MONITOR FARM Scotland

FARMER LED, FARMER DRIVEN

Deeside Monitor Farm Case Study
Maximising the Potential of Forage Crops
A Monitor Farm Scotland Innovation Project
Contractor: SAC Consulting

Duncan and Claire Morrison, Monitor Farmers

The Deeside Monitor Farm Forage Crop Innovation Project followed and evaluated several outwintering systems in winter 2024/25.

Duncan and Claire Morrison have over wintered their herd of 250 suckler cows at Meikle Maldron for several years. Facilities for housing cattle are extremely limited on their farm and they focus on producing good quality forage.
They managed kale and bale grazing through the 2024/25winter..

Establishment

Duncan sows kale on an annual basis. The kale crops follow either the previous year's deferred grass winter area or arable silage. Caledonian is the variety of choice due to its high yielding potential.

Crop establishment is low cost, with the seed bed power harrowed, before broadcast sowing, with inorganic fertiliser at the end of May. This is followed by a roll to maximise seed-to-soil contact and retain soil moisture to aid germination of the seed.

MANAGEMENT

Bales were sited throughout the crop, early in the season. This aids soil health throughout the winter by excluding the need for heavy machinery.

The crop was yielded and analysed prior to stock being introduced.

	Dry Matter (%)	Crude Protein (%)	ME (MJ/kg DM)	Yield t DM/ha
Kale (DM)	18.90	30.67	12.70	8.97

Table 1: Duncan's kale crop analysis, 24/25

UTILISATION

The 5ha crop was utilised by 85 cows, for 43 days, grazed in situ behind an electric wire. Once the kale was finished, cows were moved on to an area of deferred grazing.

DEFERRED GRAZING

Duncan introduced bale grazing on deferred grass in 2024 for winter feeding his in-calf cows.

ESTABLISHMENT

Bale grazing planning began in the spring when the field was shut off to allow forage conservation.

Hay was cut from a 30-acre field in late June, chosen for outwintering as it the grass yields had begun to under perform.

This 7 year old grass field was one of Duncan and Claire's first reseeds when they entered the tenancy at Meikle Maldron.

Weather conditions deteriorated while making the hay and a small amount of these bales were wrapped.

The field yielded approximately 270 bales or 9 bales/acre.

The bales were then placed in three lines along the field, and the field was shut off to build a wedge of deferred grass for the winter.

After baling and repositioning in rows, heavy machinery did not enter the field for the remainder of the year.

Duncan then purchased a bale unwinder that is operated by a quad. It unwinds the hay bales along the ground on the deferred grass for the cattle to graze.

MANAGEMENT

Duncan estimated the field would winter 110 cattle for 79 days.

The cattle finished this wintering area close to the steading, and they moved onto new pasture to start calving outdoors in April. He was extremely close with 114 cattle being on the system for 80 days.

A back fence was used to prevent cattle from trampling the whole field and allow the grass to come back and grow

The bale unroller worked well in the system. Ground conditions held up extremely well, and grass growth has been impressive following the cattle grazing. Duncan plans to use this field for deferred grazing again in winter 2025/2026 before being sown to kale

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ANALYSIS

The hay did not analyse as well as Duncan had hoped.

The deferred grass was also tested; this had been shut off since June 2024.

	Dry Matter	Protein	Energy
Maldron Hay 2024	77.60%	6.30%	9.30 MJ/kg DM
Maldron deferred grazing (Jan 25)	21.90%	12.40%	10.20 MJ/kg DM

UTILISATION

Karen Stewart, SAC Ruminant Nutritionist, assessed the diet for the 114 cows pre-calving.
Duncan feeds four bales (200kg) per day; assuming 10% wastage this gives 6.3kg/hd/day hay.
That provides 4.9kg Dry Matter per cow per day (with dry matter at 77%)
Deferred grass cover was measured at 3,150 kg DM/ha.
The fence is 456m long x 3m wide. That's 1,368m^2. So, 114 cows graze 12m^2/hd/day. (providing 4 metres grazing face per cow).
Allowing for a 500kg DM/ha residual (the grass left uneaten), then this gives 2,650kg DM/ha available. This is the same as 264 grams DM/m^2
12m^2 gives 3.2kg DM/hd/day (14.6kg FW) of deferred grass.

Putting the hay and deferred grass together, Duncan calculated that the ration was giving a daily dry matter intake (DMI) of 8.1kg, with 78MJ of energy and 8.7% crude protein. This is borderline for DMI, protein and energy. Duncan was advised to offer better forage to the cattle. e.g. Duncan had red clover silage available and could have increased the quantity of deferred grass as calving approached.
The winter was extremely kind, and the cattle were in good body condition. The weather favoured out wintering systems with dry soils and sunny days, which reduced the energy requirement for the cows. In other, less favourable years this may have needed addressed earlier. Duncan carried out blood sampling pre calving to understand the cows' energy and protein status. Blocks were offered to the cows to supplement their energy and protein levels on the run up to calving.
The cows held their condition throughout the winter and calved down well in the spring. The farm suits over wintering systems with its sheltered fields and free draining soil. The kale and deferred grazing allows the outwintering system an element of contingency planning. The deferred grazing is clean for the animals in wet conditions, and the kale holds up better in the snow. Duncan also has a stock of silage that can be offered to the cows if weather conditions turn for the worse, which can be fed in ring feeders or through the tractor mounted unwinder.

MONITOR FARM Scotland

To find out more or to sign up, please contact:

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