

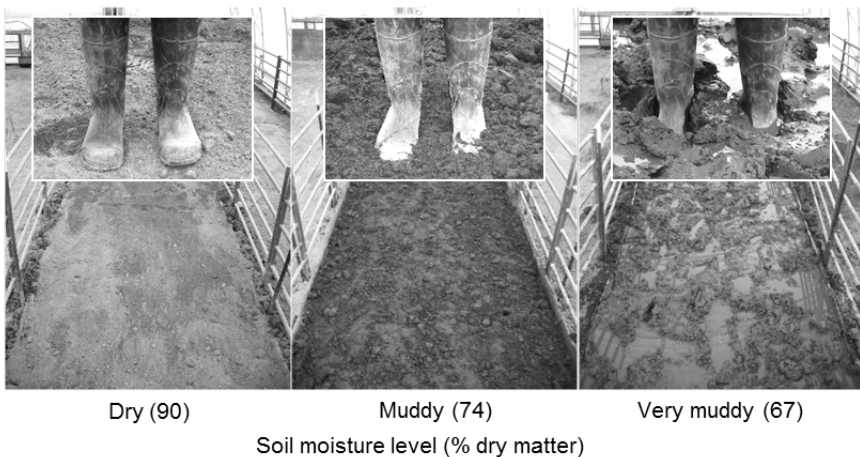
# Muddy conditions reduce cattle comfort

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On pasture or in drylots and bedded packs, moisture can create muddy surfaces. Dairy cattle show signs of increased stress in rainy and windy conditions, but no work has separated the effects of inclement weather from muddy conditions underfoot. Our objective was to evaluate the effects of muddy surfaces on lying behaviour, hygiene, and physiological responses.

We housed 6 pairs of pregnant, non-lactating dairy cattle in covered pens with dirt floors and a concrete feed apron. Cattle were exposed to 3 levels of soil moisture (see *photo*) for 5 days each.



Cattle spent less time lying down in muddier conditions, especially during the first day, when they spent only 4.7 hours lying down on the muddiest surface compared to 12.3 hours on dry soil. When the soil was dry, cattle never chose to lie down on concrete, but in the muddiest conditions they spent over half of their lying time on concrete. When cattle chose to lie down on wetter soil, they tucked their legs beneath their bodies more often, which limited the surface area exposed to their surroundings. Despite cattle spending less time on wetter soil, their legs, udders, and sides became dirtier in muddier conditions. In addition, exposure to wetter soil resulted in greater reductions in white blood cell counts relative to baseline levels, suggesting possible immunosuppression.

**Implications:** Muddy conditions, even in the absence of wind or rain, are aversive to cattle and have negative implications for their welfare. This study adds to the growing body of research showing that cattle are most comfortable on dry lying surfaces.