

Agricology field day July 30th

Diverse pastures

Rob Havard, Phepson Farm, B60 4HT



FARM SIZE: 170 hectares / 420 acres

MANPOWER: 1.5

FARM TYPE: Grazing Livestock

TENURE:

We own a small farm 50 acres and rent the rest from various landowners

RAINFALL: 686 mm

ALTITUDE: 50 m

SOIL: Heavy Evesham Series Clay

APPROACH: Organic

The home farm is 50 acres of pasture with some old traditional orchards. We have been farming here since 1919 when my great grandfather moved from south Wales. We have always farmed sheep and cattle and have recently converted to organic and certified Pasture for Life beef and lamb. Since 2003 we have taken the farm in a more environmentally focused direction and have been in Environmental Stewardship schemes for over 10 years. We started grazing nature reserves for local wildlife charities to expand the farm, but more recently have taken on larger blocks of land and now farm over 420 acres. We have a farm tenancy with the National Trust on 180 acres at Croome Court and have recently taken on a further 190 acres with a local landowner.

Our main operation is pedigree grass-fed organic Aberdeen Angus breeding cattle. Profit per acre is the key measure not production per acre. There is a tipping point when the extra unit of production starts to cost you money - keep production below that point and your business will be more resilient in the long term.

We use Holistic Planned Grazing to manage our livestock for the benefit of the cattle, the environment and the people involved. We usually have Breeding bulls and females available throughout the year. We aim to farm in Nature's image; to keep the environment the way it was meant to be kept. A common theme across all the land we farm is the creation and restoration of native species-rich grassland and making the most of these natural biodiverse pastures and proving that they can be productive and valuable for fattening stock.

Using grazing techniques that are based on recreating natural processes allows us to grow fitter cattle for less money while leaving the land in a better state than when we found it. Populations of wild birds have been increasing year on year, the wildflowers are going from strength to strength, and we're introducing more every year from local wildlife reserves.

13.00 Farm Walk

Stop 1: Green hay and strewing

Large hay bales are rolled out daily through winter to supplement deferred winter grazing (one large hay bale (4.5ft) feeds 20 cows for one day. Typically, two bales are rolled each day for a mob of 40 cows and 16 bales is a week's feed).

We never store hay under a roof. It is allocated when winter budgets are calculated late in the summer. A reserve of hay bales is stored in a grid in a field each winter, acting as a forage store. To use in times of extreme weather, if I am absent from the farm, and in March to wean.

Stop 2: Wildflower meadows

Environment stewardship has provided the opportunity to experiment with establishing a long-term, diverse meadow pasture, reverted from arable land.

- Diverse meadow mixture combining long term traditional grasses such as meadow foxtail, smaller catstail and the finer leaved fescues, along with native clovers, trefoils and wildflower species. The chief goals were to improve rooting depth to aid drainage, but the environment was also an important consideration.
- The diverse mixture contains around 20 species and has produced great results for both drainage and wildlife. Deep rooting species such as sorrel and yarrow have worked very well in helping to drain the clay. The wildflowers established well across the fields, which became a magnet for the butterflies and other beneficial insects and pollinators.
- Another benefit to the multi-species mixture is there is now a minimum of 12% organic matter in the fields, and species like yarrow are really good for the fungal balance within the soil. Meadow foxtail gives early and late grazing and herbs and legumes like ribwort plantain and birdsfoot trefoil create a wider mineral profile in the forage for the grazing animals, along with good protein levels to help provide a balanced, healthy diet.

Stop 3: Mob grazed pastures

Over the past eight years, I have used mob grazing high covers (3,500kg DM/ha-5,000kg DM/ha) on long rotation lengths (60 days) to build organic matter and soil health. This 'deferred mob grazing' (leaving grass later and grazing at higher covers) shortens the housing period. After two years I was able to leave the cows out all year round on the heavy soil.

We have been operating our grazing using Holistic Planned Grazing (HPG) for about 7 years now and had rotationally grazed before that. We have found Holistic Management to be a great tool for setting the direction of the farm and making sure that our decisions are not running counter to our lifestyle goals or those of our immediate family. Setting goals that ensure that our decisions are tested against social, financial and environmental criteria, ensures that the future of the farm is not only sustainable but that the profitability, fertility and wildlife resources improve every year.

We use HPG to make the most of diverse native pastures and have restored many acres of native species-rich pastures. The livestock thrive on the pasture diversity that provides all their needs and allows us to fatten all stock from grass and natural herbs alone.

For this type of grazing, easy-fleshing forage converters with low maintenance requirements are needed. I started from a wide genetic base, combining native, US and New Zealand Angus genetics to find the right cow for the system. Calf birthweights are typically 38-42kg.



If you let your clover go to seed your cattle will reseed for you free of charge

We now manage 3 farms with the following infrastructure investment for each, in addition to rail fencing and steel gates:

- Cattle crush and sorting pens for TB testing and sorting cattle: £8,000
- 80-litre drag trough for mob grazed paddock, plus alkathene pipe (60p/m): £250
- Electric fencing, energisers and reels (solar and battery): £600

BENEFITS

- Deferred mob grazing has helped cut fixed costs and give a cash-only net profit of £350 a cow.
- It has helped cut inputs by helping to build soil organic matter. Despite the farm being on heavy Evesham series clay, cattle can now be outwintered after a three-to-four-year period of soil health improvement. The cows have lifted soil organic matter to 12-15% on some parts of the farm, compared with 3-4% on nearby arable units.
- This has resulted in a gross margin of £507 and cash-only fixed cost of £157 a cow, with fuel, contracting and machinery costs kept down through a low-input system, based around mimicking nature.
- Variable costs have been reduced, with no hard feed or mineral supplementations and no routine use of vaccinations or wormers.

SEEGSLIP Trials at Phepson Farms

'Sustainable Economic and Ecological Grazing Systems Learning from Innovative Practitioners' A project to evaluate the ecological, agronomic and social impacts of the pasture fed livestock approach and to assess its potential as the basis of a sustainable UK wide system.

Year 1: 56 Pasture fed farms (2018)

- Basic vegetation and soil sampling to compare PFLA pastures with other pastures across the UK
- Farmer interview and Public Goods Tool assessment

Year 2: 2019

Focusing on practice of mob grazing and species rich leys including vegetation and soil sampling (comparing to set stocking and non-use of leys).

Contact: Lisa Norton lmn@ceh.ac.uk @seegslip

Stop 4: Cattle

We feed our cattle on grazed grass and hay, which is either bought in from organic farms or made on farm. Pasture is grazed after it has seeded. Cattle are moved into pastures at covers of 3,000kg DM/ha-5,500kg DM/ha and leave at 2,500kg DM/ha. The pastures are rested for an average of 60 days to grow, although some are grazeable in 20 days and some require more than 100.

Paddock sizes are budgeted at 17.5kg DM/cow/day (2.5% of bodyweight), typically seeing cows on paddocks for 2-4 days.

Breeding bulls are the only animals housed in winter to add condition in January and February on hay and are given 3-4kg/head/day of 18% crude protein organic Lucerne grass pellets, costing £126 a head at £400/t.

Grazing with a back fence is important. You don't have to move every day but as long as you move cattle every 4 days you will grow more grass for free and your soil will be more productive and less compacted. We move cattle every 2 days (potentially twice a day in really wet weather) and always have a back fence. The aim is to avoid re-grazing the growing plant and to maximise regrowth/rest periods. Our rotation is about 90 days in the summer while we try to build a stockpile of grass for winter grazing. We find that leaving at least 4 inches post grazing helps to maximise winter stockpile while also being the most nutritious parts of the plants for finishing store cattle on grass alone.

Stocking rate will determine how far we get through the winter on the stockpile - last year we wintered out on one farm on stockpile alone with no hay on very heavy clay. On another farm with a higher stocking rate we housed in mid-January. The aim of stockpiling is to reduce wintering costs, which is the main cost in the business and makes us much more resilient to price instability. In extreme weather years it might not be as effective but if we can save costs 3 years out of 4 then we are moving forward.



3 weeks Feb regrowth after hard grazing (2017)



Cocksfoot (Orchard grass) still holding up well in mid Feb (2017)

Stop 5: Bale Grazing

Stop 6: Orchards and tree planting

Lindsay Whistance – Livestock Researcher, ORC – Animals and trees



(Ralph, 1981)

LAMB MORTALITY (%)

	SHELTER	NO SHELTER
Single births	8.9	17.5
Multiple births	38.8	51.3

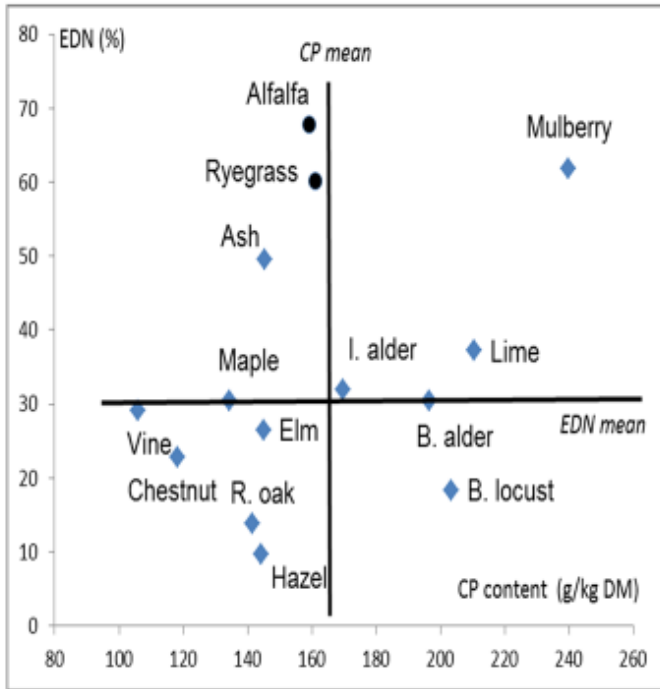


On a global level, shade is the single most important benefit



Figure 2. Relationship between effective degradability of nitrogen (EDN, %) and nitrogen concentration (CP, g/kg DM) in leaves of woody species during summer. (Emile et al., 2016)

<http://scotland.forestry.gov.uk/woodlandgrazingtoolbox/grazingmanagement/foraging/palatability-and-resilience-of-native-trees>



Palatability

Tree species

- 1 Aspen, Willow
- 2 Ash, Rowan
- 3 Hazel, Oak
- 4 Scots pine, Juniper, Holly
- 5 Birch, Hawthorn
- 6 Beech
- 7 Alder

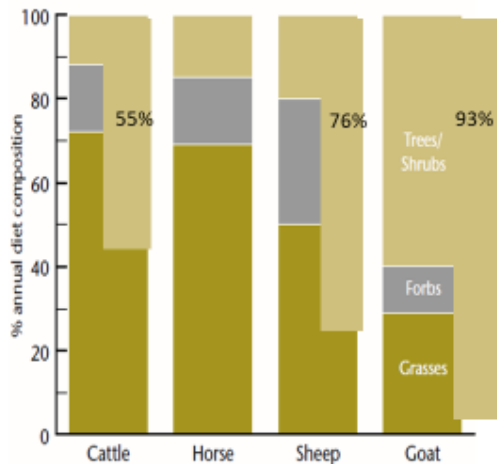
•In lowland woodlands aspen may be in palatability class 3.

•Scots pine, juniper and holly are more preferred in winter than summer because they are evergreen, however, young holly shoots, before the leaves have hardened, are also often taken.

N.B. There is ongoing debate about whether holly and hawthorn should be higher up the list. They are often seen heavily browsed but this may be only when all other species are either more heavily browsed or are not there at all.

Good source of minerals

Variation in browse intake of domestic stock



Hedge: field maple, sycamore, hornbeam, dogwood, hazel, hawthorn, ash, black poplar, oak, false acacia and elder.

All species were browsed at least once except false acacia

Vandermeulen et al 2016

<http://www.forestry.gov.uk>; Dicko and Sikena, 1992

Heifers (May – September)	Time spent browsing (%)	Species preferred
Spring	19.3	Hazel Hawthorn Hornbeam
Early summer	5.9	
Late summer	5.4	

Journal of Applied Ecology cover



<https://meridianjacobs.wordpress.com/tag/grazing/>



“Why do all plants which an animal likes, have the wrong sort of swallow or too many spikes”. Milne (1928)



Brain full? Learn more at your leisure on www.agricology.co.uk!

- **Use of diverse swards and ‘mob grazing’ for forage production** (SOLID Farmer Handbook: Technical Note 3) <https://www.agricology.co.uk/resources/use-diverse-swards-and-%E2%80%99mob-grazing%E2%80%99-forage-production>
- **Tall Grass Grazing and the Future of Livestock Farming** (film shot during last summer’s drought and shows farmers across Scotland trialling ‘mob grazing’) <https://www.agricology.co.uk/field/blog/tall-grass-grazing-and-future-livestock-farming>
- **Pasture for Life – It can be done** (The farm business case for feeding ruminants just on pasture) <https://www.agricology.co.uk/resources/pasture-life-it-can-be-done>
- **Digging the Dirt on Curlew Call Farm** (Focuses on Jonathan Boaz, an arable farmer in the West Midlands who believes in boosting organic matter largely through using green manures and grass leys) <https://www.agricology.co.uk/resources/digging-dirt-curlew-call-farm>
- **Sward enhancement: diversifying grassland by spreading species-rich green hay** (Natural England Technical Information Note TIN063) <https://www.agricology.co.uk/resources/sward-enhancement-diversifying-grassland-spreading-species-rich-green-hay>
- **Rob Havard farmer profile** <https://www.agricology.co.uk/field/farmer-profiles/rob-havard>
- **Species-rich Grasslands, Meadows & Pastures in Worcestershire** (A Landowner’s guide to Recognition, Management & Restoration) <https://www.agricology.co.uk/resources/species-rich-grasslands-meadows-pastures-worcestershire>
- **Arable reversion to species-rich grassland: Site selection and choice of methods** (Natural England Technical Information Note: TIN066) <https://www.agricology.co.uk/resources/arable-reversion-species-rich-grassland-site-selection-and-choice-methods>
- **Christine Page farmer profile** <https://www.agricology.co.uk/field/farmer-profiles/christine-page>