

5. Cow-calf contact in dairy systems: Impacts on production, animal health, farm economics and the environment

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Dairy calves in cow-calf contact (CCC) systems have more maternal contact and suckle until a later age than in conventional dairy systems, where cow and calf are separated shortly after birth. Cows and calves in CCC systems generally exhibit more natural behaviour and calves drink more milk, allowing them to grow faster than conventionally reared calves. A problem commonly experienced in CCC systems is the decreased saleable milk yield for the farmer, affecting farm economics. In addition, the impact of CCC systems on the environment is unclear. Moreover, CCC may affect metabolism, health and fertility of both cows and calves. We will perform an experimental animal study to assess the effects of CCC systems, with varying amounts of maternal contact and suckling, on milk production, metabolic status, reproduction, growth and health of cows and calves. In addition, we will model the effects on farm economy and environment, incorporating the variation in set-up and results of CCC systems in 4 North-Western European countries: the Netherlands, Germany, Denmark and Sweden. For an insight into herd economics, we will simulate herd changes over time while taking all associations between production, health and reproduction into account. For environmental consequences, we will use a life cycle assessment methodology for system effects on climate change, land use and carbon footprint. The knowledge acquired will supply farmers and farm advisors with a more integrated overview of consequences of CCC systems as well as the variation in design and results of CCC systems under practical circumstances.