue and called the equivalent milk production equivalent (MYeq). In our study, sundry costs represent all costs but concentrate, roughage, labor, medicine, and depreciation. For instance, fuels, maintenance of fences and machinery, manure treatment, fans, cleaning, and sanitizing supplies, etc. are included in surplus costs. Sundry cost was modeled for two animal production categories: milking cows (MC) and non-milking animals (NMA). We used a regression model that included linear and quadratic parameters, and we added the production system as a fixed variable for all parameters tested with this model. Consultant, year, herd, and herd  $\times$  system interaction were included in the model as random variables. Sundry costs (\$/farm/year) for MC were quadratically (convex) related to MYeq ( $P < 0.001$ ). The hired labor cost of the three systems was similar for MYeq up to 5,000 L/day. When MYeq was greater than 7,100 L/day, DL costs increased sharply and surpassed other systems. For NMA, hired labor were linearly affected by MYeq and the production system affected the regression slope ( $P < 0.001$ ). FS required the most hired labor, followed by DL and CB. In brief, the drylot system has greater sundry costs on farms with large milk production. This must be associated with greater costs for the maintenance of the fences, with fuel to carry out the feed handling of the animals and the use of material for cleaning, once these animals have more udder dirt due to mud formed in the paddocks. In conclusion, the drylot system had more costs with sundry as the level of production increased.

**PALAVRAS-CHAVE:** Nutrition and production of ruminants, Compost bedded pack, Drylot, Free stall, Maintenance

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