



Pasture for Life

It can be done

The farm business case
for feeding ruminants
just on pasture

January 2016





Pasture for Life

The Pasture-Fed Livestock Association (PFLA) brings together British farmers committed to producing high quality food in a more natural way.

Many grassland farmers have joined, but we need many more to kick the 'grain habit' and start producing meat and milk from grass and forage crops alone, to meet increasing consumer demand.

It is hard to stop feeding cereals to livestock, if that is what has always been done. What are the physical and economic implications? How would this affect output and income?

This booklet has been written with the help of some of our member farmers, who also engage with the AHDB Beef & Lamb Stocktake costings service. They wanted to showcase their stories and tell us why they feel their way of farming is better for

human health, their farm business and the wider environment.

Our figures echo that of Stocktake. Making a living from beef and sheep farming is never easy. However, those that make the most of pasture can be profitable.

This is just a start. We will collect more data in future and work with more farmers, both conventional and organic, and in the lowlands and the uplands.

We hope this booklet helps encourage more farmers to join the PFLA. Visit pastureforlife.org.uk to find out more and to get involved, because it can be done.

A handwritten signature in black ink that reads "John Meadley".

Dr John Meadley
PFLA Chairman



Gathering the evidence

A challenging industry

Ruminant production has a vital role to play in global food security. Grazing systems can supply a high-value product while delivering a range of environmental and social benefits.

But, as UK industry figures show year on year, making a profit and a living wage from beef and lamb production remains a significant challenge for all farmers. Low, or indeed, negative net margins, are common in the red meat sector. The challenges currently facing the dairy sector are similarly well documented.

Without support from the Common Agricultural Policy (CAP), few livestock businesses are truly viable. As pressure increases to reduce CAP spending from around 40% of the EU budget, farming must become less reliant on public support. Cutting costs and seeking better returns by producing what the market wants, will be more crucial.

However, behind the industry averages and depressing trends, sit some exciting success stories. Many of these winners are feeding livestock on nothing but a natural diet of grass, wildflowers and herbs, following the Pasture for Life ethos.

Pasture for Life experience

This evidence booklet was instigated three years ago, when PFLA farmer members were asked to write down their Pasture for Life experiences. They talked about their farms, their animals and how they fed them. They also shared how they marketed their meat.

Twelve members submitted their data, which was collated and presented at the 2014 Oxford Real Farming Conference. This data forms the backbone of the case studies in this booklet.

The overpowering message was that pure pasture farming can work anywhere in the UK – from improved lowlands to the upland moors, it is being done. Members suggested that it is a *no brainer*, that *growth rates did not slow down since cutting out grain* and that a *healthy profit is surprisingly achievable*.

All indicated that the lower input costs were a crucial element of their business. This, in a world of volatile commodity pricing, can make Pasture for Life beef and lamb more resilient to external market forces.

It can be done

To strengthen the anecdotal evidence, the PFLA, working closely with AHDB Stocktake consultants, has collected additional financial and performance data from eight Pasture for Life case study farmers. This was analysed and compared to the Stocktake 2015 average and top third figures.

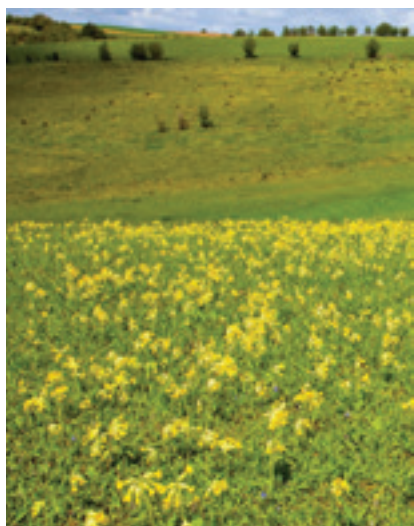
The results show that producing beef and lamb on 100% pasture and forage crops can be done and can be profitable.

By selecting the right breeds with the most suitable genetics, coupled with good grassland management, Pasture for Life farmers can rival and exceed the performance achieved by the top third of producers.

Taking the decision to stop feeding grain to livestock is not easy. But hopefully the business case for doing so is clearer. And as consumer demand grows for certified 100% Pasture for Life food, so will the opportunities for more farmers to benefit and receive better returns too.



Data Collection



Data was collected for the year between April 2014 and March 2015 as follows:

- Breeding sheep – three PFLA farms in lowland England (non-SDA) with breeding sheep flocks producing lambs (fat, breeding and store lambs). These farmers manage 1,100 forage hectares and 2,850 ewes
- Suckler cows – seven PFLA farms including six in lowland England (non-SDA) and one in the uplands (SDA) producing weaned calves. These farmers manage 1,650 forage hectares and 400 breeding cows
- Beef finishing – three PFLA farms in lowland England (non-SDA) who fatten weaned calves from their suckler cow enterprise. Most are sold finished, some as stores. These farmers manage 655 forage hectares and 75 fattening cattle

The farmers run a variety of organic, conventional, mob grazing and set stocking systems. Various breeds graze a mix of pasture types, including improved permanent pasture, temporary leys in an arable rotation and unimproved species-rich grassland and moorland.

Some lambs and cattle are sold directly via box schemes and farms shops, often attracting a premium price, although the majority follow the traditional routes to market.

A weighted average was calculated for the farm data so the larger flocks and herds show the biggest influence. This gives a more reliable system average.

The key financial and physical data was then compared to the Stocktake 2015 figures (industry-weighted average and top third) on a per ewe or per cow basis. The average stocking rates were used to calculate an indicative net margin per hectare.

As rental values vary significantly from farm to farm, this has been taken out of the equation. Grassland rents could be added back in at a rate of £267/ha – the current English average (RICS data).

In the future, AHDB Stocktake hopes to show the performance of Severely Disadvantaged (SDA) and Non-SDA, organic and conventional farms separately.

For more details on how Stocktake data is compiled and key terms and definitions, view the AHDB Stocktake 2015 report at beefandlamb.ahdb.org.uk

Breeding Sheep

Breeding Sheep Flocks (Non-SDA Farms)

£/ewe put to the ram

	PFLA Average	Stocktake Non-SDA Top Third	Stocktake Non-SDA Average
Gross output	93.39	104.04	104.12
Gross Output less Replacement Costs	89.27	93.06	92.69
Feed and forage costs	7.14	14.15	17.76
Vet and medicine	5.09	6.37	6.61
Other variable costs (bedding, ear tags, etc)	4.30	6.42	7.80
Total Variable Costs	16.53	26.93	32.17
Gross Margin Per Ewe	72.74	66.13	60.51
Labour (paid and unpaid)	30.02	20.97	28.29
Machinery repairs and contracting	6.23	3.48	5.43
Depreciation	2.50	5.58	7.31
Other fixed costs	9.92	8.76	10.91
Total Fixed Costs (before rent)	48.67	38.79	51.94
Net Margin Per Ewe (before rent)	24.07	27.34	8.57
Stocking rate (LU/ha)	1.1	1.1	1.0
(ewes/ha)	10	10	9
Net Margin Per Hectare (before rent)	241	273	78
Flocks in sample	3	26	80
Average flock size (ewes) (not weighted)	949	759	551
Number of full grass grazing weeks	52	48	47
Scanning percentage (%)	168	171	176
Lambs reared per 100 ewes put to ram	135%	141%	143%
Average age at sale (days)	175	155	152
Total DM concentrate fed (kg/ewe)	0kg	23kg	28kg



Financial Performance

- ✓ **Higher gross margins**
Although output (sales per ewe) is down due to lower lambing and rearing rates, the variable costs, particularly concentrate feed purchases, are much lower resulting in a very healthy gross margin
- ✗ **Higher fixed costs**
Higher labour and contracting costs result in increased fixed costs
- ✓ **Positive net margin per ewe**
Pasture for Life systems show a bigger net margin per ewe than the average farms and rival the top third of producers
- ✓ **Positive net margin per hectare**
Pasture for Life systems show a bigger net margin per hectare than the average farm. To surpass the top third of producers more work is needed on fixed costs and lambs reared

Physical Performance

- ✓ Pasture for Life farmers are committed to forage-based systems and hence **concentrate use is eliminated**
- ✓ **Animals graze outside all year round**
- ✗ **Scanning rates are down slightly**
- ✗ **Lambs reared per 100 ewes is less** than the average and top third. This is due to a lower lambing % and more lamb losses

Suckler Cows



Financial Performance

- ✓ **Good gross margins**
Although output is down, the variable costs, particularly concentrate feed purchases, are much lower resulting in a competitive gross margin
- ✗ **Increased fixed costs**
Higher labour, contracting and depreciation charges result in increased fixed costs
- ✗ **Net margin per cow and per hectare**
Pasture for Life systems echo the industry average and show a negative net margin. More focus is needed on increasing output and reducing fixed costs in line with the top third of producers

Physical Performance

- ✓ **Pasture for Life farmers are committed to forage-based systems and hence concentrate use is eliminated**
- ✓ **Animals graze outside** for a longer period of time than others systems
- ✗ **Scanning and weaning rates** are down slightly

Suckler Cows (Non-SDA and SDA Farms Combined)

£/cow put to the bull

	PFLA Average	Stocktake Non-SDA Top Third	Stocktake Non-SDA Average	Stocktake SDA Top Third	Stocktake SDA Average
Gross output	487.37	597.99	526.41	649.66	602.13
Gross Output less Replacement Costs	436.26	556.84	464.86	613.06	542.92
Feed and forage costs	33.53	95.44	105.84	81.53	111.43
Vet and medicine	21.07	27.73	29.15	40.68	39.35
Other variable costs (bedding, ear tags, etc)	37.89	41.46	49.29	43.09	42.83
Total Variable Costs	92.49	164.63	184.28	165.30	193.61
Gross Margin Per Cow	343.77	392.21	280.58	447.76	349.31
Labour (paid and unpaid)	127.91	114.90	137.65	116.02	119.33
Machinery repairs and contracting	71.79	63.50	65.71	55.39	68.52
Depreciation	100.41	54.75	76.35	76.64	81.15
Other fixed costs	98.95	84.68	93.92	102.91	107.90
Total Fixed Costs (before rent)	399.06	317.83	373.63	350.96	376.90
Net Margin Per Cow (before rent)	-55.29	74.38	-93.05	96.80	-27.59
Stocking rate (LU/ha) (where a cow plus calf = 1.1 LU)	1.1 (1 cow + calf/ha)	1.6 (1.5 cows + calves/ha)	1.3 (1 cow + calf/ha)	1.1 (1 cow + calf/ha)	1.2 (1 cow + calf/ha)
Indicative Net Margin Per Hectare (before rent)	-55.00	108.00	-110.00	97.00	-30.00
Herds in sample	7	26	80	13	41
Average herd size (cows) (not weighted)	57	96	83	67	70
Number of full grass grazing weeks	38	35	35	32	30
Scanning percentage (%)	90	94	91	92	86
Calves weaned per 100 cows put to bull	83	87	85	88	86
Average age at weaning (days)	259	236	227	232	236
Total DM concentrate fed (kg/cow)	0	74	151	59	68

Beef Finishing

Beef Finishing (Non-SDA Farms)

£/head

	PFLA Average	Stocktake Non-SDA 16–24 Months	Stocktake Non-SDA Over 24 Months
Gross output	1,909.54	1,211.10	1,219.68
Gross Output less Replacement Costs	1,303.57	593.86	722.93
Feed and forage costs	32.12	283.48	248.34
Vet and medicine	10.44	15.91	14.53
Other variable costs (bedding, ear tags, etc)	132.79	96.65	94.07
Total Variable Costs	175.35	396.04	356.94
Gross Margin Per Head	1,128.22	197.82	365.99
Labour (paid and unpaid)	128.57	90.24	140.69
Machinery repairs and contracting	46.50	42.26	65.24
Depreciation	170.70	82.21	93.49
Other fixed costs	215.56	136.89	150.97
Total Fixed Costs (before rent)	561.33	351.60	450.39
Net Margin Per Head (before rent)	566.89	-153.78	-84.40
Stocking rate (LU/ha)	1.0	1.7	1.4
where a 12–24 month beef animal = 0.65LU (head/ha)	1.5	2.6	2.2
Indicative Net Margin Per Hectare (before rent)	828.00	-401.00	-181.46
Herds in sample	3	31	17
Average herd size (cattle) (not weighted)	25	63	54
Number of full grass grazing weeks	31	18	30
Average age at start (days)	310	213	189
Average age at sale (days)	700	623	761
months	23	21	25
Finished/Store percentage (%)	91/9	97/3	89/11
Total DM concentrate fed (kg/head)	0	1,151	737
Average liveweight at start (kg)	239	279	223
Average liveweight at sale (kg)	622	605	609
Daily liveweight gain (kg/day)	0.9	0.8	0.7
Liveweight sale price finished (£ per kg lwt)	3.07	1.99	1.99

The PFLA average figures show the margins achievable when involved in direct marketing/ selling to the public. If finished stock is sold liveweight at the industry average of £1.99/kg, a gross output of £632/head would be seen. If the average fixed costs of £352 were achieved (with direct selling costs removed), the net margin would fall to £105/head. This is still significantly higher than the industry average.



Financial Performance

- ✓ **Higher output**
Our sample includes two organic producers who sell much of their premium Pasture for Life beef direct to the consumer, as well as one conventional farmer selling deadweight to a processor. These routes to market are reflected in the healthy output figure per head
- ✓ **Excellent gross margins**
High output coupled with very low variable costs result in a substantial gross margin
- ✗ **Higher fixed costs**
Higher labour, depreciation and contracting costs result in increased fixed costs. This, in part, reflects the additional costs of marketing direct to consumers
- ✓ **Positive net margin**
The Stocktake average and top third of producers both show a negative position at current prices, however, the Pasture for Life systems show a positive net margin

Physical Performance

- ✓ Pasture for Life farmers are committed to forage-based systems and hence **concentrate use is eliminated**
- ✓ The **daily liveweight gain exceeds** the industry top third
- ✓ Achieving premium prices results in a **higher liveweight sale price per kg**

Sheep



"Herbs sown amongst the grasses allow the animals to self-medicate."

Dan Bull

Berkshire

Sheepdrove Organic Farm covers 1,012ha sitting on top of the Berkshire Downs above Lambourn. A herd of 480 suckler bred cattle, purebred Aberdeen Angus and Beef Shorthorn cows with a few British White cows, are mated with Beef Shorthorn bulls. The cows calve in two five-week blocks, in spring and in autumn. The bulls run with the spring-calving cows at grass from June for two heats and with the autumn-calvers from January.

The cows are ultrasound scanned 34 days after service. Any that are empty return to the bull for the next serving session. Those that fail to get in calf twice are culled, although fertility is generally good and this rarely happens.

Despite being on chalk, the cattle are housed in winter to stop any poaching of the grassland. Herbal ley silage and ad-lib high quality meadow hay are the only feeds offered to animals of all ages. Red clover silage is used to finish fattening stock.

The beef cattle are reared and finished off just pasture – no grain is ever fed, at between 18 and 25 months of age. Three carcasses are hung for between four and five weeks and sold at either the Sheepdrove shop in Maida Vale in London, the dining room of the Eco Conference Centre situated on the farm, or via an Internet retail box scheme.

Sheepdrove flock

Sheepdrove's flock of sheep has 40 pedigree and 100 purebred Shetland ewes at its centre, chosen for their keen mothering nature and ability to survive the harshest conditions. They are good for conservation grazing on hard to access chalk banks, and are used to produce hogget and mutton.

The main commercial flock is made up of the small Shetlands crossed with a much larger Lleyen ram. These are then crossed again with a Lleyen or Texel to produce a finished lamb of 36kg liveweight. Thirty a week are drawn for slaughter. There are currently 1,000 ewes in the flock and the plan is to reach 2,000 by the end of next year.

There are 688ha of cultivatable area, under a six-year rotation of organic wheat or barley, followed by oats or rye and then three years of a multi-species grass ley, with up to 23 herbs and other broad-leaved plants like chicory and plantain. There are also 161ha of permanent wildflower meadow in an HLS scheme.

"We feel that having healthy pasture, along with our organic standards and our holistic way of managing livestock, including our pigs, geese, heritage turkeys, ducks and 300 laying chickens, is central to everything we do at Sheepdrove," explains Dan.

"All our animals graze and browse the meadows and hedges and enjoy a completely natural diet. The stocking rates are low for cattle and sheep. And without fertilisers we rely on the nutrition in the soil to make the grass grow, supplemented by nitrogen-fixing clovers and composted cattle and horse manure.

"Herbs sown amongst the grasses such as chicory, ramsons and birds foot trefoil, allow the animals to self-medicate. We don't routinely treat the sheep with any wormers; we use mixed grazing systems with cattle and sheep in the same field, and leave each paddock empty for six weeks post grazing to break any worm lifecycles.

High animal welfare

"High animal welfare is also really important and we have erected pyramidal rubbing posts in all the fields which the cattle and sheep all love to use!"

Dan has been at Sheepdrove for four and a half years, and is feeling now that everything is going in the right direction.

"We are really lucky that we are in control of the whole process, from farm to fork, but it still takes three years from putting the bull in, to getting meat onto a consumer's plate.

"To me, being a member of the Pasture-Fed Livestock Association is just common sense, as the demand for this type of high quality, high welfare meat is out there.

"But the other thing that is important for livestock farmers are the cost savings – it is much cheaper to raise cattle and sheep on just grass and forage crops than feeding grain. The veterinary costs are also very low too. But you do have to get the breeding right."





Sheep

Tim May

Hampshire

It takes a brave man to sow half his cropping area down to herbal leys all in one go.

But Tim May, managing director of the 1,000ha Kingsclere Estates, has done just that – in the firm belief this is the economically and environmentally sustainable path his business needs to take.

Tim, the fourth generation of his family to run farming operations on the open rolling North Hampshire downs, is turning to grass and livestock, sheep first and now also 150 cattle, to improve the depth and nutrient content of his ground. Very alkaline chalky soils had locked up valuable nutrients the arable crops cannot access, leading to declining yields.

Phosphate and potash indices are respectable, but the results of more detailed Albrecht and Reams soil tests show most of this is locked up and not available for plant growth.

"It was clear that the soil, the foundation of any farming system, was becoming lifeless and generally lacked organic matter," says Tim. "A new approach was needed to get this soil back to maximising its potential and for the land to remain profitable. One of the options was to return to a more diverse mixed farming system, with its many synergies and symbiotic relationships."

Tim is a Nuffield Scholar and the actions he has made are as a direct result of his travels, which he said gave him the strength to make the changes needed. He also recognises the influence of fellow Nuffield Scholar and Pasture-Fed Livestock Association member Tom Chapman, whose study *Are mob grazed cattle the perfect arable break?* he also regularly refers to.

Herbal leys

So three years ago, 370ha of herbal leys were established in blocks across the estate – with mixtures that include ryegrasses, festuloliums, timothy, cocksfoot, chicory, sainfoin, yarrow, burnet, plantain and a selection of white and red clovers. These will be down for four years before the fields go back into an arable rotation.

A total of 33.5km of three-strand, high tensile electric fencing was installed at a cost of 50p per metre. The aim is for the sheep to move to a new paddock every four days – leaving a residual that maximises sheep

intakes, but will encourage fast recovery of the pastures.

Above-ground water pipes with easy-to-fit connectors run out to home-made water troughs made from old tractor tyres, with a steel plate bolted to the bottom and a chain, so they can be easily dragged by a quad bike from paddock to paddock – an idea Tim saw on YouTube.

Grazed-grass only enterprise

Now 1,700 sheep, mule ewes and lambs tuck into the highly productive pastures and are tupped in early December. They lamb outdoors in April/May and receive no feed apart from grazed grass. The lambs are also finished purely off grazed grass, marketed from the autumn and through the winter and early spring, via the Fair Farm Fare online retail outlet.

The sheep enterprise is run on a low cost system – set up to run with 'a dog and a quad bike'. The chicory, which has natural anthelmintic properties, and other beneficial plants in the ley mix, helps to reduce the reliance on the vet and medicines.

"The motivation for taking such drastic action is to get the soils right," said Tim. "By growing grasses, legumes and deep rooting herbs we can increase soil structure, chemistry and biology.

"And we need the animals to eat the grass, and trample some of it into the soil to increase the organic matter content and encourage the worms, while adding their manure."

There are so many wins with this new system – not least low cost quality lamb production, with vastly improved soils that will produce more grain with fewer inputs.

"Our lamb, and beef (which is coming soon), is from contented animals that graze on herb-rich pasture, and is so much healthier for humans to eat than that from animals that have been given any grain," explains Tim.

"This form of production is fair to everyone – the consumer can buy great tasting, high quality meat at a reasonable price; it is fair to the animals as they spend all year outdoors on pasture; it is fair to the environment, as our system promotes soil health and ecological diversity, and finally it is fair to us as the farmer, as the price we charge is based on production costs and not supermarket price-wars."



"A new approach was needed to get this soil back to maximising its potential..."



Sheep



"The sheep flock is flying economically – there's a bit of rent and a little bit of labour..."

Jake Hancock

Dorset

Jake and Chrissy Hancock run Wessex Conservation Grazing, providing land management and maintenance of wildlife on several sites across Dorset.

Having worked for the National Trust and Soil Association for ten years as a farming and environment adviser, Jake established the business as a part time addition to his regular job in 2006. But by 2009, the new business had become his full-time occupation.

He now works closely with landowners and conservation groups to deliver sustainable land and livestock management for each area of land. He does this mainly by using native breed beef cattle suitable for rough pasture on sites of high nature conservation value. He offers a service for both organic and non-organic farms and sites – although any stock is managed on an organic, low input, high welfare basis.

As well as his clients' cattle, Jake also has 45 of his own Devon and Aberdeen Angus cross breeding cows, which are mated with a red Aberdeen Angus bull. The calves are kept on their farm of birth for a year before being moved on to National Trust land for their second summer. At 20 months of age they are sold on to a finisher and retailed through Waitrose on a premium scheme.

"We keep three or four of the cattle to kill and retail direct to local people but that is all," says Jake. "We are too busy with all the other stuff to let meat retailing take over."

Exlana cross sheep

On the sheep side of the business, Jake runs 300 wool-shedding, Exlana cross breeding ewes, with 200 at Trill Farm in Axminster and 100 grazing on National Trust land near Corfe Castle. There they act as a flying flock with the aim of controlling ragwort problems.

"We started with Lleyns and Cheviots but are now 60 to 70% Exlana," Jake explains. "In our breeding we focus on natural health and vigour with commercial standards and a simple management routine. We have no interest in what they look like, just their practical performance. Last year we started performance recording all our ewes and lambs.

"We don't have to shear, crutch or belly the ewes and the incidence of fly strike or the ewes being cast or caught up in the brambles

is massively reduced. They are also very good doers off grass and no concentrates. This is the reason why we signed up to Pasture for Life."

Lambing takes place between 15 March and 30 April and is all outdoors. Jake starts weaning the lambs from early July and this year has sold most through Eversfield Organic.

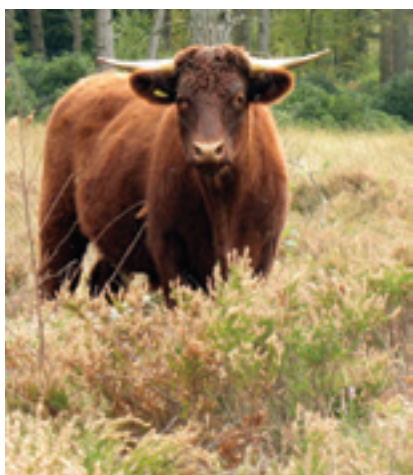
These lambs have been reared only on nature reserves or organic fields, without any artificial fertiliser or pesticides. The animals all graze extensively, and the stock is 100% grass and conserved forage fed. The beef is hung for 21 days post-slaughter and the lamb for seven days.

Premium prices

"The sheep flock is flying economically – there's a bit of rent and a little bit of labour and that's about it," says Jake. "It's good to know that there is an outlet for Pasture for Life animals and that we get a premium for them.

Jake also manages 150 cattle on National Trust land under HLS schemes around Poole Harbour; attempting to restore heathland that had been 'improved' for dairying in the 1960s.

"It is taking a long time to get back to what it was, but the National Trust is happy with how it is going," says Jake. "In fact they say that the acid grassland the cattle have helped produce is now even rarer than the heath."





Beef

Chris Jones

Cornwall

Chris Jones came to the 69ha Woodland Valley Farm in central Cornwall in 1960, where his parents ran a traditional mix of enterprises including dairy cows.

Chris initially worked off the farm as a forester until his father died in 1990, when he returned to farm in partnership with his mother.

Not wishing to be tied to daily milking, the dairy cows were sold and a commercial suckler herd established, crossing young beef cross heifers with a Limousin bull. After five years there was a herd of 90 cows, with half the calves sold as stores and the rest finished.

"We spent a lot of time and money growing and making silage and applying tonnes of artificial fertiliser," says Chris. "Then BSE hit us.

"When the market stabilised, prices were below what we needed to make a living. So we rented out most of the land, and I went off to work as a drilling fluids engineer on the oil rigs in the North Sea."

In 2008, Chris returned to the farm full time and started to engage with local transition initiatives, which were seeking, amongst other things, to reduce dependency on fossil fuels and imported food.

"Having worked in the energy industry it is very apparent that we are at, or near peak oil," says Chris. "This has huge implications for the future of farming. We need to find ways of producing food in a completely different way."

The farm had already converted to organic in 2003, and after a run of wet summers, Chris decided in 2009 to stop growing cereal crops.

Beef from grass

"This is an ideal grass growing area, so we decided to concentrate on producing beef from grass instead," said Chris. "We switched to Angus bulls and stopped feeding any cereals."

The current herd of 40 cross-bred cows calve in March and April, with the calves weaned in December when they are housed. The cows outwinter on permanent pasture if conditions permit. The only additional feed any stock is offered is hay.

The yearlings go back out to grass in April and fatten off grass, finishing at around 20 months of age, weighing 600kg liveweight and grading between O and R for conformation, at fat class 3.

Chris is one of the founder members of the Pasture-Fed Livestock Association. Inspired by fellow members, including grazing pioneer Ben Hollins at Fordhall Farm in Shropshire, Chris decided to try some herbal leys and mob-grazing.

Building organic matter

He hopes this will increase soil life and organic matter content to provide greater resilience against both drought and downpours and encourage more wildlife, whilst providing nutritious feed for the cattle. March-born steers grow at 1.1kg a day and March-born heifers at 0.8kg a day, with all feed apart from rock salt, coming from the farm.

Six hectares were ploughed, cultivated and rolled in autumn 2013 before a herbal mix from Hurrells Seeds was broadcast. A further 6ha was sown last autumn.

The herd is given access to a fresh section of field once a day. Very little veterinary medicine is needed, as daily movement and the long grazing cycle helps break parasite lifecycles.

It takes two people 40 minutes to move the reel and fence posts forward, leaving six metres of yesterday's grazing as a runback area and access to the water trough.

"Leaving the runback is an essential component of mob grazing, as it allows the cattle to trample any plant material not eaten into the ground. The worms can then pull it down into the soil.

"The other important element is rest. The cattle won't graze the same section for three months or more, giving the sward chance to recover and thrive. Most areas are only grazed three times in one year.

"Building organic matter takes time and we are taking measurements to see how much we create over the years. We carried out the Climate Friendly Foods carbon audit and this showed we are already sequestering 350 tonnes of carbon in our soil a year.

"Now we are mob-grazing we have more grass than ever before, so I shall be increasing the herd by 50% over the next two or three years, producing more output for very little extra input."



"We need to find ways of producing food in a completely different way."



Beef



"A lot of people said we couldn't base a beef system solely on clover leys..."



John and Guy Turner

Lincolnshire

John and Guy Turner are third generation farmers at The Grange in Little Bytham. The 100ha holding is predominantly limestone brash, and sits in a rain-shadow, with an average annual rainfall of 450mm.

There are 10ha of permanent pasture and the rest is down to a seven-year rotation. Four years of ryegrass/red clover leys are followed by three years of cereals – wheat, barley or oats.

The farm completed organic conversion in 2001, when there was still a dairy herd of 80 British Friesians. The decision to stop milking came with the oversupply and loss of price premium in 2004.

"It was sad to see the herd go, but our dairy experience had given us good understanding of how to manage grass," says Guy.

Keen to maintain grass/clover leys in the rotation to add fertility and improve soil structure, the Turners set up a suckler beef herd, initially serving 15 dairy replacements that had not been sold, to a Limousin bull. Fed purely on grazed grass and red clover silage in winter, their offspring finished easily with no cereal feed, at 26 months.

There are now 35 spring-calving cows, with plans to increase up to 40. It has taken a few years to fine tune the breeding, and various native breeds have been tried, including Angus, Hereford and Lincoln Red. However, the best and most consistent results are coming from Red Poll dams, crossed with a Limousin bull.

"We're looking for an easy-calving dam that has a long, relatively flat, lactation curve, and the Red Poll fits that perfectly," says John. "They have an excellent conversion ratio of feed to milk and that gets the calves off to a great start."

Diverse swards

Selecting sires for carcase traits has reduced finishing times from 26 to 22 months with consistent finishing at between 380–400kg deadweight, and an average conformation grade of –U3. A batch of five finished beasts is sold to ABP Food Group every other month all year round.

The grass leys are drilled by the third week of August, with Broadsword Hi-Pro – a hybrid and perennial ryegrass mixture containing 5%

white clover and a 15% red clover blend, plus added chicory. Deep-rooting lucerne is also being trialled, and other diverse swards are planned.

"Finishing beef animals to commercial timescales and specifications just on grass leys and silage is actually not that difficult – the key to success is attention to detail," says John.

"We produce hay, haylage and silage, and match the quality of feed to the requirements of the different groups and growth stages."

Fresh leys are established in mid-August following the last cereal in the rotation by cultivating with two passes with a winged harrow, which lifts the soil but prevents loss of moisture and organic matter and minimises disruption to soil life. The seed mix is drilled using a homemade grass box on wheels with a flat roll behind.

High quality forage

"The investment in that machinery has meant our fixed costs have been higher than some other beef producers," admits Guy. "But the difference in the quality of the forage means that this makes perfect sense for us, and is also reflected in the quality of the animals we turn out."

The grass is mown leaving high stubble, left to wilt for 12 hours, turned and left for a further 12 hours. It is then made into high density, one tonne bales and wrapped with six layers of high quality film in the field, within one hour of baling. The bales are removed from the field that day and stacked on their ends, three high using a bale squeezer.

"A lot of people still see our beef system based solely on clover leys as something out of the ordinary, but we have found it ideally suited to this farm," says John, a founder of the Pasture-Fed Livestock Association.

"This is sustainable farming which is good for the land, but also provides us a commercial return for a high quality beef product. The Pasture for Life approach could easily be dismissed as purely artisan and low output, but we believe it is a real option for mainstream beef producers as well."



Beef

Duncan and Angus Nelless

Northumberland

Fifteen years ago the Nelless family set a goal to farm in a enjoyable and rewarding way without relying on subsidies to make a profit. Amongst other things, a focus on strict grassland management and organic conversion has allowed them to do this.

A pedigree flock of 1,600 Lleyn ewes are run, with the majority being bred pure. Those not meeting the criteria for the pedigree flock are mated with the Hampshire Down to produce slaughter lambs from late June onwards. Recording from birth has enabled selection for worm resilience, reduced lambing assistance, improved udder conformation, increased maternal drive and addressed other management issues.

While the flock is grass-fed, the feeding regime of bought-in stores cannot be guaranteed, so the sheep are not certified 100% Pasture for Life. However, the cattle enterprise soon will be.

Next spring 140 Aberdeen Angus suckler cows will calve. Angus, who looks after the cattle, has just started introducing Hereford breeding to produce low-input Black Baldies.

"We are looking for the quiet temperament of the Hereford, as we have to move the cows around quite a bit as they graze the fields rotationally with the sheep," Angus explains.

"We choose bulls on their Estimated Breeding Values, looking for average 400-day weights, easy calving for the mother and for her daughters, as well as other things like good testicle size and good feet."

Compact calving

The bulls go in on 25 June and the cows start calving on 1 April. They carry on calving for seven weeks only, to keep the calving period compact. They are pregnancy scanned early in October and this year there were 97% in calf. Any not pregnant are culled immediately.

During the spring, summer and autumn, three mobs of cows and one of heifers are assigned to grazing areas within the 364ha of grassland. One third is traditional ridge and furrow, one third is permanent pasture and the final third is down to temporary grass and forage crops.

The calves are weaned in November at housing and fed good quality red clover silage.

The cows are fed a mixture of stewardship hay and moderate quality silage.

"In winter we are looking for growth gains for the calves of around 0.6kg/day," says Angus. "Then we want an early turnout, ideally at 20 March, to make the most of fast compensatory growth of 1.2kg/day, up to a finishing deadweight of 320kg. That is the target."

Steers finish at 18 to 20 months of age and are currently sold to Dovecote Park. The family already retails the products from their 6,000 free-range chicken enterprise, so would rather not sell their beef themselves.

"At the moment the beef cattle enterprise works well – due to low costs, high fertility, very good compensatory growth and rotational grazing," says Angus.

"The cows gain condition over the summer, which they draw on to survive the winter. There is no machinery or concentrate feeds, just grazed grass and hay bales or pit silage for the winter.

Grass measurement

"The rotational grass is not in for a fixed length of time. We measure the grass monthly, so we know how much grass each one is giving, which helps us pinpoint the under-performing ones and replace those.

"There are 32ha of a red clover and perennial ryegrass mixture. We take two cuts of silage for the steers, and then finish lambs on it for the rest of the season.

"We started down the grass route in 2007 and it has allowed us to completely transform the whole system. Farming this way is not rocket science; it's just a mixture of the old and the new."



"The grass route has allowed us to completely transform the whole farming system."



Beef



"Our consumers are really interested in the Pasture for Life principle..."

Ian Boyd Gloucestershire

Trained as a production farmer, it took Ian Boyd 25 years to realise the thin brash soils of the Cotswold Hills where he farms, were holding him back from making a good farming business, together with a disillusionment of producing commodity crops for agribusiness and the supermarkets to profit from.

So he changed his ways, as the farm was fortunate enough to be in the Cotswold Farmland Bird target area. He fully embraced Higher Level Stewardship (HLS), which allowed him to turn the farm's unproductiveness into a strength.

The farm is 280ha, part-owned and part-farmed for another landowner. Sixty-five hectares of wild-flower meadows were created for the HLS scheme. This, together with 45ha of permanent pasture, some of which has SSSI status, was to be managed by having a late-cut hay and extensive grazing.

A herd of largely traditional pedigree Hereford cows and calves was bought in 2007 and operated as a closed spring-calving suckler herd. Ian attempted to create a really simple system that required minimum labour input, and imagined how they would have been kept 100 years ago.

All the calves would be fattened at home or retained for breeding with nothing needing to leave the farm alive. This made any TB breakdown less of an issue and no grain was ever fed for simplicity. This also helped reduce badger/cattle contact.

Recently the other half of the farm, all arable, has also converted to organic status. The cattle will now be expanded to graze the arable land on a rotational basis, as herb-rich leys are rotated around the farm.

Wildflower hay

The main herd out-winters on deferred grazing and the late-cut hay made from the wild-flower meadows. The weaned calves and yearlings are housed by Christmas and fed on haylage made from the herb-rich leys. In the spring, when the cows have a new-born calf, the whole herd is gradually re-united to rotationally graze the permanent pasture, herb-rich leys and wild-flower meadows.

The youngstock not required for breeding are fit for slaughter from 27 to 39 months of

age. Carcass weights are generally around 330kg, with conformation O+ to R and fat levels of 4L to 5L. The carcasses are dry aged for 28 days and butchered locally to their specification.

Fabulous flavour

"The taste and flavour of the beef is just fabulous," says Ian. "We receive many comments like, *I remember when beef used to taste like this*. The meat trade seems to put no value on these really important attributes, and there is a gap in the market that the supermarkets cannot fill."

Ian's wife Cathy sells the beef mainly in mixed boxes, which is essential to balance the various cuts. These are mostly collected locally, but also posted nationwide in recycled cardboard boxes with sheep's wool insulation and water-filled ice sheets, to keep the meat at the right temperature during transport.

"In essence, we were selling pasture-fed meat before the Pasture-Fed Livestock Association ever existed, but it is now helping bring us in contact with more customers," says Ian. "Our consumers are really interested in the Pasture for Life principle and it is refreshing and a joy to re-connect with the people who buy and eat our beef."

"It also gives our business that essential competitive advantage with a product that has a unique selling point."

"Initially we never anticipated the cattle enterprise would make a profit, it was just there to manage the wild-flower meadows. But the surprise was that it did make a profit. We are producing a highly valued product that has a low cost of production and is truly sustainable in every sense. But it has needed a mind-set change away from modern intensive agriculture, which can be the greatest obstacle."

"Finally it gives us great pride in our produce – we know we are selling the very best quality beef anyone can buy and our customers love it."





Beef

Neil Heseltine

Yorkshire Dales

Neil used to run two systems on the 485ha of severely disadvantaged land he farms, split between Malhamdale and Littondale. There was a low input, low labour suckler beef enterprise, which is profitable, and a high input, high output sheep flock, which was not.

The Belted Galloway beef herd was started in 2003 with 90 heifers and a bull. Now there are 24 breeding cows and their youngstock, making 120 beasts in total.

"When we started the most important attribute we needed from the breed was the ability to winter outside, at anywhere from 243m up to 548m above sea level," Neil explains. "Highlands have horns so the choice was relatively easy. And the white belts of the Belted Galloways are easy to count when they are up on the hills. They are also really good mothers – they calve easily and gain condition off low quality grass. They have the ability to make the best use of the uplands."

The cows are served between 15 August and the end of September, so they can start calving at the end of May, once the worst weather has gone and they have had a chance to regain some condition.

Neil has stopped weaning the calves, leaving them with their mothers until they calve.

"We used to separate them at the end of April, but this caused a lot of stress to them and us," says Neil. "Now, they stay with their mother until she calves again, at which point the cow and new calf are walked to a separate field away from the rest of the herd. This attempts to replicate the natural process and is much less stressful for all involved."

Environmental schemes

Neil runs three HLS grazing schemes on the hills. None of the cattle of any age are fed concentrate feeds and they only get silage if there is deep snow.

The cows and their calves – which are between five and eight months of age, are given a large area of ground to roam. The cows graze most of the time, popping back to feed the calves a few times each day. As the calves grow they take less milk and graze more.

They all have to come back down off the hills from May, as this is part of the HLS

prescription, which allows the wildflowers to set and drop their seed.

"The upland meadows do look splendid in the summer," Neil acknowledges. "The conservation scheme certainly works and the flowers and wildlife are flourishing. We have so many birds in the fields and barn owls in the farmyard – seeing it all is almost as pleasurable as farming."

In September, all the cows and one and two year-old youngstock go back up to the hills, and by the following May, the three year olds are starting to finish off grazing alone. They are currently sold through North of England supermarket chain Booths, but Neil hopes eventually to find a more local outlet that will really value the Pasture for Life brand.

Simple system

"We try to keep cattle management as simple as possible – in fact tagging and castration are the only routine tasks we carry out," Neil says. "If they need moving I might have to pay for someone to come and help me walk them – but that's about it."

"Over the past ten years the Belties have taught us that fattening native cattle on low value grassland is achievable and is profitable. Now we have started to apply some of this thinking to the sheep enterprise," says Neil.

"Six years ago we had 600 ewes that were intensively managed and losing us money. Now we are down to a flock of 200 Swaledale ewes, and feeding much less cereals too.

"It is sometimes hard to get your head around the fact that having 200 lambing sheep can be more profitable than having 600. But if you take all the costs out, it can definitely be done!"



"The conservation scheme certainly works and the flowers and wildlife are flourishing."



Frequently Asked Questions



Q: What is the difference between 'grass-fed' and 'pasture-fed' meat?

A: To be labelled as grass-fed under Defra rules, animals only require 51% of their diet to be grass-based. Some grass-fed systems use significant amounts of concentrate such as barley and soya-based feeds, to fatten their animals.

To be a Pasture for Life producer, farmers must feed grass and herbs, (including conserved hay, silage, lucerne, etc) for an animal's entire life.

Q: Does it take longer to fatten cattle and lambs in a Pasture for Life system?

A: Pasture for Life producers do not rush their animals and make the most of grazing grass, wild flowers and herbs.

The data, from Stocktake and the PFLA farmers, shows that reducing reliance on concentrate feed can be cost effective. For some, this results in a slightly longer finishing period. But with good grassland management, finishing times and stocking rates can match, and in some cases exceed, the industry averages.

Q: I still feed some concentrate mainly for animal health reasons. Can I become Pasture for Life accredited?

A: High animal welfare and good nutrition is paramount in all systems. Some animals, such as concentrate-reared continental types, will not perform as well as others on a forage-based diet. Selecting the right breeds and genetics is crucial to success, as is good grassland management.

In unforeseen circumstances such as extreme weather or if ewes are facing metabolic issues pre-lambing, Pasture for Life stock can be given concentrate feeds. However, these animals and any offspring must be recorded and not sold as certified 100% Pasture for Life. The lower veterinary and medicine costs in the PFLA sample suggests that animal health issues can be reduced in well-managed pasture-based systems.

Q: Does grazing a mixed sward for longer, improve the quality of the meat?

A: We are what we eat and proper Pasture Beef and Pasture Lamb tastes superb. In addition, a longer grazing life can also increase the nutrient value of the meat.

Grazing growing pasture can enhance the levels of healthy omega 3 fats and conjugated linoleic acids. Switching to other finishing feeds, even for a few weeks, can diminish these nutrient levels. More and more customers are seeking certified 100% Pasture for Life assured products for their additional health benefits over grain-finished animals.

Q: I have heard the carbon footprint of red meat from slower growing systems is higher than more intensive systems. Is this true?

A: This is a popular misconception following the publication of the UN FAO report *Livestock's Long Shadow* in 2006. This report was widely criticised for ignoring the fossil fuels needed to grow and transport cereal feeds, and the impact of land use change often associated with growing commodity crops like soya. It also ignores the carbon captured and stored by the grassland the cattle graze. When these important aspects are factored in, Pasture for Life production is typically carbon-neutral.

Q: Net margins are low across the industry. What other income do Pasture for Life farmers receive to help viability?

A: There are several options within Cross Compliance 'Greening' and the Countryside Stewardship Scheme ideally suited to Pasture for Life farms. These are also delivering important habitat restoration, resource protection and other landscape benefits.

Pasture for Life is also seen as a premium product and there is significant demand. Although the markets are still in the early stages of development, many producers are direct marketing or selling to butchers, restaurants or premium wholesalers, adding extra income to their bottom line.

Q: Are Pasture for Life systems reliant on costly artificial fertilisers?

A: Many of our producers follow organic methods and make full use of clovers, herb-rich leys, increased soil organic matter and manures to cut costs and maintain fertility and yields. Inorganic fertiliser use (and the associated external pollution costs) is therefore reduced on these farms.

Q: Is joining the PFLA and becoming a Pasture for Life producer expensive and time-consuming?

A: No. It costs as little as £50 to join the PFLA. Farmers can then initiate the certification process. An annual inspection can be undertaken in conjunction with the main farm assurance visit such as Red Tractor, Freedom Foods or some organic inspections, for a small additional fee. Little additional paperwork is required.

Once certified, farmers have full access to the PFLA marketing material and initiatives, the Tracks QR code system and use of the Pasture for Life logo. A small levy, eg £5 for a beef animal, is payable by processors to support the promotion of the Pasture for Life certification mark.

It can be done – nutritionally!

Any animal, whether growing, pregnant or being stored, needs sufficient intake of energy, protein and minerals to achieve the targeted results.

The same is true for Pasture for Life animals. They need plenty of pasture whether set-stocked or rotationally mob-grazed, to provide the adequate dry matter intake, coupled with energy, protein, fibre, oils, starches, sugars and minerals.

Pasture-fed livestock can thrive on a range of plants, be they grasses, herbs, legumes and even fodder trees.

Cheapest feed

In the PFLA Stocktake data, the number of grazing weeks during the year was 50% higher than the top third of the AHDB Beef & Lamb Stocktake figures. This tells us that the animals were fed more pasture, which also happens to be the cheapest feed available, per unit of energy and protein.

Also the minerals in pasture are usually well balanced, compared to other feeds, which are often supplemented with a wide range of minerals and vitamins.

The only issue with pasture can sometimes be in periods of rapid animal growth. This can be in spring and sometimes in autumn, in soils with high available potassium (K) and nitrogen (N). Magnesium (Mg) might also be limiting, and sometimes, depending on the soil type, cobalt (Co) may cause problems. To a lesser degree shortages in copper (Cu) (not for sheep) zinc (Z), iodine (I) and selenium (S) may need addressing. All deficiencies in these minerals can easily be identified by pasture tissue samples and animal blood/liver tests.

As most Pasture for Life certified producers have only one source of feed, they tend to treat it well. There is no cheap way of supplementing a shortage of grazing, apart from making hay or silage, both of which add costs to the system.

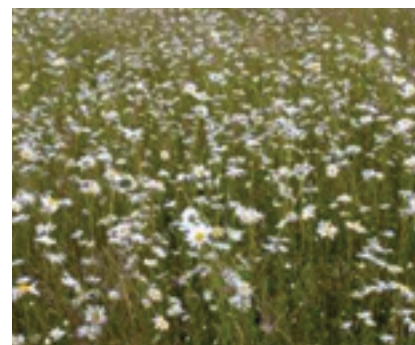
Measuring grass growth

The quantity and availability of grass is paramount and can be improved by planned grazing. This is where grass is measured, perhaps using a AHDB Beef & Lamb sward stick (available free of charge) or a software program, such as AgriNet (www.agrinet.ie). This can help farmers balance supply with livestock demand at grass, with the right number of animals assigned to the right area of land.

Many certified producers, especially those on drier farms, are using long rotation (30 to 60 day) herbal leys. This is nearly double the length of time between grazings of a traditional ryegrass /clover ley. It can cover a dry summer and extend the season into late autumn and early winter, which allows more days out at grass. At the same time, other non-grazed paddocks are rested and will have adequate grass available in late winter and early spring. You need pasture to grow pasture!

Rotational paddock grazing also increases total production per hectare and so the kilogrammes of meat produced per hectare.

For further information on grazing systems, sign up to the Grazing Club on the AHDB Beef & Lamb website beefandlamb.ahdb.org.uk/returns/grazing-club.



Pasture for Life – It can be done!

Authors

Jonathan Brunyee

Jonathan is a Senior Lecturer in Farm Business Management at the Royal Agricultural University (Cirencester), where he encourages young farmers to build environmental, social and true-cost sustainability into their enterprises. He also has twenty years of consultancy experience and is a director of the PFLA.



At home, Jonathan is a National Trust tenant on a 75ha organic farm in the Cotswolds, with his wife Mel and their young family. They aim to deliver high quality products and a thriving environment with traditional Hereford cattle, Cotswold sheep, farmland birds and species-rich grassland. They sell Pasture for Life beef, lamb, hogget and mutton directly to local consumers.

In 2015 Jonathan was awarded a Nuffield Farming Scholarship, which led him to Romania, Italy, America and Canada, to study regenerative agriculture and sustainable farm businesses. This opportunity has reinforced his belief in pasture for life systems and local food economies.

Luppo Diepenbroek

Luppo studied Agriculture at Newcastle University where he was inspired to seek a career in ruminant nutrition, with a particular focus on grassland, grazing and growing alternative forage crops.



For 14 years he acted as a nutritionist for a farmer co-op, before setting up his own business, providing consultancy and facilitation services to organic, dairy and beef enterprises in the south west of England. The focus of his work has included ways to improve soil fertility and forage quality, how to graze effectively and efficiently, and increasing the 'Triple Bottom Line' – the financial, social and environmental aspects of livestock farming.

The PFLA tasked Luppo to gather evidence from Pasture for Life farmers who are successfully raising and retailing Pasture Meat, to prove to others that it can be done.

Sara Gregson

Sara is passionate about grass-based farming, seeing it as a sustainable approach to dairy, beef and lamb production in the UK.



She is an agricultural writer, who has spent the past 25 years interviewing many successful livestock producers and writing about them in the farming press. She has also been involved with industry-wide extension initiatives such as the AHDB Beef & Lamb Better Returns Programme.

A member of the Chartered Institute of Marketing, Sara has experience of all aspects of marketing communications within agriculture. She is a member of the Guild of Agricultural Journalists and has very good contacts with the UK farming press. She is a director of the PFLA responsible for PR and marketing communications.

In 2006, she was awarded a Nuffield Farming Scholarship to find ways of encouraging pastoral livestock farmers to use their grassland more effectively.

And finally...

Thanks to the AHDB Stocktake team, including Carol Davis and David Pett, for all their help in providing access to the figures for the eight case study farmers. Without this, it would have been impossible to put this booklet together.







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