



Enda Linnane and Micheál Kelly, Teagasc.

Why kale is A-OK

Hailed as a superfood for humans, kale is also enjoyed by cattle on one south Galway farm. The crop is proving an ideal entry for a new grass sward, writes Teagasc Athenry's Micheál Kelly

Enda Linnane, who farms near Kinvara, Co Galway, has a flock of 65 early spring-lambing ewes, 20 hoggets, 30 spring-calving suckler cows and finishing cattle. With a difficult year behind him, and Brexit looming, Enda is cautious: "With prices as they are and the overall future outlook, we need to keep a keen eye on costs while maximising

the performance of stock at grass. That means reducing concentrates." The farm is in the limestone region of south Galway, where soils are shallow and grassland management is challenging. "With limestone so close to the surface, the farm is generally drier and benefits from earlier spring growth, but in scenarios like the drought of 2018 we are the first to take a hit," says Enda. "Due to a complete lack of rainfall, grass growth just stopped for a number of weeks last year. This quickly led to a grass deficit on the farm; and although grass growth exploded once the rain returned, the effects of the drought had a severe impact on total annual grass production."

A solution
Last year hammered home the importance of grassland management, and Enda is now involved in a local grass group and regularly measures grass on his farm. "We need to be better at forecasting grass deficits and identifying surpluses which can be taken out as bales,"

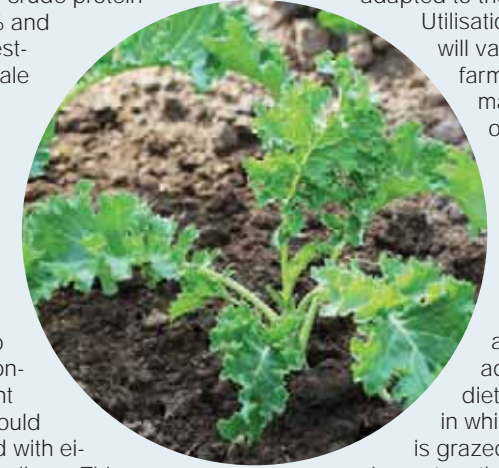
he says. "Reseeding is essential." Soil fertility is constantly monitored by soil testing – fertiliser and slurry are applied accordingly. Early lambing and prioritising weanlings from the suckler herd in the back end of the year, means dry matter (DM) performance in the 'shoulders' of the year is crucial. To help with this, Enda incorporated kale into his reseeding programme last year. "It was a field where some reclamation work had been completed," says Enda. "The old sward was difficult to break down, so we decided to set kale in the field. We hoped grazing the crop in-situ over winter would help to break down the old sod before reseeding it back to grass this spring." The annual average grass growth on Irish farms is 7t DM/ha over 12 months. Incorporating kale into the mix allowed Enda to grow more than the equivalent of this in a period of just five months. This relieved the grazing pressure on the farm after the summer drought, as it allowed areas which would usually be closed for second-cut silage to be kept solely for grazing for the remainder of the year.

Growing kale

Kale is generally sown in May and June, for feeding between November and February. To achieve high yields, kale should be sown by mid-June, as the crop will take approximately 150 days to mature. Sowing kale after mid-June leads to a lower dry matter (DM) yield, which puts the viability of the crop in question, as opposed to a direct reseed. Sloped or wet fields are unsuitable due to the risk of run-off from the crop; a potential breach of cross-compliance regulations. A suitable lie-back area from the crop should be available for stock at all times. Kale requires a soil pH of 6.5-7.0. Compound fertiliser is normally broadcast on the seedbed at sowing. Assuming an index 3 soil, a kale crop will require 30kg/ha of phosphorus and 170kg/ha of potassium. The overall nitrogen demand will be 130kg/ha, with some of this applied at sowing and the remainder as a top-dressing once the plant has emerged. A crop of kale is capable of produc-

ing 6-10t DM/ha, with a feed value similar to that of early spring grass. Kale is a high-energy feed source (1.12UFL), with a crude protein level of 16%-18% and a dry matter digestibility of >80%. Kale has a high sugar content but it is low in fibre, and therefore should not make up more than 70% of the total dry matter intake of the animal. In order to keep the rumen functioning and to prevent acidosis, kale should be supplemented with either hay, straw or silage. This 'long forage' helps prevent digestive upsets. It is also important to introduce kale into the diet gradually, allowing only a one to two-hour access period

on the first day, and building this up over the first week to 10 days. By then, the animals' rumens should have adapted to the new diet. Utilisation of the crop will vary from farm to farm, but with good management over 80% can be achieved. Utilisation rates tend to be poorer early in the grazing period, but improve over time as the animals adapt to the new diet. The direction in which the kale is grazed has a large impact on the utilisation rate. Ideally, kale should be grazed in long, narrow strips. In this scenario, the fence only needs to be moved in as far as the edge of the kale each day.



Feeding kale

Feeding kale takes careful management. "The cattle will graze under the wire once it is placed at the edge of the kale," says Enda. "If you set up short, wide strips the fence must be placed further into the crop. This will lead to increased trampling of the crop and wastage, as well as possible issues with the wire earthing off the crop unless a path is cut through the kale beforehand." The daily allocation will depend on the feeding rate and the animal performance required. Outwintered cattle should be offered approximately 3% of their bodyweight in dry matter (DM) each day. The higher intakes are as a result of an animal's higher maintenance requirements outside. For a 300kg weanling, this equates to 9kg DM/day. As kale should make up no more than 70% of the animal's dry matter intake, the weanling's diet will consist of 6.3kg DM of kale and 2.7kg DM of silage each day. Assuming the kale crop produces 8t DM/ha, with a utilisation rate of 80%, 6.4t DM/ha is being consumed by the livestock. On this basis, each hectare of kale has the ability to feed 25 weanlings (300kg liveweight) for 41 days. "Last year's kale has now been grazed out fully and will shortly be tilled and returned to grass," says Enda.



Brendan and Enda Linnane on his farm near Kinvara, Co Galway.

"We'll use the Pasture Profit Index to select grass varieties which meet the demands of our system. The field is close to the yard and will be predominantly used for grazing and we plan to sow a mixture of at most four varieties, with heading dates within a week of

each other and strong characteristics for spring and autumn growth. "So kale delivers for us on two levels, as a source of dry matter and by providing a good start for new grass swards. It is a key part of our system now."