

SusCatt - Increasing productivity, resource efficiency and product quality to increase the economic competitiveness of forage and grazing based cattle production systems

Profitability of dairy and dairy × beef breed steers in beef production based on forage and semi-natural pastures

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About

Could steers born into dairy herds offer grazers a profitable climate-friendly opportunity to maintain biodiversity? We compared the economics of pure-bred dairy and beef-cross steers under two forage and pasture-based production systems, in three Swedish regions covering a range of conditions for forage, pasture and grain production.

Objective

The income from steer beef is a combination of slaughter income, agri-environmental payments and other support. This study investigated if crossbred steers had an increased profitability compared to pure-bred dairy calves in two different production systems based on forages, grazing more or less semi-natural pastures, and access to more or less agri-environmental payments and supports.

What did we do?

The study was based on a trial reported in [SusCatt technical note 2.1.1](#). Steers of two bred combinations (dairy vs. dairy x beef) were compared in two forage feeding systems. The first one included moderately high indoor feed intensity, one summer on grass and slaughter at 21 months of age, whereas the other system meant low indoor feed intensity, two summers on grass and slaughter at 28 months of age. An enterprise budgeting technique used data from the original all-in-all-out system to assess profitability of continuous rearing, assuming calves were born throughout the year. Profitability was assessed for three different geographical Swedish regions;

1. plain district (PD) of southern Sweden, no less-favoured area (LFA) support and steers grazing grass ley.



The author Kristina Holmström with her study objects. Photo: Anna Hessel.

2. forest district (FD) of southern Sweden, situated in a LFA, where steers solely grazed semi-natural pastures.
3. northern Sweden (ND) within LFA, where the steers grazed 20% semi-natural pastures and 80% ley.

All semi-natural pasture was assumed at 70% land rendering agri-environmental payment at a basic level (100 Euro/ha) and 30% of high biological values, eligible for a higher agri-environment payment (280 Euro/ha). In addition to basic calculations, sensitivity analyses were conducted to allow using existing building without an alternative profitable use and if agri-environmental payments and support were 20% lower than present.

Higher income from older steers

The enterprise budgeting calculations showed that choice of production system influenced incomes more than the breed combination. Older, heavier steers, grazing over two seasons, generally gave higher revenue compared to younger and lighter steers, only grazing one season. Interestingly, in the two LFA eligible regions, payments from agri-environment aid and supports were almost as high as that from the carcasses, especially for the older steers.

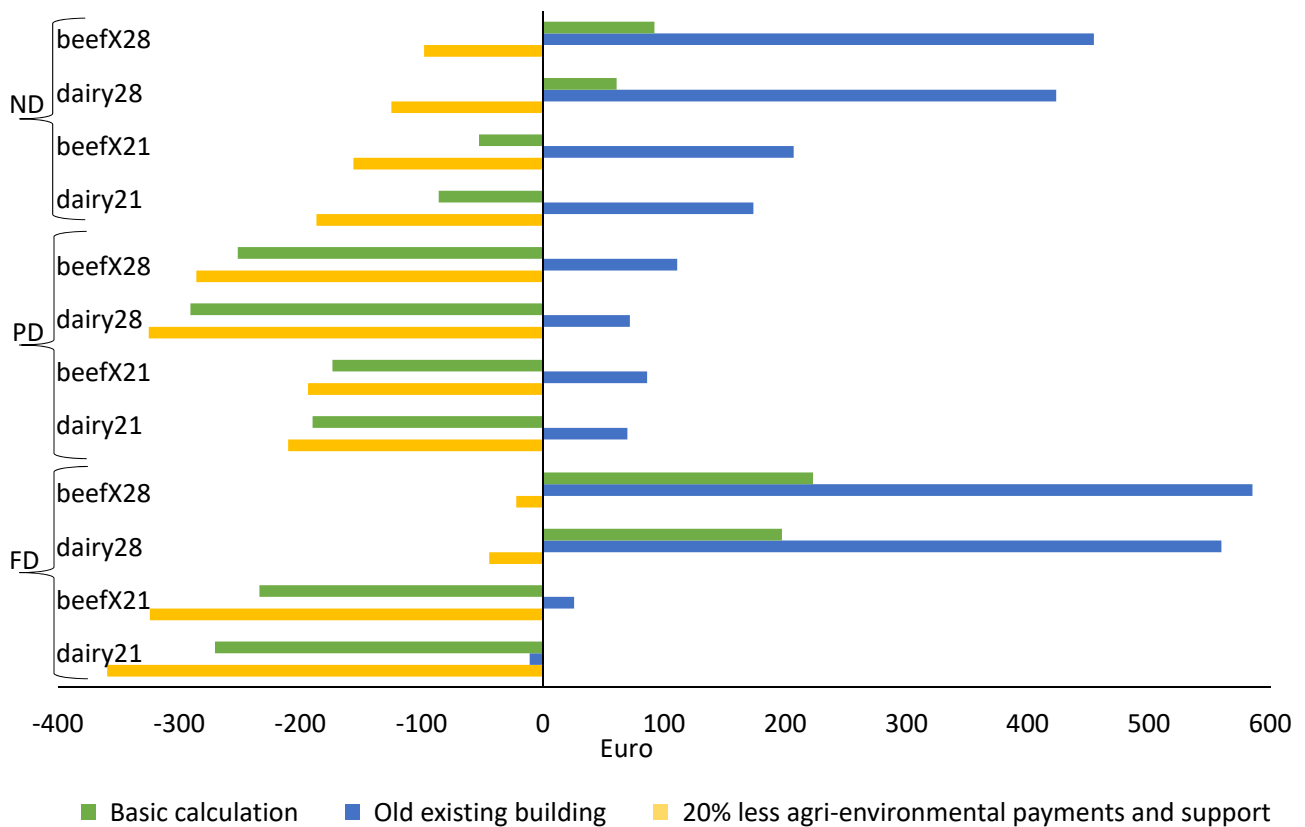


Figure. Basic calculations and sensitivity analysis for profitability (Euro/steer) of purebred dairy steers (dairy) and dairy-beef crossbred steers (beefX) reared at a moderately high feed intensity and slaughtered at 21 months of age (21) or at a low feed intensity with slaughter at 28 months of age (28), in plain district (PD), forest district (FD) and northern district (ND) of Sweden.

Small differences in costs

The largest cost was for silage, followed by labour, calf purchase and buildings. There were only relatively small differences between the twelve rearing combinations tested. However, there was a difference in cost between breeds when purchasing calves as the beef cross were more expensive. Differences between the systems were driven by higher feed consumption and associated costs, but also labour and building over the extra seven months before slaughter for older cattle. Costs were similar between the regions except for silage making, due to differences in forage yield and harvest machinery chains.

Economical results

You can see in the Figure that choice of beef semen for dairy cows is not a major factor influencing profitability – compared with access to agri-environmental and support payments or higher returns following a longer, less intensive finishing system. The figure also indicates, if agri-environmental payments and supports decrease by 20% all steer rearing systems would lose money with negative margins. However, if existing buildings without other profitable uses could be utilized, all rearing systems would yield a positive margin, or at least break even, given the agri-environmental payments and supports of today.

Using beef semen or not in dairy cows is not the big question for profitability in forage based beef systems. The most important issue is the access to agri-environmental payments and supports, where the extensive system with two grazing periods gives better profit than slaughter young steers after a more intensive rearing.

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