MGA Costs of Production

(Excluding Feeding-Out Costs)

	Grazed Grass (10 yr ley)	Grass Silage 3 cuts (7 yr ley)	Maize Silage	Maize (film)	Wholecrop
Yield of Fresh Matter (t/ha)	58	50	43	53	29
Typical Dry Matter Content of crop	18.00%	25%	30%	30%	45%
Yield of Dry Matter (t/ha)	10.4	12.5	12.9	15.9	12.8
Metabolisable Energy (MJ/kg DM	11.5	11	11	11	10.2
First Year Costs (£/ha)					
Ploughing	81	81	81	81	81
Cultivations	173	173	173	173	173
Sowing	48	48	57	57	64
Seed	198	198	200	200	81
Lime	280	196	28	28	28
Fertiliser	80	80	309	380	320
Sprays	29	29	70	70	225
Fertiliser applications	16	16	31	31	31
Spraying	16	16	33	33	33
Additoinal cost of film				441	
Slurry spreading	0	0	0	0	0
Total (per year)	92	120	982	1494	1036
Variable Costs (£/ha)					
Fertiliser	286	523	0	0	0
Slurry spreading	0	0	0	0	0
Sprays	12.1	12	0	0	0
Total	298	535	0	0	0
Contractor Costs (£/ha)					
Fertiliser Applications	94	94	0	0	0
Spray applications	16	16	0		0
Harvest + Sheets etc	0	584	217	217	218
Total	110	694	217	217	218
Rent (£/ha)	371	371	371	371	371
Total Annual Cost (£/ha)	871	1718	1569	2081	1624
Total Annual Cost (£/acre)	**353**	**695**	**635**	**842**	**657**
Cost per tonne of DM	83	137	122	131	127
Feed Out Costs (£/t)	0	0	0	0	0
Total Cost (£/t DM)	**83**	**137**	**122**	**131**	**127**
Total Cost (£/t fresh weight)	**15**	**34**	**36**	**39**	**57**

Summary of Table and Assumptions Used

- The first four rows of the table provide estimated averages for yields of fresh and dry matter, plus percentage dry matter (DM) of the crop, and the metabolisable energy content. Average yield data is just that, and huge variations around the average can be expected. Grazed grass gives the greatest tonnage of fresh matter but the lowest dry matter yield which is due to the high moisture percentage in the grass. Maize silage drilled under film will yield more, assuming variety genetics allow, as a consequence of extra heat and protection during early stages of growth.
- **First year costs** – this section lays out the costs (£/ha) during the first and, for maize and wholecrop, only year of production. As expected, maize drilled under film has high production costs due to the extra £420 film cost per hectare. Wholecrop wheat silage costs (£/ha) are high as a consequence of the agrochemical requirments of winter cereals. Growing costs will of course vary significantly depending on individual farm situations. We have assumed contractor costs for all operations.
- **Variable costs** – these are the fertiliser and spray costs for each year, following establishment. Grass silage has a greater fertiliser requirement due to the need to replace nutrient taken in the silage with inorganic fertiliser (we have assumed all nutrient supplied via inorganic manure). Replacing this nutrient with slurry would cut fertiliser costs but also increase spreading costs.
- **Contractor costs** – for grass these include the application of the sprays and fertilisers on an annual basis. The extra cost of harvesting and sheeting for grass silage is due to the multiple cuts per year.
- **Rent** – is an estimate and in no way meant to be a recommendation or target.
- **Annual Costs per unit of area and per tonne** – the growing costs have been totalled and divided by the land units (ha and acres). The average fresh and dry matter yields from the first rows in the table have been used to produce costs per tonne of dry and fresh material.

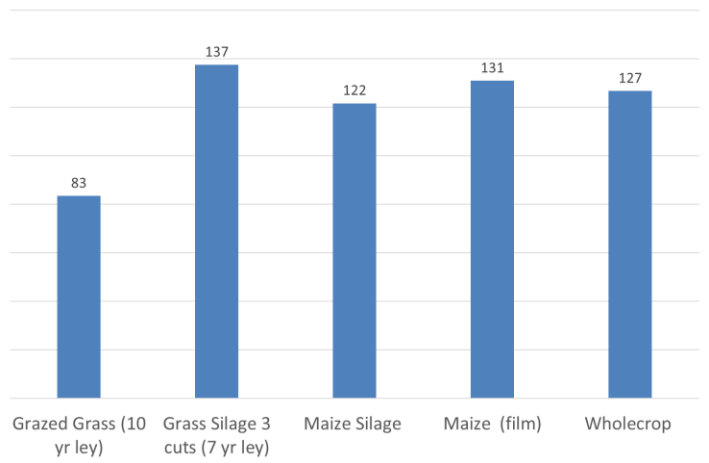

Figure 1 shows that, with the exception of grazed grass, the costs per tonne of dry matter are relatively similar for each alternative forage type. The reason for the lower cost for grazed grass is the lack of mechanical harvest costs. Grass silage costs are the highest due to the cost of fertiliser and multiple cuts. Maize drilled under film has a similar cost to that drilled without, despite the high film costs, because the DM yield is greater.

Figure 1. £/DM costs of production for different forages

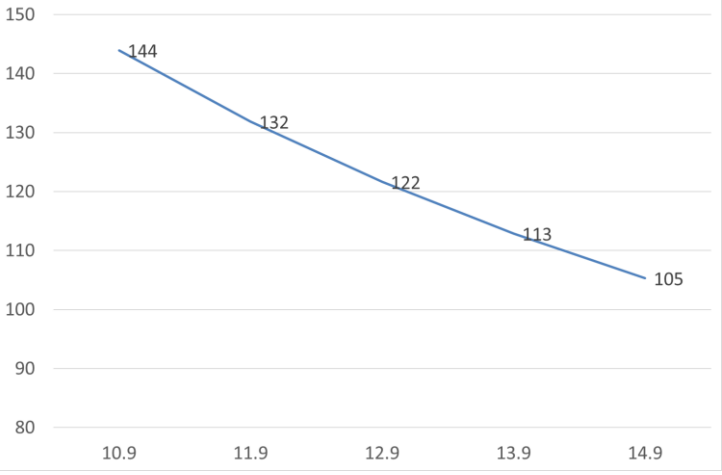

Figure 2, Using maize, grown without film, as an example, illustrates how yield variation impacts on costs per tonne of DM as most growing costs are relatively fixed per ha. A higher yield means that growing costs are divided across a larger volume making each tonne cheaper and visa versa.

Figure 2. Graph showing relationship between yield and cost per tonne DM