

Mixed grazing systems with alternative livestock

All grazing animals are selective feeders and continuously make choices about which plant species and plant parts to target when feeding. This leads to the diet they consume usually having a higher nutritional value than the average for the pasture being grazed, although there are trade-offs with the amount of energy spent searching if preferred items are difficult to find.

A key factor influencing grazing behaviour is overall body size. Due to their larger body size and greater herbage requirement, cattle are less selective grazers than sheep, and previous studies at IGER/IBERS have shown this leads to

opportunities for complementary grazing, improved animal performance, and a higher total output per unit area when they are pastured together in mixed grazing systems. This is due to a combination of factors, including the less selective cattle consuming stemmier, more mature patches of grass avoided



by the sheep, the cattle being unable to select clover as efficiently as sheep, lower worm burdens for both species, and a reduction in sward rejection due to dung contamination.

Cattle grazing can also be crucial to increasing or maintaining biodiversity in upland areas where species such as *Molinia* (a.k.a. purple moorgrass) or matt grass (a.k.a. *Nardus*) dominate. While cattle, like sheep, will also avoid grazing these grasses where possible, their greater overall daily nutrient requirement means that they are forced to switch to eating these more quickly than sheep when the availability of preferred food items declines.

However, although mixed grazing has many benefits, the number of cattle on farms in the uplands has continue to decline due to issues such as TB testing, provision of winter housing, manure management, and labour requirements. We are now exploring mixed grazing systems with alternative livestock species which could more easily be incorporated into a sheep-based system. Goats and alpacas also have

different grazing preferences to sheep, and can be fed, handled and shorn using standard sheep equipment. Experiments are underway comparing nutrient use efficiency and methane emissions, as well as the potential for their grazing to improve biodiversity.

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