

Not All Cows Are Alike: Cattle Breed Affects Pasture Vegetation and Diversity

The pastures of low-productive Highland Cattle are particularly species-rich because of this breed's relatively low weight, undemandingness and slowness. This is borne out by Agroscope and AgroVet Strickhof studies.

Caren M. Pauler and Manuel K. Schneider



Hardy cattle such as the Highland cow are particularly well suited to the management of marginal-yield sites.

Low-input pastures are among the most biodiverse habitats in Europe. Formed over millennia by the interaction of grazing livestock and vegetation, today these pastures are threatened by both intensification and abandonment. In addition, livestock breeding has dramatically increased the productivity of many cattle breeds. Agroscope and AgroVet Strickhof studies demonstrate that breeding has also altered the foraging and movement behaviour of cattle, a fact that has far-reaching consequences for pasture vegetation.

Low-productive breeds: light, undemanding, slow

Low-productive cattle weigh less than high-productive breeds. Since they also have relatively large claws, the pressure exerted by their weight is spread over a comparatively large area, which protects the sward. In addition, they cover less distance on the pasture, which

further reduces trampling impact. Consequently, plant species indicative of trampling are far more common on the pastures of high-productive, heavy breeds. These trampling-adapted plants outcompete more-susceptible species, thereby decreasing biodiversity.

The more productive a breed is, the more selectively the animals graze. High-productive cattle prefer nutrient-rich, easily digestible forage plants, whilst low-productive cattle also consume mat grass, thistles, and other 'unappealing' plants. In this way, they reduce the dominance of problem plants, which in turn promotes pasture biodiversity and forage quality. Moreover, low-productive Highland Cattle graze the pasture more evenly by visiting steep slopes and areas of low forage quality more frequently than high-productive breeds. Consequently, there are fewer over- and underused areas in their pastures.

Exploiting the potential of low-productive breeds

Low-productive cattle can make efficient use of low-input grassland in marginal-yield locations, thereby promoting biodiversity. On many farms, the livestock population can be supplemented by an extensively reared 'service herd' with minimal effort and expense.

The positive traits of low-productive cattle appear to be closely associated with their low output. Breeders should therefore bear in mind that these desirable traits could be lost if breeding were geared towards higher output. —

Conclusions

- ▶ Today, the biodiversity of low-input pastures which arose over millennia through extensive grazing is under threat.
- ▶ The study demonstrates that cattle breeds differ in terms of their impact on vegetation.
- ▶ Low-productive cattle breeds with large claws preserve the sward. They graze unselectively and thus help to keep problem plants and shrubs at bay.
- ▶ Low-productive cattle breeds use the pastures more evenly, thereby promoting the biodiversity of low-input grassland. They can be a worthwhile addition to livestock, e. g. for using ecologically valuable land.
- ▶ The desirable traits of low-productive cattle breeds may be lost when breeding is geared towards higher output.

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