

A Coppiced Hedge

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The Farm and its firewood business

- 400 acre family farm. Low intensity organic grass
- Field sizes from 1 to 30 acres
- Altitude 400 - 1000 ft
- 12 miles of hedges, 10 miles managed under a 15/20 coppice rotation.
- Below average growth rate

Small firewood business



Is it economically viable to take hedges from annual flailing to a 15/20 coppice rotation?

- It has been demonstrated on the continent that the most economic method of coppicing hedgerows is to use large chippers reducing the entire hedgerow to chipped biomass.
- The issue in the UK is there is not enough demand for this rough chip in most regions of the England. Should demand rise to meet supply then this will probably be the model adopted.
- The example presented here is not a template which can be taken in its entirety for all farms, the hope is that there will be aspects of this model which can be widely adapted to other hedgerow systems.
- This example requires no special skill set, no special large-scale machinery, in some circumstances no extra labour and little if any capital.
- A log business up to 300 tonnes only requires about £20,000 of capital if a farm has none of the equipment. Many farms will already have much of this equipment.

If we can do it anybody can do it.....

How is it sold? Half in bags through an honesty box and half in loads



Bagged logs for sale using honesty box



Stacked logs from hedges

FIREWOOD SOURCES

- Surplus hedge material.
- Hedge material from neighbours. Total hedge production used 25 miles.
- Fallen trees.
- Tree surgery work.
- Thinning's from copses.
- A coppice wood.
- Brought in loads from timber companies.

Prices £194 per tonne for bagged logs and £169 per tonne for loads.

Average selling price £181 per tonne.

Gross income £31,762

HEDGE PRODUCTS

- Saleable round and split logs
- Ugly sticks
- Nets of cobs using branch logger for very small log burners.
- Nets of kindling twigs



Pickup truck load of logs



Ugly sticks from 220m of hedge

THE SELECTED HEDGE

- 25% thorns, 25% Sycamore, 5% Ash, 10% Hazel, 10% Holly, 10% Willow, 5% Field Maple, 5% Oak and 5% Bramble.
- 220m long, 15ft wide and 20ft high. On a hedge bank.
- Environment: Altitude 600ft, above average wind speeds and above average rainfall. Soil was grade three.
- Double fenced with old barbed wire fencing.
- Half a mile from processing site, abstraction access was good.
- Coppiced at 15 years
- Profitability would have been greater at 20 years as the savings in flailing and increased tonnage of saleable material would outweigh any extra costs.



METHOD

- Hedge side flailed, old fences removed.
- Coppicing with small chainsaw, material separated into saleable product, ugly sticks, rods for cobs and some brash for kindling twigs.
- Standards from previous rotation tidied.
- Selected brash and rods were processed using a branch logger into their respective products.
- Remaining brash was heaped up and burnt.
- The saleable material was processed using a log splitter and saw bench
- The ugly sticks were cut into varying lengths with the saw bench
- All material was stored in large barns for drying down to 20% moisture

HEDGE PRODUCTION

- Nine tonnes of saleable logs
- Six tonnes of ugly sticks
- 99 nets of cobs
- 260 nets of kindling twigs



RESULTS: COSTS AND INCOME

Operation	Cost
Initial flail 2 hours £30 per hour	£60.00
Manual coppicing 88.5 hours @ £15 per hour	£1,327.50
Processing with Branch Logger 20 hours @ £30 per hour	£600.00
Abstraction of nets 8 hours @ £12 per hour	£96.00
Abstraction of cord wood 6 hours @ £30 per hour	£180.00
Brash burning 5 hours @ £25 per hour	£125.00
Processing saleable material and ugly sticks	£750.00
Delivery cost 15 tonnes @ £16 tonne	£240.00
TOTAL COST	£3,378.50

INCOME/ SAVINGS

Product/ saving	Income
Savings in annual flailing @£0.35/m (220m in 15 years)	£1,155.00
263 x 15kg nets of kindling twigs = 3.95 tonnes @ £190 per tonne	£749.50
99 x 25kg nets of cobs = 2.48 tonnes @ £190 per tonne	£470.50
6 tonnes of ugly sticks @ £150 per tonne	£900.00
9 tonnes of saleable logs @ £181.00	£1,633.50
TOTAL INCOME	£4,908.50
PROFIT	£1,530.00

- If coppicing grant available @ £4 metre
- A further income would be available of £880 making a profit of £2,410.00
- This would lead to a profit of **£10.95 per metre** over the fifteen year cycle

CONCLUSION

Many variables involved e.g.

- Work rate of the coppicer
- Coppicing contracted or in-house
- Age and condition of hedge

The finished hedge



DISADVANTAGES

Potential disadvantages include:

- Shading
- Crop retardation due to water shortage,
- Some land lost to the growing hedge on both its sides
- Some fallen material as the hedge reaches the end of the rotation.

So perhaps best avoided if the hedge bounds high value crops.

ADVANTAGES

- The farm may be entitled to the coppicing grant of £4/m
- It will increase the “natural capital” of the farm which may help with further support post Brexit.
- Immediate saving on flailing costs of 35p/ metre each year for next 15-20 years. Total savings over fifteen years £10.95 per metre.
- If the farmer wished to do it himself he could earn a living wage through savings and sales using this model.
- If the farmer employed a coppicer then he would at least save the cost of flailing.
- The different sizes of the hedges would create diverse habitats for flora and fauna.
- There would be some sustainable renewable energy production to supply local demand.

ADVANTAGES

- This 220m of hedge produced 88MWh of usable heat energy over fifteen years. This is the equivalent to 8,500 litres of heating oil.
- Some carbon sequestration in the hedge while it grows and longer term in the root systems and increased numbers of standards.
- Healthy large hedges will reduce run off speed and quantity as well as filter out a high percentage of organic and inorganic pollutants.
- Last but not least, this type of hedge management would improve the health and diversity of hedges which would enhance the landscape value to the public.
- If 5% of England's hedges were incorporated into a regime like this it would amount to some 25,000 Km being coppiced so that the results from this 220m of hedge would increase by some 113 thousand times.
- Wild Extrapolations.....

Perhaps above all if hedges can be seen as economically viable rather than a necessary cost they will have a better chance of surviving in the future.

