

ProYoungStock final project summary



Project purpose

The ProYoungStock project aimed to improve the lives of young cattle and conducted research in 8 European countries: Austria (AT), France (FR), Germany (DE), Italy (IT), Poland (PL), Slovenia (SI), Sweden (SE), and Switzerland (CH). Interviews with 104 dairy farmers in AT, FR, DE, IT, SE, CH showed that many diverse cow-calf contact systems (CCC) are practised in Europe. Better animal welfare and reduced labour were perceived as benefits of CCC, while stress when cow and calf are separated, lower amounts of saleable milk, and building constraints were seen as challenges.

Final project summary

Trials in different countries with either focus on feeding strategies (e. g. more milk, use of supplements as linseeds or tannins, silage vs. no silage) or different rearing systems (i.e. 7 different CCC systems compared to control without CCC) revealed the following results concerning:

Calf growth: Calves benefited from increased milk levels (10-12 l/day compared to 6-8 l/day) (DE, AT), from permanent CCC compared to control (PL), from CCC when fed by dams before morning milking and with 6 h/day access to dams until weaning. But there was no impact when CCC of 6 h/day was carried out for only 3 weeks (FR) as well as when CCC was restricted to 2 x 30 min/d until 16 weeks of life. These results show that CCC alone does not necessarily promote calf growth!

Behaviour disorders and welfare: Main behaviour disorders in calves are sucking each other (cross sucking) or manipulating any objects with their mouth. We observed less cross sucking in calves with permanent foster cow contact and with 2x30 min/d contact to the dam (CH, PL). Calves with permanent foster cow contact also manipulated less objects compared to bucket fed calves (PL). Increased milk feeding (DE) and limited access to the dam 2x30 min/d (CH) however, did not reduce those manipulations. CCC calves had lower hair cortisol contents (less stress) before weaning, but after weaning they vocalized earlier and longer (indicating stress) than control calves. (FR).

Calf health: Immunoglobulin-levels in calves' serum from mothers supplemented with linseeds 30 days before and after calving were higher than in calves from control mothers (PL).

However, calf health in 5 variations of CCC systems did not differ compared to control systems (PL, FR, SE, and CH). We found no relevant effect of CCC on the gut microbiota development in calves, nor on the passive immune transfer from cows to neonatal calves (FR), nor on a further build-up of the active immune defence during the pre-weaning period (FR, CH).

Cow health: There were no differences in somatic cell count (udder health indicator) and cows' health events in 3 variations of CCC-systems compared to control (FR, SE). CCC practices did not influence contents of immunoglobulin G and lactoferrin in cow's milk (FR, CH). Reproductive performance of multiparous cows did not differ between CCC and control, but was improved in primiparous cows in CCC systems (FR, CH, and SE).

Extensively reared animals showed lower disease incidences than animals that did not have this experience (AT, FR), but there was no influence of extensive rearing on calving interval (AT, FR, SI). There was no difference between farms with or without silage feeding regarding reproduction (AT, DE, SI), but a negative effect of silage free rearing on udder health was found (AT, DE).

Milk contents: In CCC-systems we found higher protein contents and lower fat contents (except when calves suckled before milking) than in milk from control cows (FR). Linseed-feeding before calving increased unsaturated fatty acids in colostrum (PL). Milk and fat yields were higher with silage feeding than without in AT, DE, FR, but lower in SI. Feeding tannin extracts to cows during the dry season (hay feeding) revealed lower urea contents, a better fatty acid profile and a higher antioxidant capacity in milk and cheese (IT).

Meat quality: pH of meat 24 h after slaughter was lower in calves with foster cow rearing, but the main fatty acids did not differ between calves from CCC systems and control (PL, CH).

Economic impact of CCC: CCC systems produced 21% to 43% less saleable milk compared to control. The best compromise between milk yield and calf growth was reached with 6 – 9 h CCC between morning and evening milking until weaning (SE, FR).

Ecological impact of tannin feeding: In vitro blended tannin extracts reduced ruminal protein degradation and ammonia and methane emissions; especially when hay feeding was simulated (IT).

As there is no one-fits all solution (but there are many pieces of a puzzle), the large variation in management led us to organise many workshops for farmers, so they could exchange on the diverse possibilities of CCC and find out which is the best one for their farm. Those workshops are great to introduce CCC-systems because farmers advise farmers.



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