

Meadow Machinery: MMG Members' Feedback

This summer a request went out to MMG members for information about the equipment they use for managing their meadows. We had a good response, illustrating many of the different options available. In this article we are focussing on equipment for cutting and clearing or hay making.

This isn't a comprehensive review of what is available. The equipment, manufacturers and suppliers mentioned in this article are just the examples we have been told about by MMG members. There are many other options available – we'd be pleased to hear about them too. If you are interested in any particular machine or company mentioned here, we can pass on your enquiry to the member for more details.

The final section is a 'case study' submitted by Bob Osborne. It told an interesting story, so I did not want to précis this. Otherwise, I have taken information supplied and summarised as best I can. I hope I have accurately represented everyone's opinions and experiences. Any mistakes will be mine, and I welcome corrections and comments.

Note that all prices are liable to change and I have tried to ensure they include VAT, but they are for guidance only.

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Introduction

The choice of equipment largely depends on how much land you have to manage, how accessible it is and what you want to do with the cuttings. Some of our members have working farms, but here we focus on machinery for those with relatively small amounts of land, not suitable for large farm-scale machinery. As well as access issues, these sites need to avoid heavy equipment that would compress and damage the land. Many of our members have steep sided fields, as these tend to be the ones not agriculturally improved in the past.

Small Scale Meadows

The most nature-friendly set of equipment is, of course, a scythe, a pitchfork and a hay rake. An Austrian scythe, as well as being more environmentally friendly and healthy, is also very effective on bracken and brambles. However, choosing the right scythe is a topic in its own right, so in this issue we will keep to powered equipment, whether the results¹ are to be used as hay for animal feed, green hay to seed another meadow, or composted

In garden mini-meadows, if scything is not an option then brush cutters and strimmers can be used, together with a rake to remove the cuttings for composting.

But what are the main options if the land is a bit more than a mini-meadow? We shall start with equipment for smaller fields and move up the scale.

Power Scythes

For smaller fields and awkward spaces, a popular option is a power scythe, sometimes known as an Allen scythe. This is the type of machine MMG owns (a Tracmaster BCS power scythe). This cuts the grass with a scissor like action – a large, toothed cutting blade moves quickly over a similarly shaped fixed knife as the machine is guided forward on its two wheels by a controller walking behind it. On the original Allen Scythe the cutter was permanently fixed to the machine, and some still come as one complete unit, but these days power scythes usually take various other attachments, but only at the front (as opposed to two-wheeled tractors described later). The cutting attachment can also be described as a **cutter bar** or a **sickle bar**, and it is designed to leave the grass in a suitable state for raking up.

There's a knack to controlling a power scythe – as our volunteers David Llewellyn and Trevor Tyler-Batt will tell you! It can take a while to cover a field, compared with a ride-on tractor, and it is hard work but it's a relatively cheap option, great for small and hard to reach areas.

There are many brands of power scythes, but the Tracmaster is the most widely known and has the best reputation: www.tracmaster.co.uk/pages/bcs-crusader-power-scythes

The Tracmaster range of power scythes all have 600 model numbers and are known as BCS PowerSafe® Crusaders. The cheapest at the time of writing is the **BCS 614 Crusader**, at £3,240 including VAT. There are many other entry level power scythes starting around £1,000 but we have not received any reports of their effectiveness.

¹ Apparently 'math', as in 'aftermath', is an old English word referring to the cuttings resulting from mowing so maybe this would be a more appropriate catch-all term

It is possible to hire power scythes but I have not heard from anyone who has done this:

www.tracmaster.co.uk/pages/where-to-hire-a-bcs-power-scythe

Trevor Tyler-Batt uses the MMG Tracmaster **BCS 630 MAX**. He says that Tracmaster provide good information in their operating instructions and manual. The double wheels each side give it good stability on slopes. As well as grass cutting, the serrated teeth on the cutting bar make it effective for cutting bracken, brambles and small saplings, but long brambles get entwined round wheels. The machine is noisy (ear defenders are necessary) and the vibration can, if used for an extended period, cause hand-arm vibration syndrome so it should be used in short bursts ([more information on the HSE site](#)). (Note that BCS supply a **Duplex version** of the cutter which reduces vibration.)



There are three gears (both forward and reverse) but first gear gives the best cut and enables fauna such as toads and slow worms to make their escape, but this does increase the time needed to cut.

After the cut, the cuttings still have to be raked up and removed, but on a small field this is a very useful tool.

Two-wheel Tractors

Two-wheel tractors are more versatile than power scythes as they can be used with a range of useful attachments at both the front and back. The gearing is different too. However, when fitted with a cutter bar (also known as sickle bars or scythe bars) they cut in the same way as power scythes. (Cutter/sickle bar attachments are available for four wheeled tractors too.)

We heard from members using two makes, and again Tracmaster is the most popular:

- Tracmaster/BCS:
 - www.tracmaster.co.uk/pages/bcs-two-wheel-tractors and
 - www.tracmaster.co.uk/pages/bcs-commander-professional-mowers
- BSG/Goldoni: www.bsgtractorsandmachinery.co.uk/product_category/twist-two-wheel-tractors

Tracmaster's current range of two-wheel tractors all have 700 model numbers. Their prices start at £2,514 for just the tractor, but the attachments must be bought separately, with scythe attachments starting at £1,206.

Goldoni start at £1,954 plus £880 for the attachment

Note that although the adaptability of a two-wheel tractor for adding different implements can be useful, when the handlebars are swivelled to change implements the tyre tread chevrons face in the wrong direction for grip. If this is a problem, the wheels have to be swapped over.

Paul Gordon has a **BCS 738 Two-wheel tractor** with a scythe attachment which he says is very useful for cutting the long grass in the garden (about 60m x 30m) after no May/June/July (he also has a four-wheel tractor for the field). He uses the hay rakes and hay forks to remove the cuttings by hand. (He says he is considering using a tractor after the main cut, to chop the grass to smaller lengths and collect in their grass box.)

Paul purchased the machine from **L&M Young of Langstone, Newport** and has had no maintenance problems.

Tim Moss has some very steep fields on which he uses a **Tracmaster Bank Commander** with a scythe for the cutting and then a belt hay rake attachment for flicking the grass into rows ready for pushing down the bank with a quad tractor (more on this in the next section).

Tim purchased this machine from **L&M Young** too, and they also service it. It was suggested he went for a smaller version than the Bank Commander, but “every time I used it, I was so glad I had gone for that model. On the really steep banks I found it essential to have differential steering. They do a diesel version now which is the one I’d be tempted by.”



Tim Moss' Tracmaster Bank Commander in action

Matt Lloyd has a range of equipment, including a **Goldoni Twist 10s**, two-wheel 9hp tractor. He writes that this is “a great machine that takes a variety of attachments, however Goldoni no longer seem to supply any attachments or spares. I would therefore not recommend them now.”

(Note that BSG now only supply the **Twist 8 and Twist 9DS** – since Goldoni were taken over in 2015 the range has been reduced and it seems likely BSG are looking for alternatives.)

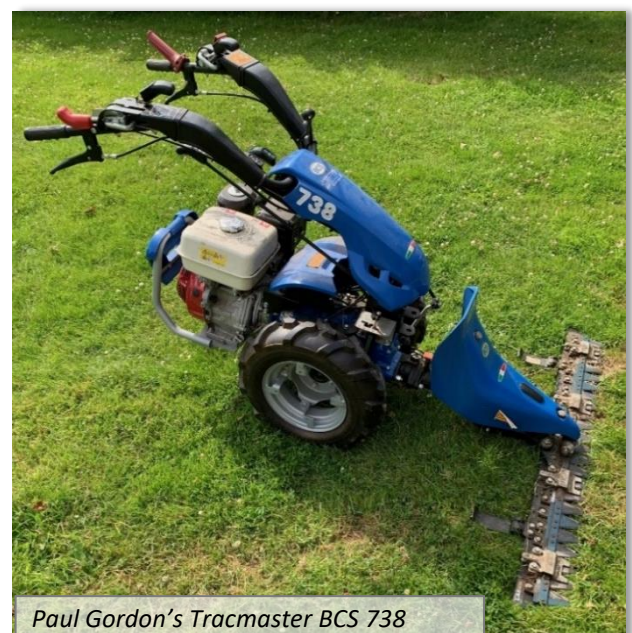
Matt uses a **Goldoni D85 1.5m cutter** (sickle) bar attachment which is “ideal for cutting small and awkward-shaped meadows. Very efficient and causes least damage to wildlife, particularly insects (because it performs like a scythe it leaves the majority of the hay untouched...unlike flail collectors or drum mowers). Physically hard work though, particularly with wide bars, and requires a lot of relatively skilled maintenance to adjust the cutting and sharpen blades.”

Matt also uses a **Molon M021 side rake** which fits the Goldoni Twist and can turn cut hay and rake into windrows using the PTO². This is “a brilliantly efficient way of raking up hay, particularly small/awkward shaped fields.”

“The above three items work very well on small/awkward shaped fields due to their small size, manoeuvrability, and the implement being out in front. They are also far less costly than 4-wheel tractors and implements.”

(Note that the Molon rake can also be used with BCS and Grillo machines.)

However, because of issues with supply of Goldoni parts and incompatibility between different machines and implements, Matt says if he was starting again he would look at Tracmaster, and feels that an easier option to use could be the BCS “dual” bar, on which both upper blades and lower



Paul Gordon's Tracmaster BCS 738

² Power take-off

guides move in opposite directions. (This is the [Duplex option for the Tracmaster power scythe.](#)) He says “that makes cutting easier and eliminates a lot of the vibration apparently. I expect that would allow a wider bar to be used and/or larger areas to be tackled.”

Matt’s two-wheel tractor is also used to mow and collect cuttings on paths through the meadows, to avoid needing another cutting machine, and finds the hopper is large enough to cut a lot of paths without frequent emptying.

Collecting after Cutting with a Two-wheel Tractor?

When MMG use the power scythe, the cuttings have to be raked and collected by hand. Tim and Matt both use rake attachments to rake into rows for collecting, but turn to their four-wheel tractors for moving the cuttings. If you are going to make hay, however, you also need a way of tedding it (turning it to ensure it dries out). For their two-wheel tractors, Tracmaster sell a rake which can also be used as a tedder, and a mini baler attachment. In general, balers are believed to be problematic – complicated to use and very susceptible to breakdowns, and expensive – the **Tracmaster mini baler** is £11,940!

Does anyone have any experience with small balers on two-wheel tractors?

Four-wheel Equipment for Larger Meadows

There are a lot more options when it comes to four-wheel vehicles, and there was no real consensus among the replies received on the best way to go. Many of the replies described equipment used for cutting grass and clearing bracken/brambles, and very few described traditional meadow hay-making.

In general, for larger areas where light, manoeuvrable equipment is preferred, small four-wheel tractors can be used. On steep slopes, such as those in the Wye Valley, an equal wheeled tractor (also described as a quad tractor) is preferable, as it is more stable. Other advantages include a better weight distribution, which damages the land less than a tractor with weight concentrated on the two large back wheels (when used for the purposes described here anyway – large back wheels are better in other contexts). Otherwise, smaller versions of traditional unequal wheeled tractors are an option.

Tractors for Hay Making

Tractors are designed to be multi-tasking of course, so you must also select the attachments you need. **Disc mowers or drum mowers** are usually used for cutting for hay. Disc mowers are heavier and more expensive, so for smaller tractors it narrows down to a drum mower. These have horizontally-mounted cutting blades designed for cutting grass quickly while coping with thickets and uneven ground, and leaving it in wide rows ready for tedding (to turn the hay and dry it out).

You then have to deal with the cuttings. The options are baling or raking/gathering – it all depends what you are doing with it, and whether you have a baler, a rake attachment, and/or a trailer. Some members have devised some innovative solutions to avoid hand raking.

Other Tractor Attachments

Other equipment that members have mentioned includes

- trailers - very useful, especially if you want to transport green hay to seed other sites
- tedders – used to rake and turn grass lying on the ground to dry it out, before raking and baling or gathering for hay
- rakes – in particular for raking the cut grass into windrows ready for baling. Other types of rake attachments are available
- buckets and other transport boxes, harrows (of various types), scarifiers, toppers, seed collectors, and many other useful tractor attachments

Cutter-Collectors

If you aren't making hay, you can use a flail cutter which can cope with rough grass and scrub, but it mulches the grass as it cuts so it doesn't leave the cuttings in a fit state for hay or for raking up easily. In wildflower grassland you would normally only use a flail cutter together with a collector to catch the cuttings as it flails and carry them directly to a compost heap. A collector can be added to a tractor, or there are dedicated cutter-collector machines, also called 'flail collectors' (as recently brought into service by Monmouthshire County Council) which should be great for large fields which aren't to be cut for hay (although that wasn't one person's experience), but they are very expensive. Collecting equipment, whether a tractor attachment or a dedicated machine, can get very heavy, which is a problem (and possibly dangerous) when used on steep land.

John Hinderer reports that he purchased a **Farmmaster FCL-120 flail mower collector** which the sellers claim is "perfect for wild flower meadows can cut and collect many different types of grass". Unfortunately after trying it out, it did not work well. John says "I think my plot is too rough for it. Too many mole hills, thick grass, nettles, bracken etc." ([Here is a YouTube video of this machine](#))

Cutting and Separate Collecting

Starting with our own experience at The Beeches, where we manage about 6 acres of steep grassland. For safety we needed an equal wheeled tractor so in 2012 we bought a small **Goldoni Quad tractor** from **BSG Tractors and Machinery** in Colchester, Goldoni's distributor in the UK. BSG build the body over an Italian made Goldini chassis designed for steep narrow Italian vineyards, so it is ideal for slopes and very manoeuvrable. It is air-cooled which makes it simpler mechanically (but noisier). It has been serviced every year by the BSG engineer who comes this way regularly for their customers, and we have had no major mechanical issues. However, Goldoni in Italy was taken over in 2015 and since then spares have been getting harder to obtain (exacerbated by the difficulty most companies are experiencing bringing in spares from Europe).



Goldoni Quad tractor with drum mower attachment, and Darryll the BSG engineer

BSG have now switched their focus to Ferrari tractors, which are a little larger and are water cooled, but they still sell the Goldini Quad.

Not being good with machines we avoided a baler and purchased a bespoke trailer with a drop-down side, specified by us to make hay collection easier. We hand rake, collect into the trailer and unload into heaps at the bottom of the hill so runoff goes into the woods. We also have a link box and log splitter which attach to the tractor – both get a lot of use.

The Goldoni was good value compared with other small tractors we looked at, but still not cheap (currently £12,468 including VAT).

Prices are on their web site: www.bsgtractorsandmachinery.co.uk/product_category/tractors

Matt Lloyd also purchased his four-wheel tractor from BSG - a **Ferrari Cromo K30 AR 27hp**. He writes “This is an equal-wheeled, compact, all-terrain tractor used for a range of tasks in addition to the above. It is very capable, well-made and efficient. It is also Italian, however spares availability does not appear to be too badly affected by Brexit. This type of tractor has a very low centre of gravity and articulated axles, which makes it very stable on steep slopes. The large/wide tyre options allow for very low ground pressure, good for soft ground, and the articulated steering allows a very tight turning circle giving great manoeuvrability as well as being less damaging on soft ground. In combination with 4WD, this makes for a tractor that can handle boggy ground, slopes, tight spaces and awkward field shapes. However, articulated steering makes it harder to drive in a straight line when doing other jobs such as rolling a field.”

After cutting and raking into windrows with his two-wheeled devices, Matt has an innovative way of using the four-wheel tractor for collecting, by pushing the windrows into piles, then pushing the piles onto a tarpaulin that is dragged by the tractor to a suitable spot for composting. The windrows are pushed using a buckrake. Matt says “I have tried a buckrake attachment for the two-wheel tractor without success. Instead I use a larger buckrake on a four-wheel tractor three-point linkage which works well, however one must be careful to keep the tines low enough to get under the windrow but not too low so as to drive a tine into the ground.”

Tim Moss cuts his land with a Tracmaster (described above) and used the **Tracmaster belt hay rake** attachment for flicking the grass into rows. He also uses a **Goldoni Quad tractor** with a rear transport bucket to push the grass rows off the field. He says “It sounds like it should be very piecemeal but it worked exceptionally well with very little grass left behind. The land was too steep for a baler and the whole process was much simpler. I hear balers are temperamental and eye watering expensive. Our way we could cut and clear 4 acres in a day, but usually spread it out over two days.”

The Beeches Goldoni Quad tractor and custom-made trailer for carting hay



Tim Moss' Goldoni tractor with bucket attachment

However, here at The Beeches we have tried using the ‘pushing’ method, but found our land is too uneven and this method of collecting did not work.

Baling

It seems very few of our members who aren’t managing a farm do their own baling (it would be useful to hear from those that do). **Hand balers** are available, but baler attachments for tractors can be expensive and are subject to mechanical failure – a number of members have tried and given up on them. Baled hay is easier to move around which is the main reason for doing it, and offers the option of selling or giving it away for animal feed. It’s also good for seating at barn dances!

In the early day, MMG had their own tractor and baler for a while. The baler required constant attention to keep it working smoothly, so it just wasn’t a practical proposition for the group and this equipment was sold.

Belinda Davies does use one. They cut their meadow with a **Tracmaster** but then use a 45hp tractor with **mini round baler** which she says is “perfect for our small fields”. They also use an ancient tedder off the back of the tractor for tedding and rowing up. Belinda received good service from www.danelanderonline.co.uk in Flintshire, and she is happy to talk to members if they are thinking of getting kit of their own. [Here is a YouTube video of one in action](#)

Other Cutting Options

Paul Gordon has two tractors: a **John Deere X949** and a **3046R**. The first is a largish sit on (4-wheel drive/steer) with a 60” cutting deck and grass box. The second is a utility tractor with 60” cutting deck and big grass box (600 litre capacity). Both were bought from **Frank Sutton** and Paul says he could not manage without them. Amongst other things they are used for mowing the meadows after the main hay cut has been done by a local farmer, and for removing the cuttings. As he relies on the farmer, cutting can be done earlier than is ideal, so the extra cutting is done every few weeks and collected with the bigger (Utility) tractor through to the end of October.

Other equipment used with the tractor: a hydraulic log splitter, shredder, rotovator and finishing mower.

Ian Maberley of Nant y Bedd gardens has purchased a **Grillo CL75 walk behind brush-cutter mower** from their dealers www.hopkinsmachinery.co.uk in Newport. This isn’t a meadow cutter, but Ian says “it munches through bracken, clumps of hard rush and bramble with not too much effort. The cutting deck is 75cm/30 inches which gets through a lot of work fairly quickly. I chose the walk behind over the ride-on for safety on the banks. I negotiated twin drive wheels which makes it more stable on our banks and also easier to use when the ground is wet.”



Paul Gordon's utility tractor: a John Deere 3046R



Paul Gordon's John Deere X949

The cost was around £3500 at the time. Ian is also happy to demonstrate the machine.

The Companies

There are many other makers/suppliers of this type of equipment, as a quick internet search will show. If you have experience with a particular dealer or brand, do let us know. We are particularly keen to support companies that give good service. These are the companies mentioned to us by members:

Tracmaster is a British company that works in partnership with BCS in Italy, and supplies equipment through a **network of dealers** including **L&M Young of Langstone, Newport**

BSG Tractors and Machinery supply Italian made **Goldoni** and **Ferrari** equipment but also produce items of their own especially adapted for these machines. Since Goldoni was taken over by a Chinese owner in 2015 and turned their attention to larger tractors, BSG have been focussing more on Ferrari. They are based in Essex but have a “small, dedicated team” of engineers who travel the country to service and maintain the equipment

www.danelanderonline.co.uk have a range of their own equipment, including the small baler mentioned by Belinda Davies

Grillo are another Italian company with a range of dealers around the country including www.hopkinsmachinery.co.uk in Newport. Grillo have a range of power scythes and cutter attachments: www.grilloagrigarden.co.uk/sickle_bars and www.grilloagrigarden.co.uk/walking_tractors

Mary Neal is very pleased with her ISEKI TM 3265 Tractor from **Keith Morgan Mowers**, at Llancayo Farm, Gwehelog, Usk, NP15 1HY, tel 01291 673203. She says “they do not advertise so were tricky to research but the whole process was straight forward and Ben has been on hand to answer our queries etc.”

For **servicing** the Tracmasters, MMG uses Gareth Morgan, **GM Mowers & Machinery Ltd** at Cae Garw Farm near Trellech

Ian Rabjohns uses **Revill Mowers** of Coleford to service his Tracmaster www.revillmowers.co.uk

For **Tracmaster hire**: www.tracmaster.co.uk/pages/where-to-hire-a-bcs-power-scythe



Ian Maberley with the Grillo brush-cutter

References

<https://oldlawnmowerclub.co.uk/mowers/profiles/mp014-allen-scythe>

https://en.wikipedia.org/wiki/Allen_Scythe

<https://meadows.plantlife.org.uk/making-meadows/machinery-for-creating-and-managing-meadows/>

Bob Osborne, Penterry

We have 8 acres above Tintern where we keep a couple of aged horses and a few sheep and, although not managed specifically for the benefit of flowers, the land is not intensely farmed, no fertiliser has been used for many years, though we do spread the muck heap, and there are definitely many more species present now than when Steph did a survey a while back. Last year we were rewarded with a pretty selection of flowers which provided food for insects and also a flock of goldfinches in the autumn.

When I retired 10 years ago we thought to make life a little easier for ourselves by buying a small tractor. It is a 1980's Massey Ferguson 230 which arrived complete with bucket:

The bucket has been used for managing the muck heap, maintaining our access tracks and on one occasion moving snow.

Buying the tractor was not something I would have liked to attempt without the help and guidance of friend who has farmed all his life (he's now in his 80's) and has always had an interest in vintage machinery. My neighbour also gave me the advice that I should not buy anything with under 30 hp (the 230 is rated at 38 hp). The tractor was usable immediately but needed work on it to replace the clutch. I am fortunate in having a friend who is a very experienced vehicle fitter and also likes working on tractors!

A tractor on its own is obviously not very useful so we also bought a few tools of which the most used is undoubtedly the link box which has a myriad of uses for example it enables us to cart stuff like water and feed troughs about as well as the cans of water for filling.



We needed equipment to help us with grassland management so purchased a chain harrow (3m wide) and topper (currently Teagle 510 which was a replacement for the original). The topper is the only item for which I use the PTO. I have no photo of the Teagle but this was the original:



We have subsequently bought a couple of additional pieces of equipment to allow us to carry out maintenance work and manage the place. First we decided that, contract fencers being difficult to get hold of and rather expensive, we would invest in a hydraulically operated post driver which has probably paid for itself several times over.

The second item is a log-spitter which has enabled us to manage firewood:

This last has seen much use recently when a very large oak came down.

In addition my neighbour has kindly allowed me to borrow his small tipping trailer and his Cambridge roller when needed.



The original idea was that the machinery would make our lives easier and that has indeed happened but it has also enabled us to do far more for ourselves than would otherwise have been possible so life has not become less full!

I hope this information may be of use to some of the members who are considering such a purchase and would be willing to talk to anyone who is interested.

Bob Osborne
St. Arvans