GRASSLANDS

JOURNAL OF THE SOUTH-WEST AND CENTRAL SCOTLAND GRASSLAND SOCIETIES

No. 27 May 1984

CONTENTS

FOREWORD

Milk quotas, stagnant or falling prices and rising costs are causing considerable concern to the farming industry. In addition, the Countryside and Wildlife Act and the Pollution Act are generating further debate and controversy. Thus one may feel inclined to take a pessimistic outlook for the future.

While tougher times lie ahead, those who can farm their grassland well will undoubtedly be able to counter some of the pessimism and even look forward with optimism. Fortunately the west of Scotland is one of the best areas in Europe for the growth of grass. The Money from Grass '83 campaign could not have been better timed and a report on the final meeting is presented in this issue.

The Societies' activities of winter meetings, farm visits and competitions all aim to keep 'grasslanders' on their toes and update them on grass and animal production matters. There is also a wide range of services available to the farmer from the Colleges and commercial firms. Advice, used wisely, is another input resource which can give economic advantage over those who choose to ignore it.

Continuing the review on animal production systems as in Greensward Nos. 25 and 26, Harry McClelland of the Kirkton Farm Unit has contributed an article on the changing financial scene for fat lamb production - a most timely comment upon which there is still time to act and make sound economic decisions.

To repel the continued attack from the conservation lobby, we must keep our house in order and put forward our industry's views and successes clearly. The Farming, Forestry and Wildlife Advisory Groups (FFWAGS) are available to assist farmers in a constructive and helpful manner. Many of their suggestions offer ideas on simple conservation measures which are so easily overlooked, and which will have very little effect on normal farming activities. Most farmers are conservationists at heart, the land and countryside being their inheritance and legacy as well as their source of livelihood.

During the past year Idris Hunt and Malcolm Castle were elected as Honorary Vice Presidents and Life Members of the South West Grassland Society. Malcolm also received the prestigious British Grassland Society Award for his many contributions to grassland science and farming. Congratulations to both.

The Societies wish to convey thanks to advertisers for continued support and to Miss E. Mitchell for typing the manuscripts.

Ronald D. Harkess - Editor

INTERNATIONAL CODE NUMBER - ISSN-0017-4092

SOUTH WEST SCOTLAND GRASSLAND SOCIETY

EXECUTIVE COMMITTEE, 1983-84

Chairman	J S Watson, Creoch, Ochiltree, Cumnock, Ayrshire.
Vice-Chairman	J M L Milligan, Culvennan, Castle Douglas, Kirkcudbrightshire.
Past Chairman	R J R Ramsay, Lodge of Kelton, Castle Douglas.
Secretary	Dr G E D Tiley, The West of Scotland Agricultural College, Auchincruive, Ayr.
Treasurer	Dr J S Chalmers, The West of Scotland Agricultural College, Auchincruive, Ayr.
Journal Editor	Dr R D Harkess, The West of Scotland Agricultural College, Auchincruive, Ayr.
Ayrshire Members	J N Watson, Hannah Research Institute, Ayr. A S Young, Barshare Farm, Cumnock. N Day, College Office, 20 Miller Road, Ayr.
Dumfriesshire Members	J M Smith, East Upper Priestside, Cummertrees, Annan. W Sloan, Ryemuir Farm, Lochmaben, Lockerbie. A L Minshaw, College Office, St. Mary's Industrial Estate, Dumfries.
Kirkcudbrightshire Members	J Bell, Redbank Farm, Southwick Road, Dumfries. T McMillan, Drumwall, Gatehouse of Fleet, Castle Douglas. M J Wrathall, College Office, St. Mary's Industrial Estate, Dumfries.
Wigtownshire Members	D Evans, Penkiln, Garlieston. A Marshall, West Kirkland, Wigtown, Newton Stewart. C R Phillips, College Office, 99 George Street, Stranraer.
Co-opted Members	I R Fraser, Central Scotland Grassland Society, Pathfoot Building, University of Stirling, Stirling.

THE CENTRAL SCOTLAND GRASSLAND SOCIETY

EXECUTIVE COMMITTEE, 1983-84

Chairman	Mike Milne, Solsgirth Estate, Dollar.
Vice-Chairman	Sandy Bankier, Fernieshaw, Cleland.
Past Chairman	George Blackhall, Hill of Westerhouse, Carluke.
Secretary	Iain Fraser, The West of Scotland Agricultural College, Pathfoot Building, University of Stirling, Stirling.
Treasurer	Ken Phillips, The West of Scotland Agricultural College, 57 High Street, Lanark.

Committee Members

Retire A.G.M. 1984	W C Baird, Floors Farm, Eaglesham. J Hunter, Luckenburn Farm, Slamannan, Falkirk. R Russell, Burnhouse, Kirknewton.
Retire A.G.M. 1985	R Carruth, High Auchensale, Kilbarchan. J Paterson, Garrionhaugh, Overtown, Wishaw. J Warnock, East Langton Farm, Mid Calder.
Retire A.G.M. 1986	W Andrew, Jnr, Crossflat, Kilbarchan. W Lawson, Parklea Farm, Carmunnock, Glasgow. A Orr, Boagston, Avonbridge.
College Representative	C C Watson, 73 Craiglaw Drive, Eaglesham.
Co-opted Members	J D Edward, Dunallan, Murray Place, Dollar. D Marshall, The West of Scotland Agricultural College, 57 High Street, Lanark. A McCauley, 10 Ellaleen Grove, Gossford, Dumfermline. Dr G E D Tiley, The West of Scotland Agricultural College, Auchincruive, Ayr.

LAMB PRODUCTION - WHERE NOW?

T.H. McClelland

Kirkton Farm, The West of Scotland Agricultural College

The 1984 EEC Farm Price Review has recently changed the rules governing support of the sheep industry. The changes can be summarised as follows -

1. Variable premium will continue to be paid on lambs as previously i.e. the difference between the average UK market price and the guide price will be paid in full.

2. The average guide price for the year will be 2p per kilo less in 1984/85 than it was in 1983/84.

3. The seasonal scale of guide prices has been changed radically. It now drops 40p per kg during June and remains at 198.1p per kg from 9 July to 1 October (12 weeks). Last year it dropped very gradually reaching its lowest point, 205.4p per kg in mid September where it remained for only 6 weeks. One crumb of comfort:- the new scale gives improved incentive to finish lambs in the period January to March.

4. Changes in the method of calculating the ewe premium are likely to result in this being held at around £6 per head for 1984/85. Lamb producers could have expected over £8 per ewe under the former system of calculation.

5. Only farmers in the Less Favoured Areas will receive an advance payment of the Ewe Premium and then only 30%; not 50% as previously. Fortunately, the majority of lamb producers in Scotland fall into this category.

The change likely to have the greatest effect on the returns to lamb producers is the change in the seasonal scale. It is possible to calculate the effect this will have on lamb values in 1984/85 compared with 1983/84. Table 1 shows the effect on a monthly basis and Table 2 on a weekly basis over the June/July period when the guide price falls rapidly i.e. 40p in June alone.

Why have these changes been made? Producers must feel somewhat bewildered by the sudden change in their fortunes. After all there is no lamb surplus in either the UK or the EEC as a whole. In fact, the UK imports around 200,000 tonnes of lamb annually from New Zealand. It is the pattern of production which has caused the problem. Grass was, is and always will be the cheapest feed for sheep. It is not surprising therefore that in a country where grass is plentiful and relatively easily grown that lamb production is geared to the grass growing season. Most lambs from lowland flocks are born to grass in spring and are reared on grass, and many will achieve easily the optimum finished weight and condition at some 16 to 24 weeks of age i.e. in July, August and September. Since the introduction of the sheep meat regime in 1980 supply had outstripped demand during this period with the result that the market price has dropped and the variable premium has increased making up the difference between the average market price and the guide price. Producers have been protected from the effects of seasonal over production and normal market forces. The new seasonal scale attempts to do two things viz:

(a) to reduce the cost of supporting over supply during the summer months.

(b) to encourage the marketing of lamb at times of the year when demand is high and supply low i.e. during the period December till May inclusive. (This should be good news to hill sheep farmers whose systems are geared to the production of store lambs to be finished on forage crops for this time).

It is very probable that if the changes introduced in 1984 do not achieve these objectives, even more biting measures will be introduced such as limiting the variable premium to 25% of the guide price as has been proposed already and thankfully rejected. It is possible that the variable premium system of support operated in the UK could be abandoned completely and replaced with a support system based on intervention buying. Many economists would argue that such a system makes sound economic sense for sheep meat where the commodity is not in overall over supply and where the supply is not constant over the year.

Table 1. Average monthly differences in lamb revenue in 1984/85 over 1983/84 (£ per head).

Month	Estimated dressed carcase weight (kg) 15.5	18.5	21.5	24.5
April	2.79	3.33	3.87	4.41
May	1.61	1.93	2.24	2.56
June	(-) 1.20	(-) 1.43	(-) 1.66	(-) 1.89
July	(-) 4.30	(-) 5.13	(-) 5.96	(-) 6.80
August	(-) 2.60	(-) 3.11	(-) 3.61	(-) 4.12
September	(-) 1.32	(-) 1.57	(-) 1.83	(-) 2.09
October	(-) 0.94	(-) 1.12	(-) 1.30	(-) 1.48
November	(-) 0.47	(-) 0.56	(-) 0.65	(-) 0.74
December	0.16	0.20	0.23	0.26
January	1.36	1.63	1.89	2.15
February	1.83	2.19	2.54	2.90
March	0.89	1.06	1.23	1.40

Table 2. Reduction in lamb revenue in June and July 1984 over 1983 (£ per head).

Week beginning	Estimated dressed carcase weight (kg) 15.5	18.5	21.5	24.5
June 4	.57	.68	.80	.91
11	(-) .20	(-) .24	(-) .28	(-) .32
18	(-) 1.75	(-) 2.09	(-) 2.43	(-) 2.77
25	(-) 3.43	(-) 4.09	(-) 4.75	(-) 5.41
July 2	(-) 4.79	(-) 5.72	(-) 6.64	(-) 7.57
9	(-) 4.73	(-) 5.64	(-) 6.56	(-) 7.47
16	(-) 4.37	(-) 5.22	(-) 6.06	(-) 6.91
23	(-) 3.98	(-) 4.75	(-) 5.53	(-) 6.30
30	(-) 3.64	(-) 4.35	(-) 5.05	(-) 5.76

What are the options open to producers? The sheep industry in Scotland will be less effected by the changes in the seasonal scale of guide prices than that in other parts of the UK as a smaller proportion of the lamb crop is sold during mid summer (Table 3). Until 1980 peak marketing of finished lambs in Scotland occurred in December and held fairly high through January, February and March.

Table 3. Cumulative percentage of lambs sold for slaughter by month and region and the total percentage sold by region (1982).

Region	Up to end May	June	July	Aug	Sept	Oct & Nov	Total sold
Scotland	2	7	13	28	38	44	67
Northern	4	8	17	30	42	52	71
Eastern	7	21	34	47	59	60	71
South East	2	11	26	38	50	58	71
South West	6	21	34	45	53	57	69
Midlands	5	16	29	41	51	59	76
Wales	4	11	21	35	46	62	71
Overall	4	13	25	37	48	56	71

Source - MLC Sheep Yearbook, Nov. 1983.

Whilst this statistic may offer some comfort to the industry in Scotland as a whole, it does nothing to solve the problem for those producers, mostly in the better uplands and lowlands whose systems are geared to selling lambs in July and August. One of the major differences on time of selling is lambing date as shown in Table 4.

Table 4. Effect of lambing date on the cumulative percentage of lambs sold from flocks selling most of their lambs as finished lambs.

Mid-lambing date	Up to end May 1982	FINISHED LAMBS June	July	Aug	Sept	Oct	ALL LAMBS
1st half of February	25	46	55	63	71	73	74
2nd half of February	9	33	50	68	72	78	86
1st half of March	6	27	46	61	71	75	82
2nd half of March	1	14	30	47	60	68	78
1st half of April	0	6	25	45	60	71	85
2nd half of April	1	3	12	31	46	58	64

Source - MLC Sheep Yearbook, Nov. 1983

These data indicate that on average even with a February lambing time, only around 50% of the lambs are sold before the price falls in June. (The value of a 19 kg carcase falls £10-£12 over the month of June). In Scotland, February lambing flocks require substantial inputs of concentrates between lambing and the onset of grass growth and it is very doubtful if this high cost feeding can be justified in future if only 50% of the lambs are graded before June and the remainder sold at minimum prices in mid summer. The options are as follows:

Option 1. To lamb earlier (December, January) and aim for virtually 100% lamb sales before June. Such a system is high cost in terms of ewe feeding during lactation and lamb creep feed. A high level of management is required for an early lamb production system. Many of our native breeds and crosses of ewe are reluctant to take the ram early (i.e. August) and equally important, rams often exhibit low or even non-existent libido (interest in the opposite sex) in August, accordingly hormone stimulation may be required and this can be very hit or miss. Successful early lamb production systems do exist and will be financially rewarded in the future. It is likely, however, that only the real enthusiasts will venture into this highly specialised area.

Option 2. To delay lambing until late March/early April and aim to produce mostly store lambs at weaning in August. Growth rate becomes of less importance and accordingly stocking rate can be increased thereby maintaining output and gross margin/ha even though output per lamb or gross margin per ewe might fall. Alternatively, stocking rate could be maintained as previously, and nitrogen input reduced with a similar result. Lambs could be sold store for finishing in specialised systems during the autumn and early winter. Alternatively, lambs could be weaned and a finishing enterprise established making use of autumn grass induced by some additional nitrogen applied in August and/or specially grown crops such as rape, turnips and swedes. Barley can be used to supplement both grass and forage crops with benefit. Care must be taken, however, to safeguard autumn keep for the breeding ewe flock.

The Texel ram might regain some of its recently lost popularity in store production systems. Texel cross lambs may not have the most rapid growth rate *per se* but their lean meat growth rate is just as good as that of the Suffolk and they do not get over fat so readily. In store lamb production systems, growth rate is less important than quality. Texel cross sheep undoubtedly have quality.

Option 3. To produce heavier lambs might be considered by some producers. This is fine if the lamb currently being produced is only yielding a dressed carcase of around 19 kg. In Scotland, however, the average carcase weight produced in summer is over 20 kg and attempts to add to this are likely to result in over fat carcases, which are not wanted, and are likely to be heavily penalised pricewise in the future. In fact, some producers could well consider selling lighter lambs earlier with financial benefit i.e. 18 kg lambs in late May/early June (worth £47) rather than 22 kg lambs in late July/early August (worth around £41). This might involve a change in ram breed to one earlier maturing than that used previously, i.e. a smaller Suffolk or a Dorset.

It is likely that Option 2 will be that chosen by most producers, i.e. a return to the traditional Scottish system. Lambs will continue to be put on the market in summer but it is hoped that producers will alter their systems so as to minimise these and prevent a glut occurring. The old cure for reduced income of producing more of the same is just not on. As has happened in dairying this will not be sustained either by the CAP or national relief and to try it is only to invite even more severe cuts at future reviews.

The hill sheep producer. On the face of it the hill sheep farmer producing mostly stores for winter finishing should be little affected and if anything the store price should harden in the light of better support for lambs/hoggets finished from December onwards. The low "fat" price likely to occur at store lamb sale time coupled with additional cross bred lambs being offered as stores may work to keep a "no change" situation or might even bring about a fall in price. This should not happen either in the light of the profitability recorded for hill lamb finishing systems in 1982/83 and 1983/84 or projected returns for 1984/85. Hill sheep producers may have lost the opportunity of selling at least some lambs

sinclair, mcgill plc

PLANT BREEDERS & SEED SPECIALISTS

Benefits from **castlehill** our famous

Permanent Pasture MIXTURE

castlehill is composed of varieties of grasses designed:

* To require minimum maintenance with Clovers providing free Nitrogen
* To give plenty of grass in that mid-summer period of slower growth
* To persist and have good Winter Hardiness
* To give maximum grazing over a long season

For all your grass seed mixture requirements

Consult the Experts:

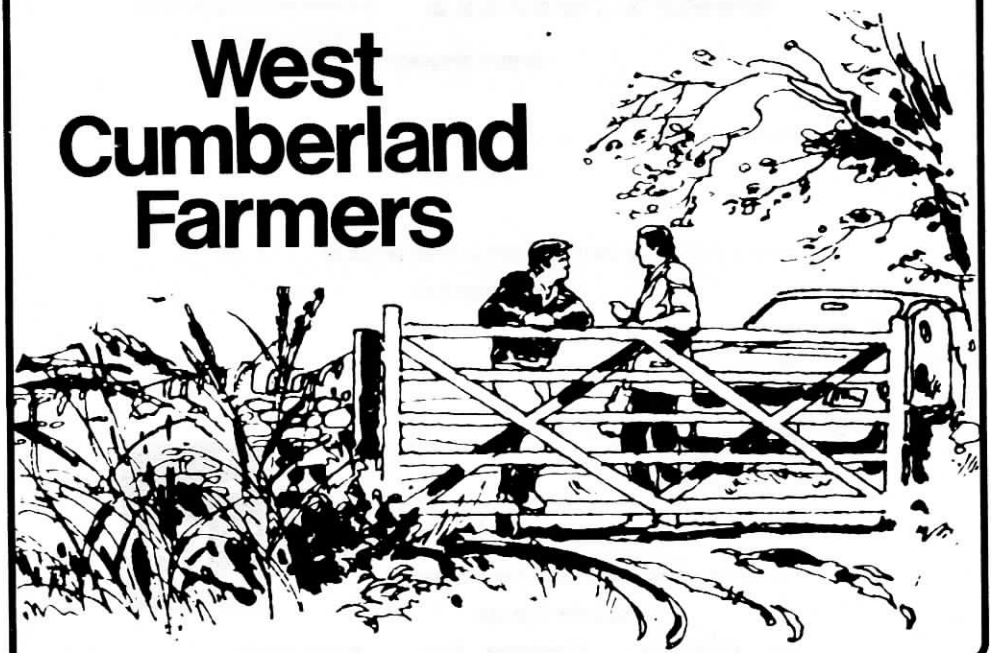
Ayr: 263271/2/2 **Haddington: 3304** **Kelso: 24121**

Talking Farming with FARMERS

West Cumberland Farmers speaks with the authenticity of a farmer owned organisation serving farming requirements throughout Northern England and Southern Scotland. There's a WCF branch or a WCF man near you!

The authentic farmer's voice

West Cumberland Farmers



in the "fat" ring at a premium over the store ring. However, their future is still relatively secure and should encourage investment in land improvement etc. aimed at increasing production.

Conclusion

Sheep production has taken a knock. The boom days are probably over. The enterprise is however much more viable now than during the late 1970's and is likely to remain so in the foreseeable future. Much more thought, care and planning regarding breeding, feeding, general management and particularly marketing will require to be given if incomes are to be maintained and improved. Competition for existing sheep farmers will increase as the dairy and cereal sections are squeezed and look for alternative enterprises. Such farmers with surplus resources should be encouraged to develop store lamb finishing systems rather than establish breeding flocks. In so doing they will compliment rather than compete with existing breeding enterprises. The product is yet not in overall surplus and extra production can be absorbed within the EEC provided it comes at the right time and meets the specification of the consumer i.e. plenty of lean meat with little fat.

MONEY FROM GRASS '83

Alan Marshall

West Kirkland, Newton Stewart, Wigtownshire

A report on the final meeting of 'Money from Grass '83', London, 7 December, 1983.

The winter meeting of the British Grassland Society was the final event of the 'Money from Grass '83' campaign. It was held in the Purcell Room which is part of London's South Bank Complex. This most impressive concrete edifice with surrounding halls, walkways and open spaces proved an ideal venue for the event having a very large foyer within which delegates could circulate at ease. Fourteen boards displaying posters were on view and covered a wide range of topics all concerned with *Money from Grass*. This report does not cover all the topics or papers as they will appear more fully in other publications. However some comments are made on those subjects which were found to be more interesting.

After the introduction by Professor Charles Wright who is the BGS President and Chairman of the Campaign Committee, Dr. Rodger Wilkins, G.R.I., delivered a paper entitled *Grassland Production - Realising The Potential.*

Dr. Wilkins argued a case for late or mid-season application of nitrogen with, in some cases, a possible reduction in amounts used earlier. While this could have potential in leaching problems and might restrict spring growth when grass was at a stage most able to use N, he stressed that it could produce a more even pattern of growth thus overcoming mid-season fluctuations in grazing. The lower quality of later material was, he felt, compensated for by its greater availability and the total yield of grass overall was no different from early application of N. His message for the all grass farmer was to re-seed only when pastures become unproductive. The cost of a reseed applied to productive permanent pasture in the form of extra N over five years, would give more production than ploughing up and re-establishment. Indeed, he argued many species of grass (except hill types) produced similar results up to nitrogen levels of 250 kg/ha. Thereafter, perennial ryegrass mixtures were best. He felt that clover could offer more to beef and sheep producers. Above levels of 250-300 kg/ha, extra N was the best bet for the dairyman.

Buffer feeding of silage in mid-season featured strongly in this paper.

Dr. David Allen of the MLC spoke of *The Use of Grass in Beef Production.* This paper covered performance, management, planning, integrated cutting and grazing, early cutting for maximum regrowth and buffer grazing. This word "buffer" would appear in later papers.

Having told the dairy men in the audience to go to sleep for a minute, West of Scotland Agricultural College Principal Ian Cunningham talked on *'The Use of Grass in Sheep Production'.* The speaker stated that sheep derive 90% of their energy requirements from grass thus herbage mass is important. To attain a stocking density of 25 ewes/ha rising to double in June and July, requires in the order of 290 kg N/ha. Clover should constitute 25% of the grazing to overcome the risk element in drought on poor growth seasons. Buffer grazing is essential. The important grassland points to remember are a) early nitrogen, b) adequate N in mid-season, c) no conservation until sufficient grazing, d) flexible conservation (i.e. buffer grazing). This paper was most interesting especially when gross margins of £900 per ha were quoted and this listener most certainly stayed awake throughout!

There followed, *The Use of Grass in Milk Production* from Paul Ingram of ADAS. This paper dealt mainly with utilisation of grass and covered such topics as, fertiliser application related to stocking levels and herbage availability, (he suggested herbage heights of 10-12 cm in May and 6 cm in July/August) and the consequences of getting it wrong. Silage strategy, as it applies to individual farms was stressed and this should be looked at very closely. Silage quality ought to be considered. In a good grass area, was it correct to go for high D? The speaker suggested lower D (60+) combined with more bulk and proceeded to illustrate his point with slides. There followed a spate of questions from the audience. Many farmers felt that both quality and bulk were obtainable, the key being simply more nitrogen. The speaker agreed but were they sure that they could make enough in years such as 1983? Being consistent was part of the strategy. Buffer grazing, zero grazing and storage feeding were all examined, costed and questioned.

In the end the message was clear but EEC events over the previous weeks had superceded at least part of the case for higher stocking rates and extra cake, even on farms where this strategy already existed.

The poster presentations numbered 14 and the following are those which the writer found of specific interest.

Comparisons between wilted and unwilted grass silage for milk production using an additive (Poster 14). Messrs. M. Castle and J. Watson of the Hannah Research Institute concluded that, other than for effluent control, wilting in two contrasting weather conditions had little or no beneficial effects on overall silage quality and milk production. If, as they say, the proof of the pudding is in the eating, this winter should be the acid test on most dairy farms.

Dr. F. Gordon of N. Ireland discussed a similar theme: *The Effect of Systems of Silage Harvesting and Feeding on the Performance of Dairy Cows (Poster 12).* The experiments involved direct-cut flail versus wilted precision chop herbage both with acid additive, self- and easy-feed.

It was concluded that there was no interaction between harvesting and feeding system. Flail silage had a lower ME, lower intake but a higher milk yield. Self-feeding of both types produced slightly lower milk yields, but the improved MOC for easy-feeding was only £6 per cow. Having been to Smithfield and priced an expensive precision chop harvester and a cheaper flail type harvester with a new chopping arrangement attached, the author wonders if a change of system might offer some money from grass.

Milk: Money from Grass (Poster 7) from J. Tweddle and D. Mainland of The West of Scotland Agricultural College stressed that high levels of UME and high yields of milk meant, in most cases, effective utilisation of grass and high gross margins per hectare.

In conclusion, the 'Money from Grass '83' finale left me with the following thoughts:

1) Try to replace as much concentrate as possibly by using extra N to stimulate more grass.

2) Energy from grass is cheaper than cake.

3) Be prepared to utilise the extra grass especially in summer feeding for example, big bales of silage for buffer feeding or consider zero grazing.

4) Cheaper inputs can support lower prices. Lower end prices and quotas seem inevitable.

The SWSGS featured strongly in all aspects of the meeting, in posters, papers and delegates and the BGS Trophy was presented to Malcolm Castle, a popular choice.

The author thanks the Society for sponsoring attendance at this meeting which was a thoroughly enjoyable experience.

BGS BOOK LIST

The proceedings of the MONEY FROM GRASS '83 final meeting have been published as BGS Occasional Symposium No. 15 (98 pages). The papers have been produced in an attractive, practical and easily read form.

Copies of this book can be obtained through your Society secretary at the very modest charge of £2.00.

OTHER TITLES

Books

Grass: Its Production and Utilisation.

Sward Measurement Handbook.

Herbage Intake Handbook.

SYMPOSIUM PROCEEDINGS

No. 6	White Clover Research.
No. 7	Forage on the Arable Farm.
No. 9	Green Crop Fractionation.
No. 10	Changes in Sward Composition and Productivity.
No. 11	Forage Conservation in the 80s.
No. 12	Effective Use of Forage and Animal Resources in the Hills and Uplands.
No. 13	Plant Physiology and Herbage Production.
No. 14	Efficient Grassland Farming.
No. 15	Money from Grass
No. 16	Forage Legumes.

Details on the content and cost of these publications can be obtained from Dr. G. Tiley, Secretary, SWSGS.

VISIT TO FIFE

An afternoon visit by the CSGS to St. Fort Estate, 9 August, 1983.

An excellent summer for the holiday-makers also had allowed much field work to catch up after a disastrous spring and allowed a small gathering of CSGS enthusiasts to go on a day trip to St. Fort Estate, Fife.

Another of the summer's hot, dry, cloudless days had much of the stock sheltering under trees from the heat of the noon-day sun. Many of the crops, as well as grassland on the rocky outcrops, were suffering from the dry summer. This was obviously farming with a difference.

St. Fort and Brackmont total 400 hectares in an area of 625 mm annual rainfall. The soil is predominantly sandy loam, with many areas of shallow, gravelly soil over rocky outcrops. Approximately 60 ha of these areas are now fenced off and down to permanent pasture. A further 20 ha of Italian ryegrass fits into the mainly arable rotation, being sown in early August after vining peas. Spring barley follows the Italian break. A heavy bias towards autumn sowing makes a "treading area" an important aspect for livestock on the modern arable farm. The cropping rotation of the two units is:- St. Fort, 40 ha permanent pasture: 5 x 40 ha blocks in 5 year rotation - ware potatoes/oats, winter wheat, vining peas, one year grass/oil seed rape, spring barley/winter barley. Brackmont, 120 ha in a 6 year rotation - winter barley, winter barley, potatoes, spring barley, peas and oil seed rape.

Soft fruit and vegetables are other important cash crops, while mangels and fodder beet are grown for winter fodder. They fit into the smaller fields in the rotation.

Livestock enterprises are:-

460 ewes - of which 200 are lambed in January for spring trade
100 are North Country Cheviots (NCC) as basis of sheep stock.
160 are lambed in April for autumn/New Year markets

100 pedigree Lincoln Red sucklers entirely self supporting, calving in August.

Farm policy placed considerable emphasis on being as self supportive as possible by producing home bred replacements. The manager, David Evans, did not want the risk of buying in trouble. Several crosses of ewes have been tried. All have been based on the NCC ewes with Lincoln Longwool, Friesian and Suffolk tups all being used to produce the cross bred ewes. The (NCC x Friesland) X Suffolk ewe, using Dorset Down tup as terminal sire, seems to be the ultimate choice at St. Fort.

On the cattle side, David Evans felt he could produce beef as efficiently as any with the pure-bred Lincoln Red, and as well as be self contained he managed to sell surplus pedigree heifers and the occasional pedigree bull.

A high stocking rate of up to 25 dry ewes per ha, or a more modest 3 cows per ha was used. Considerable discussion arose on the condition of ewes and cows, the subsequent conception and lambing rates for the early lambing flock (150% was achieved), and the size and calving difficulties of the Lincoln Red calves.

All ewes have been lambed in the same shed for the last 20 years. The shed, if built again, would obviously have modifications, David Evans agreed, but it still performed its function adequately. Ewes are clipped at housing and fed on hay, mangels and an oat home-mix as lambing approaches. The January lambing ewes are weaned about 10 March with ewes going out and the lambs finished in a neighbouring shed on a bought-in cake - big enough so that the birds can't eat it.

The remaining 260 ewes also lamb indoors in April. They go out within a few days of lambing on to the Italian ryegrass swards which should have a low worm burden. The area not required for grazing is cut for hay, and this year it was hoped to try putting the aftermath into big bale silage. The dry weather and sparse crop will probably result in a second hay crop being taken.

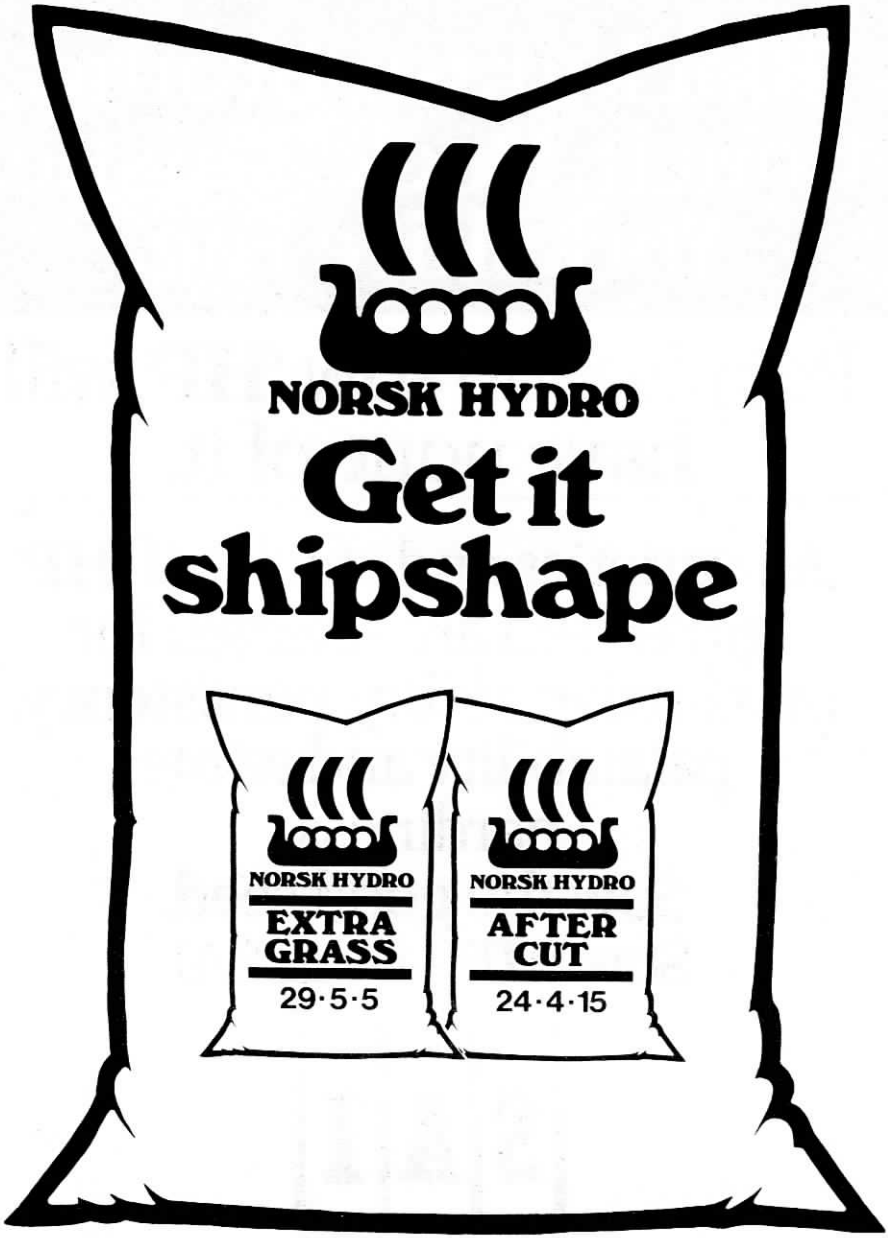
The cows are also wintered on mangels, untreated straw and 1 kg of an oat mix. Calves were allowed access to creep from housing. At weaning, the bulls which are kept entire, are finished on an oat mixture with potatoes, when available, also being fed. Their only roughage comes from the straw used in bedding. They are finished at 450 to 500 kg liveweight at 14 to 16 months of age. For their first summer the heifers must be well looked after. All are ready to calve at 24 months of age. The calving heifers with calves at foot were certainly excellent examples of well grown stock.

The Society is indebted to the manager, Mr. David Evans, for showing us that Fife is not "a bed of roses" but that sound livestock systems are still useful on his arable farm. He and his staff deserve our appreciation for giving us of their time when combining was actually stopped for our visit and only restarted on our departure. - I.W. Taylor

Blackgrass. Brome. Couch. Dock. Thistle. Yorkshire Fog.

People who sow 'HF' will have none of it.

All varieties and stocks of 'HF' grass seed are selected for productive ability, persistency, palatability and winter hardiness.
Sow the good seed.
Sow 'HF'–from SAI.


NORSK HYDRO
Get it
shipshape
NORSK HYDRO
EXTRA
GRASS
29·5·5
NORSK HYDRO
AFTER
CUT
24·4·15

SWSGS SILAGE AND HAY COMPETITION 1983-84

A meeting of the SWSGS at the Lochshore Hotel, New Cumnock, 19 January, 1984.

SILAGE COMPETITION

Judge: Fenwick Jackson, Shoreswood, Norham, Berwick on Tweed.

Judge's Remarks

The Judge opened his remarks by thanking the Society for the invitation to judge this, the 11th silage competition. 51 entries in the open section and 24 in the beef/sheep class provided the highest total number of entries in the history of the competition. Unfortunately he could only see thirteen of the highest placed silages based on their chemical analyses. He felt that a bigger proportion of the total marks (e.g. 50%) should go to the analyses, an opinion which he admitted was against the current trend in competition scoring. The quality of silage was a major basic factor when planning a ruminant feeding programme and the making of quality silage was a most difficult objective to consistently achieve.

The judge went on to comment on the entries. The use of plastic sheeting was generally very good as was the collection of effluent. In a few cases a little surface waste was detected and some concern was expressed at one or two rather wide clamp faces which were not covered after silage was removed. This was especially worrying where it took some time to extract the silage from across the entire face. A balance had to be reached since machinery for removing the silage did require adequate working space.

Some clamps lacked uniformity within the pit perhaps due to the poor silage making weather at time of first cut. Although most of the silages were wet, i.e. below 20% dry matter, the quality of fermentation seemed reasonable as judged by smell and the ammonia analysis. Ten of the 13 silages examined contained an additive, the three which had not been so treated being in the beef and sheep class.

Inspection marks awarded by the judge are given in Table 2. The overall winner and recipient of the trophy was A. Irvine, Largs, Twynholm. Runner-up was I. Houston, Torkatrine, Dalbeattie and third place went to J. & W. Carson, Conchieton, Twynholm. In the beef/sheep entry the winner was A. Glover, Hall of Barnweill, Craigie and second was J. Brander, East Glenarm, Crocketford. The best placed new entrant prize went to A. Pillow, CWS Farms Ltd., Monktonhill, Monkton and the Michael Milligan prize was awarded to I. Morton, Dapple Ltd., Polwhilly, Newton Stewart. The judge awarded the trophies and prizes and in addition, Plasti-Covers Ltd. of Irvine donated vouchers to the winners and to the best big bale silage entry, J. Ferguson, Clune Farm, Mauchline.

Dr. J.S. Chalmers: Silage Quality 1979-83

A summary of the quality of clamp silages over the last five competitions is given in Table 3. The overall quality as assessed by D value was lower in 1983 than in 3 out of the previous 4 years. Of particular note was the high proportion of silages in the "poor" class. This result reflects the low level of sunshine recorded wet spring of 1983 and the consequent reduction in grass sugars production.

Table 1. 1983/84 Silage Competition: Analyses and Marks.

Rank	Code	% DM	% CP	D Value	M.E.	Ammonia N % Total N	Marks /35
1	KS14	16.6	15.3	68.3	10.9	7.3	28.3
2	AS11	19.8	15.3	66.9	10.7	11.1	26.4
3	AS 3	30.8	14.8	62.4	10.0	5.7	25.8
4	KS16	19.3	15.9	65.5	10.5	9.9	25.65
5	KS27	17.9	17.5	66.4	10.6	12.4	25.4
6	AS 4	18.7	13.6	65.4	10.5	8.0	25.05
7	KS 8	18.5	12.6	66.1	10.6	8.4	24.95
8	WS 4	21.4	10.5	65.1	10.4	7.3	24.8
9	KS21	17.0	15.9	65.8	10.5	10.3	24.6
10	DS 6	23.5	16.2	62.9	10.1	10.9	24.18
11	KS15	17.2	13.6	66.2	10.6	10.4	23.9
=12*	KS20	20.7	13.7	65.4	10.5	12.6	23.8
=12	WS13	27.9	13.4	61.7	9.9	7.2	23.8
14	KS 9	23.6	14.5	62.7	10.0	10.0	23.6
15	KS 5	17.5	15.0	65.5	10.5	11.4	23.55
16	DS 3	16.5	17.1	64.2	10.3	11.1	23.2
17*	AS17	21.0	15.3	62.6	10.0	10.7	22.9
18	DS 7	21.5	16.3	60.2	9.6	7.2	22.88
19	WS 3	50.5	13.8	61.0	9.8	8.1	22.85
=20	WS 7	19.9	15.9	62.6	10.0	10.6	22.7
=20T	AS18	45.1	18.0	59.9	9.6	10.4	22.7
=22	AS10	30.0	14.6	61.1	9.8	9.5	22.65
=22*	KS25	33.4	17.1	59.9	9.6	9.6	22.65
24	KS 2	18.0	12.2	64.1	10.3	8.8	22.3
25	WS14	28.7	12.1	60.2	9.6	6.1	22.2
26	DS 5	17.8	14.2	64.7	10.4	12.3	22.05
27	KS 6	22.5	14.4	61.0	9.8	9.6	21.78
28	KS 3	22.9	12.2	61.5	9.8	8.9	21.63
29	WS 9	20.5	11.6	63.2	10.1	10.3	21.6
=30	AS 2	28.1	13.1	61.9	9.9	11.8	21.55
=30*	AS 6	29.4	10.7	60.2	9.6	5.7	21.55
32	AS 1	17.4	15.8	63.1	10.1	11.5	21.45
33*	DS 1	18.7	13.4	64.7	10.3	13.9	21.3
34*	KS11	21.6	15.5	60.7	9.7	10.7	21.25
=35T	AS 8	42.6	19.0	59.0	9.4	12.3	20.85
=35B	AS12	25.9	11.7	63.4	10.1	14.8	20.85
37	DS 4	16.7	13.8	63.3	10.1	10.9	20.75
38*	AS15	21.0	11.0	61.9	9.9	9.6	20.6
=39	KS 1	17.1	15.7	61.7	9.9	10.2	20.5
=39	KS22	19.2	14.0	62.5	10.0	12.2	20.5
=39B	WS 8	45.8	13.4	59.3	9.5	9.0	20.5
=42*	KS12	25.8	14.5	57.3	9.2	6.3	20.4
=42	KS13	18.6	15.5	61.5	9.8	11.3	20.4
44*	KS24	28.1	13.5	60.5	9.7	12.0	20.25
45	AS13	27.9	15.6	58.0	9.3	10.3	19.65
46	WS 1	24.5	12.4	60.0	9.6	11.1	19.53
=47	KS26	19.1	13.8	60.7	9.7	10.3	19.5
=47*	DS 2	30.7	14.6	61.0	9.8	15.6	19.5
49	KS 4	17.5	15.7	61.4	9.8	12.3	19.35
50	WS10	28.7	11.1	60.9	9.7	12.6	19.15
51	WS11	26.7	8.8	60.1	9.6	9.0	19.0
52*	WS15	29.1	13.7	60.2	9.6	14.8	18.65
53*	DS11	19.8	13.1	60.8	9.7	12.3	18.6

Rank	Code	% DM	% CP	D Value	M.E.	Ammonia N % Total N	Marks /35
54	KS18	18.0	14.6	61.7	9.9	14.1	18.45
=55	WS 6	25.1	12.5	58.3	9.3	11.1	18.0
=55*	DS10	38.9	14.5	52.6	8.4	8.5	18.0
57	AS 9	23.5	16.8	60.8	9.7	19.8	17.93
58*	KS 7	31.2	13.7	55.2	8.8	8.1	17.8
59*	WS16	31.2	17.0	55.0	8.8	12.3	17.35
60T	WS 2	27.8	14.5	58.6	9.4	15.9	16.9
61	AS 7	22.0	16.2	57.1	9.1	13.3	16.8
62*	AS19	30.2	10.1	57.0	9.1	10.2	15.95
63	WS12	26.2	12.6	58.4	9.3	17.1	15.45
64*	AS14	31.1	11.0	55.7	8.9	12.2	14.4
65*	AS20	25.4	9.2	55.7	8.9	11.0	14.1
66	AS 5	34.7	8.4	54.8	8.8	10.6	13.9
67*	KS10	18.8	12.3	59.8	9.6	18.1	13.7
68*	KS19	17.7	16.2	60.4	9.7	23.1	13.3
69*	DS 9	24.3	12.8	56.5	9.0	16.9	13.28
70*B	KS17	40.8	9.4	54.2	8.7	12.9	13.25
71*	AS16	16.6	14.5	59.0	9.4	19.1	12.7
72	WS 5	20.3	8.7	56.9	9.1	13.9	11.95
73	KS28	17.9	14.9	57.9	9.3	20.0	11.8
74*	DS 8	24.8	8.6	58.7	9.4	28.4	7.75
75	KS23	19.1	17.1	53.1	8.5	34.5	6.6

Table 2. Short list for Judge's visit (in order of analyses).

Awards	Farm	Analyses (35)	Marks Inspection (65)	Total
1st and Trophy	A C Irving, Largs, Twynholm.	28.3	54.0	82.3
Best New Entrant	C W S Ltd Farms, Monktonhill, Prestwick.	26.4	44.0	70.4
	J D Gibson, Sawerston, Mauchline.	25.8	43.0	68.8
3rd	J & W Carson, Conchieton, Twynholm.	25.65	51.5	77.15
	T McMillan, Drumwall, Gatehouse of Fleet.	25.4	44.5	69.9
	Lady K P Moore, Newlands, Monkton, Prestwick.	25.5	50.5	76.0
2nd	I D Houston, Torkatrine, Dalbeattie.	24.95	54.5	79.45
Milligan Prize	Dapple Ltd, Polwhilly Farm, Newton Stewart.	24.8	49.5	74.30
	James Biggar, Grange, Castle Douglas.	23.8	n.a.	-
	R Dalrymple, Crailoch, Ballantrae.	22.9	33.5	56.4
	G Dunlop, Warnockland, Fenwick.	22.7	35.5	58.2
2nd Beef/Sheep	J L Brander & Co, East Glenarm, Crocketford.	22.65	39.0	61.65
1st Beef/Sheep	A H Glover & Sons, Hall of Barnweill, Craigie.	21.55	52.0	73.55

n.a. = silage not available for inspection

The mean dry matter content of the silages in 1983 was similar to that in previous years but a closer inspection of the data revealed that this was made up of many wet and many dry silages with fewer near the average. This suggests that many experienced difficulty in wilting silages in the difficult conditions.

Despite this, the mean ammonia nitrogen content of 12% was as good as in previous years, indicating that additives were probably being used to good effect. Only 4 silages had ammonia values over 20% in 1983.

Once again, the number of entries to the competition increased which is very encouraging in view of the adverse conditions at silage making. The silage competition not only generates a lot of interest among competitors but also provides valuable clues on how to make good quality silage from year to year.

Table 3. Silage quality 1979-83.

		% of total in each group				
Quality	D-Value	1979	1980	1981	1982	1983
Very good	70	3	0	0	3	0
Good	65-70	30	31	7	39	16
Medium	57-64	64	67	88	56	71
Poor	57	3	2	5	2	13
Mean Dry Matter %		22	22	21	23	23
Mean Ammonia N (% of total N)		15	13	13	12	12
No. of entries		37	53	63	66	69

Dr. R.D. Harkess: Additive Use, 1983

Following a request for information regarding the use of silage additives on competition silages, a question was added to the entry form to enable the necessary information to be gathered. Table 4 summarises the type of additive and number of silages treated with each. Of the dairy silages 90% had received an additive but only 28% of the beef/sheep entry had been so treated.

The most commonly used additive, Farmline, is an acid/formalin mixture as is Silaform, Silage F 100, Sylade 2 and Farmers Progard and 54% of the additives used were of this type. 12 silages, 23% of the entries, were based on straight acids, i.e. Add F. Inoculants were used on 8 silages and molasses on 5 silages.

All 8 of the short listed open class entries and 2 of the five beef/sheep entries contained additives. Because of the huge variation in the types of crops, ensiling techniques, feeding objectives and between farm variability, it is not meaningful to make a direct comparison of the individual additives used.

Table 4. Additive use, 1983.

Additive	Open class	Beef/sheep entries
No additive	5	18
Add F	11	1
Farmers Proguard	2	-
Farmline	15	-
HM Inoculant	7	-
Molasses	3	2
Silaform	1	-
Silage F 100	-	2
Silo Action/Molasses	-	1
Sylade 2	6	1

HAY COMPETITION

Nine hays were forwarded for this year's competition and the quality was the best over the past three years. The results are summarised in Table 5 and the silage judge presented the awards as follows:-

Winner and recipient of the BP Nutrition Trophy -
I.C. Gilmour & Sons, Humeston, Maybole.

Runner up - D.R. Kennedy, The Knowe, Kirkconnel.

Table 5. 1983/84 Hay Competition: Analyses and Marks.

		ANALYSES			MARKS		
Rank	Code	% DM	% CP	D Value	Analyses Marks/90	Visual Marks/10	Total Marks/100
1 CB	AH 1	85.5	15.9	65.6	78.75	6	84.75
2	DH 1	84.9	6.4	62.2	52.65	7	59.65
3	KH 2	85.6	9.5	58.9	52.60	7	59.60
4	AH 2	85.8	5.2	58.6	45.10	7	52.10
5	AH 3	84.1	12.2	52.0	43.45	8	51.45
6	KH 4	84.3	6.2	57.9	43.55	7	50.35
7	DH 2	84.4	9.3	53.0	39.80	7	46.80
8	KH 1	83.6	10.2	51.0	37.20	6	43.20
9 CB	KH 3	84.2	7.8	51.8	34.30	8	42.30

CB = cold blown

INNOVATIONS COMPETITION 1983

South West Scotland Grassland Society

Winner 1983 A.D. Marshall, West Kirkland, Wigtown.

'Mole Hill Leveller Attachment'. The unit is constructed using 225 mm x 75 mm channel iron suspended below the front frame of a suitable roller by using four heavy hangers pivoting on 25 mm steel pins. The unit constructed on this farm is fitted to a Towse 3 m ballasted landroller. The channel is held vertical in

a forward position by two heavy coil springs pulling against bump stops welded to the roller frame.

The roller is attached to the tractor using a Ferguson type "stretcher bar" drawbar on hydraulic lift arms. On approaching mole hills, the hydraulic arms are lowered until the channel is on or just clear of the ground. When the channel contacts a mole hill, pressure is exerted against the springs, the channel tilts rearwards giving a slight dragging action and the soil is deposited inside the lip of the channel. Springs then pull the channel forward against the bump stops and the soil is thrown forward achieving a spreading action. Should the channel contact an immovable object for example a rock, it continues rearward and upward until it contacts the roller barrel. It is then supported along its entire length thus preventing damage both to itself and the roller barrel. Raising the hydraulics is normally sufficient to lift the channel clear of any obstruction and let the rolling proceed.

The attachment has proved reliable over three years work. It has eliminated the need for spreading with a spade and chain harrowing. The subsequent effect on protecting mower and forager blades and in reducing soil contamination in the silage grass has been most noticeable. Other uses for the leveller includes rutted areas around gates and in the spreading of dung pats on soiled pasture prior to closing up for cutting. On this farm the conservation area is mainly heavy clay ground and is subsoiled annually, usually before or after the last cut of grass. Any torn sods left after subsoiling can be scrubbed away by the attachment.

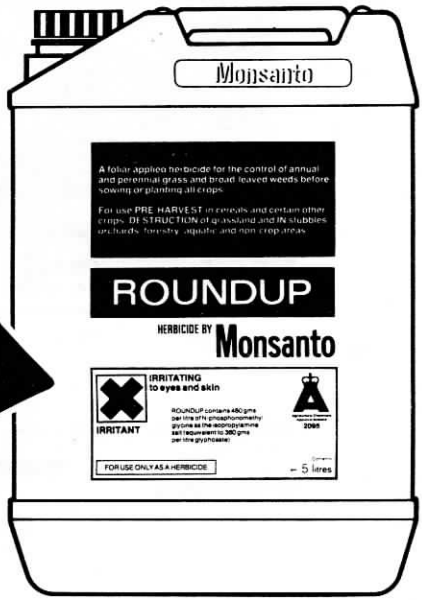
BRITISH GRASSLAND SOCIETY

SILAGE COMPETITIONS 1983/84

This years winner of the Scottish Region Trophy was SWSGS member Alex Irving of Largs Farm, Twynholm. Alex then went forward to the National finals and whilst not lifting either of the awards was highly placed amongst the finalists. Well done Largs.

Coming out of grass...

Deep down it'll only come clean with Roundup.



When it's time to come out of grass, spray Roundup® herbicide before you plough.

Roundup kills grass and the weeds it contains deep down, unlike contact herbicides which can only burn off the sward.

Tough grass and broad-leaved weeds are killed right down to the root tips, so they can't grow back.

Give your new cereals, fodder crops or reseeded grass a clean start and you'll be well on the way to higher yields.

For clean crops after grass

ROUNDUP

HERBICIDE BY **Monsanto**

Black Polyethylene Agricultural Sheet for Lining and Sealing Silage Clamps

NEW SIZE	6m x 25m	(20ft x 81ft)	Black only
Now in Stock	6m x 42m	(20ft x 136ft)	Black only
500g (125mu)	8m x 25m	(26ft x 81ft)	Black only
	8m x 50m	(26ft x 162ft)	Black only
	11m x 42m	(36ft x 136ft)	Black only
	12.8m x 36m	(42ft x 118ft)	Black only
1000g (250mu)	8m x 28m	(26ft x 91ft)	Black only

ROUND BALE SILAGE BAGS

500 gauge black — **gussetted** — **Best prices and delivery**

OTHER USEFUL SIZES

500g (125mu)	2m x 100m	(6ft 6in x 324ft)	Clear only
	4m x 50m	(13ft x 162ft)	Black/Clear
1000g (250mu)	2m x 50m	(6ft 6in x 162ft)	Clear only
	4m x 25m	(13ft x 81ft)	Black/Clear

Also in Stock: I.C.I. "POLITARP" SHEETING (eyeletted to your own requirements), SEALING TAPE/JOINTING TAPE

Terms: Net cash with order or C.O.D. by our own transport where possible

PLASTI-COVERS LIMITED

16 Kyle Road, Burgh Industrial Estate, Irvine, Ayrshire Telephone: Irvine 78696/7

MY FARM

Fenwick Jackson

Shoreswood, Berwick on Tweed

A meeting of the SWSGS at the Lochside Hotel, New Cumnock, 19 January, 1984.

Shoreswood is about 5 miles south of Berwick on Tweed and about 4 miles from the sea at an altitude of 90-460 m. It is an exposed farm with a lightish soil and as a result of low rainfall, circa 630 mm per annum, is prone to drought. It is an arable farm with grass as the main break crop in the rotation until 4 years ago when oilseed rape and peas were introduced. Cattle have been used to build up the family business by providing manure for the light land and by starting sons on their own units. 35 year ago ICI costed figures showed that there was no money in beef and advised a switch to milk production but the landlord said no! In these early days the sucklers were kept by me instead of the sucklers keeping me and the grain and sheep enterprises carried the business. In the 1950's it took 3 years to get an animal to the butcher which was far too long. With the introduction of the barley beef system in the 1960's, animals could be ready in 15-18 months so if the calf price was reasonable and the silage was good, it was possible to start making some money from beef.

Today Shoreswood has 14 hectares of combining peas, 40 hectares grass and 220 hectares cereals. The grassland is mainly 2 year mixtures undersown in spring barley and based on a mixture of Italian and early perennial ryegrass and from which 3 silage cuts are taken. Friesian bullocks and bulls are fattened. In the early years of bull beef, difficulties were encountered in selling the animals but recently there has been a revived interest. Apart from high liveweight gains there is also a price premium on their carcases.

Strong stores are purchased in autumn to finish on silage but Holstein blood is making the 18 month beef business 'dicy'. Whilst they do grow well, it is difficult to get them graded. To avoid this problem stores are now purchased when their genetic make-up is more readily identifiable and a substantial deduction in price is made if any Holstein blood is present. Young calves are purchased in July/August to make up batches of 100. These are housed in individual pens and fed twice a day on milk substitute till 5 weeks when they go into a straw court and are given concentrates until 12 weeks old. At this time they should be eating around 3.5 kg concentrates per day and silage is introduced. By 16 months the silage intake is sufficient to enable concentrates to be reduced to around 1 kg per head per day. Hereford cross calves have been compared with pure Friesian calves but the only advantage is that it is possible to sell the Hereford crosses any time but Friesians must go only to the butcher.

Winter housing comprises some slatted houses and some straw yards. The farm can house 1,000 head of cattle and a forage wagon feeder is used. The stock are housed from the third week in October and before they start losing weight. Friesian cattle require good grass when they are young to keep them growing at a satisfactory rate and around 1.5 kg barley is fed. This is particularly important when feeding bulls, they must not be allowed to get too lean. Fishmeal is added at 0.25 kg per head per day to improve the liveweight gain on the fattening ration.

The key to success of the winter feeding is good quality silage. Shoreswood target is 30% dry matter and a D value of 67/68. To make this, wilting is 24-48 hours but for a second cut 12-24 hours is usually adequate. A mower conditioner is used, two rows are put into one and picked up with a precision chopper. If conditions are wet, which is not too frequent in the drier east, a silage additive is used. The system cannot wait for good weather and harvesting must push on otherwise D values will fall. Cutting normally starts on 27th May with a 4-man silage team. 160 acres are cut 3 times. The clamp holds 3,000 tonnes of silage filled to about 6 metres and settling to about 5 metres in depth. An industrial loader is used to fill the silo. Fertiliser goes onto the silage ground virtually behind the forage harvester in order that regrowth is not delayed.

A very important piece of equipment on the farm is the weighbridge and it's associated stock handling facilities. Periodic weighing will show up any problems with growth rates and so enable ration adjustment to be made.

The quality of silage for the fattening beef animals over the past five years is shown in Table 1.

Table 1. Silage quality at Shoreswood 1979-1983.

	1979	1980	1981	1982	1983
Dry matter (%)	28.6	28.7	30.8	32.9	26.6
Crude protein (%)	13.5	11.4	16.6	14.7	11.1
D value	65.5	67	67	68	62
ME	10.6	10.7	10.7	10.8	9.8
pH	4.0	3.9	3.6	4.3	3.7

Most silage is made at the first cut because of poorer yields from succeeding crops in the dry summer conditions at Shoreswood. 1983 was the worst silage making year ever experienced and the 62 D silage is currently requiring twice the usual rate of barley feeding i.e. 4 kg per head per day compared to 2 kg, in order to hold liveweight gains at a satisfactory level. A preferred pH of silage is around 4-4.3 as there is the possibility of reduced intake especially if below pH 3.9.

The factors contributing to success at Shoreswood may be summarised as (1) good liveweight gains (1 kg per day at grass and 1.2 kg per day in winter), (2) high stocking rates (4-5.5 livestock units per hectare), (3) high quality silage (around 67 D), (4) careful and attentive stockmanship (good stock handling facilities), (5) accurate record keeping (nowadays very necessary). Attention to these details over the last few years has given gross margins of around £200-300 per head and a gross margin per hectare of £1100-1300.

DISCUSSION

The discussion centred around the handling and marketing of the stock. Bulls were sent directly to the meat wholesaler. Each lot is best drawn from one pen but if from two pens then they must be kept separate in the cattle float. They should be killed within 12-14 hours of moving. Steers go through the auction ring. Bull beef is receiving a premium because it is darker, has less fat and the carcase has a higher proportion of saleable meat.

If no subsidy is payable then it is best to sell on a dead weight basis but if grant is to be paid then it is better that the beast goes through the auction ring.

Holstein may make more money if they can be assured of grading. A withdrawal of the premium would help the Holstein but in the meantime one quarter Holstein blood is more than enough! Holstein will take longer to reach marketing grade perhaps 2-3 months longer than the 15-16 month of the Friesian. If they have to be kept for 22 months then they are likely to be losing money.

DAY VISIT TO KIRKCUDBRIGHTSHIRE

A day outing of the SWSGS to Blackerne and Cowar, 16 February, 1984.

Blackerne (C. Irving). This farm extends to 129 ha and is run in conjunction with a unit of 97 hectares some 3 miles distant. The dairy herd comprises 185 cows with a lactation yield of 5,600 litres. The cows are easy-fed and milked through a 10:20 parlour. Four hundred beef cattle of all ages are carried, mainly home-bred Charolais, Simmental and Hereford crosses from the dairy herd plus 60 bought in each spring. In addition, 360 Greyface ewes are crossed with the Suffolk ram. 240 of the ewes are in-wintered.

Cropping on the farm consists of 113 ha cut once or twice for silage, 8 ha arable silage, 75 ha permanent pasture and 22 ha of rough grazing.

Cowar (J. Cunningham). Mr. Ross Brown, the manager welcomed members to Cowar. Intensive sheep and barley growing are the main enterprises and sheep here have been in-wintered since the 1960's. The cropping comprises 23 ha spring barley, 6 ha roots, 6 ha hay, 5 ha silage and 84 ha permanent pasture. The stock consists of 770 Greyface ewes which are mainly crossed with the Suffolk but Dorset and Texel tups are also used. 140 replacement ewe hoggs are put to the South Down tup. On order to provide a clean grazing break for the sheep agisted cattle (let summer grazings) are run on 8 ha of pasture each year. Ewes are housed in mid-late January and are not clipped. Lambing starts around the second week in March. This winter, sheep are being fed on silage for the first time.

Members wish to thank both farms for their kind welcome and for providing the Society with an interesting visit to the Stewartry of Kirkcudbright.

BRITISH GRASSLAND SOCIETY - SUMMER MEETING

DEVON AND CORNWALL 1983

J.M. Milne

Solsgirth Estate, Dollar

After one of the wettest and coldest springs on record, followed by excessive heat and drought, we headed south to Devon and Cornwall to see if our colleagues had fared any better in the South West. Amid the sweltering heat of a 10 hour car journey, our first impression was that all the countryside had fared something akin to ourselves.

However, the beautiful setting of Seale-Hayne and an excellent welcome made the whole tour a prospect to look forward to and it lived up to its title of 'Contrasts in the South West', as not only were we going to see different farming situations but with the arid conditions, we were going to see a marked contrast in how different types of land and farming systems reacted to the extreme wet and dry conditions.

Tuesday we set off for Bucklawren Farm, Widegates, Looe, the property of Mr. D.J. Buckett, where our first impression was of very steep ground, which one would have thought almost impossible to cultivate, but this land sustained a high yielding dairy herd on these exceptionally steep hillsides. The interesting feature was the use of fodder beet crops with high yields, to combat the low rainfall on farm. While it was a high cost crop to grow at £465/ha it suited the system of farming very well.

The next visit was in direct contrast as we went to Mr. W.J.A. Hocking's farm, Upton Cross, Liskeard, on the edge of Bodmin moor. Apart from being an excellent example of good farming practice, the feature to note was the trials for dock control which had taken place over a 3 year period. This trial showed conclusively that follow-up spraying is imperative to give real control of docks, regardless of which chemical is used in the first stages.

From a dairy unit we then moved onto the sheep enterprise of Mr. P. Hocken, Newton Farm, Upton Cross, Liskeard. For anyone with interest in sheep then this was the farm to see - 40 ha with 265 breeding ewes and all fodder grown on the farm. With a stocking rate of 20 ewes/ha when grazing, strict control of worms and coccidiosis is necessary. This was achieved by dosing the lambs 8 times throughout the year. The ewes are housed during the winter and this flock, being recorded by the MLC has shown the highest lambing percentage for the last 3 years, with the current season being 183%.

Wednesday, with the prospect of another day with temperatures in the 90's F, started high up on Bodmin Moor. Here on the 250 ha belonging to Mr. R.L. Robson, Cannaframe, Altarnun, Launceston, we saw a very high stocking rate of suckler cows on a hill farm. These cows are all Friesian cross cows producing cross Charolais calves, being inwintered from November to April. On this high land farm, the cows are achieving 90% calving. Pastures have been laid down with permanent type mixtures, with the hope that little or no reseeding should require to take place.

The next farm to be visited continued in the 'contrast' mould when we saw the dairy enterprise of the Derryman family, Pendewey Farm, Bodmin. Here there were 60 ha and a herd size of 112, with a herd performance of 7729 litres per cow (even with the terrible spring). It was easy to see why they won the 1982 Dairy Farmer of the Year award.

The final farm visit of the day was to Mr. J. Blewett's Farm at St. Dennis. Here we saw a mixture of 160 cow dairy herd, 400 beef and dairy followers and 450 flock of sheep all carried on 300 ha including a proportion of moorland. What was different about this enterprise was the significant increase in the size of fields brought about by removal of walls and hedges over a number of years.

The final trip of the day was a visit to the china clay quarries. First impression is of a 25 square mile devastated wilderness. However, on closer scrutiny we were shown the efforts to reshape spoil heaps and also reseed them using an emulsion of seed, fertiliser and compost sprayed on with powerful hose jets. The resulting pasture, grazed by Soay sheep, required a high 'input' of fertiliser to maintain the sward, mainly because the spoil heaps basically consist of inert material, with no residual manurial value at all.

Thursday saw us once again in blazing sunshine, visiting the farm of Mr. R.R.B. Harvey, Ermington, Ivybridge, Devon, where on 42 ha, 170 South Devon cattle, the breed native to this part of the country, are carried. The pasture was mostly of a permanent type of mixture and the cattle were set stocked. The cattle were most impressive and ably demonstrated the breeds ability to produce large framed cattle which exhibit high growth rates on a predominantly grass diet.

From South Devon cattle we then moved on to view Friesian cows again on the 190 ha farm of the partnership of Messrs. R.H.E. & E.J. Sampson, Lilwell, Loddiswell, Kingsbridge, Devon. Grassland management is based on high fertiliser inputs and revolves round a very efficient silage system for two dairy herds, totalling 226 cows. The cows are grazed on a paddock system and the whole outfit looked in super condition considering the weather conditions which had been experienced. However, the highlight of the visit was a look at Mrs. Sampson's vineyard. To the layman this was most impressive and the tasting of the finished product made it an interesting enterprise indeed.

Unfortunately due to further commitments, I was unable to attend the Friday session at North Wyke but I am assured that it was a visit of the same high calibre as all those of the previous days.

In my brief report, I have made no mention of the organisation and friendliness of the Grassland Societies concerned including the British Grassland Society. But I have only one word for the organisation, superb! At every farm, as if by magic, iced water or cold beer appeared, and much appreciated it was too in temperatures the highest ever recorded in Cornwall. It must be added that the friendship shown by all who were involved, deserves a very sincere thanks for enabling the whole tour to be so memorable and constructive.

SHEEP PRODUCTION

Mary Lloyd

The East of Scotland College of Agriculture

A meeting of the CSGS held in the Stuart Hotel, East Kilbride, 14 March, 1984.

Grazing systems for sheep are as numerous as the farmers trying to operate them, and no one system could be advocated to cover all farms and system of managing sheep. This was the broad view taken by the speaker and she suggested that it was important to evolve a system which suited the particular farm. However some systems were not to be advocated, such as forward creep grazing which was a sure fire way to produce store lambs and not fat lambs.

In the lowground situation the main factors affecting flock productivity were:-

1. Numbers of lambs born and reared.
2. Weight of lambs produced.
3. Stocking rate.
4. Seasonality of guide price.

In the hill situation the stocking rate was governed by the winter stock carrying capacity.

As overdrafts have grown in size, the greater has been the pressure to intensify but there can be problems associated with this. At a stocking rate of 15 ewes and lambs per hectare it is possible to produce 70% fat lambs, but if stocking rates are increased to 18 ewes and lambs per hectare fat lamb production can fall to 30%. Therefore the aim may not be to produce more lambs which could be too small, but to produce bigger lambs which can be sold fat rather than as stores.

On the hill farm the winter stock carrying capacity of the ground is the determining factor in stocking rate. To some extent this can be overcome by in-wintering but this can add £7-£8 per ewe to costs. Currently the Scottish hill farming sector is losing £3.9 million producing store rather than fat lambs. The aim must therefore be to go for finished lambs and that involves adopting an all year round management system.

Over the next five years the level of subsidy is going to be important in maintaining margins. In 1971 the farmer was at the top of the pyramid when there were only 12.1 million ewes in the country and consumption was running at 10.5 kg per capita per annum. In 1984 it is a consumers market with ewe numbers up to 15 million and consumption down to 7.5 kg per capita per annum. As yet sheep production is not in surplus, but with a 25% increase in ewe numbers and a 30% reduction in consumption, increasing production could soon become a dirty word. It is reckoned that by 1990 the UK will be self-sufficient in sheep meat production and in the last 10 years the consumer has been telling us that they don't like what we produce, as demonstrated by the drop in consumption.

On a gross margin basis sheep can compete with cereals at a stocking rate of 12-15 ewes per hectare. However, much of the price increase is to bring us into line with the French and Italians and recent gross margin increases largely have been associated with increases in price. Upland ewe flocks averaged 158% lambing 10 years ago and today this figure is unchanged. Stocking rates have been increased but individual ewe performance remains the same.

Changes are currently being considered in the sheep meat support arrangements and these can be summarised as:-

1. Maximum Variable Premium payment.
2. No payment for fat class 4 lambs.
3. More socio-economic support for the hill sector.
4. Changes in seasonality of price structure.

If these changes come about store lambs could be more vulnerable. In Scotland it has paid to sell light, leaner lambs up to mid August because it fitted the pattern of grass growth.

On the marketing side, an increasing amount of meat is being sold through super-markets. Demand is now for the lean convenience food and there is a demand for quality lamb on a year round basis. Farmers must therefore ask themselves - Can we provide what the market wants?

To do this there msut be control over systems to produce fat lambs by design and not by accident. In the near future prices to farmers will see only moderate increases.

Grazing systems

The objectives of a grazing system can be summarised as:-

a) an ECONOMIC lambing percentage.
b) production of QUALITY LAMB.
c) PREDICTABLE growth rates.

This means planned production and marketing and the means to respond to changing demands. In any grazing system there is no point in growing grass if it can't be utilised.

Lamb growth rates are dependent on the milk yield of the ewe and the pattern of milk production. This in turn is determined by herbage availability and since 90% of the feed comes from grass, the quality of that grass is extremely important. Other factors which also affect lamb growth rates are intestinal worms, sire breed and mineral nutrition. Perennial ryegrass is not particularly suited to sheep grazing since it tends to go to head and lacks minerals and therefore falls short of the ideal. Stocking rate is important and must be adjusted according to time of year (Table 1).

Table 1. Potential stocking rates for Mule ewes.

	Time of Year			
Lambing to	July	Aug	Sept	Oct/Nov
Mule ewes (76 kg) and lambs per ha	15.5	31	12	8.5
Area required for 500 ewes (ha)	32.3	16.1	41.7	58.8

Note: This is for an average site receiving 210 kg N/ha.

The Decisions

The system selected must suit the farm and give optimum stocking rates. Management decisions have to be taken in relation to when to supplement ewes at grass,

time and rates of applications of fertilisers, grazing priorities, method of worm control and conservation system.

In order to gain some control over the system it is essential to have some measurement of the pasture and a measurement of the feed requirements of the ewes. There is a need for nitrogen to be applied to grass in spring and autumn when grass growth is needed. In mid-season, growth is generally adequate and anything surplus to requirements can be conserved. One cut silage systems are best, rather than two cuts as aftermaths are needed sooner than a two cut system will allow.

Table 2. Measurement of pasture.

Time	Sward height	Action
Mating and early pregnancy	7.5 cm	7.5 ewes/ha
	9.0 cm	10 ewes/ha
Spring	3.0 cm	Start to reduce feed
	5.0 cm	Stop feeding
Summer	5-7 cm	If less then store lambs will be produced.
	7 cm	Increase stocking rate and conserve surplus.

Systems

(1) Early lambing - Generally low lambing percentage associated with high feeding rates, but high lamb prices.
High stock rates essential; a clean grazing system is necessary as an alternative to early weaning.

(2) Grass finished lambs - Associated with high lambing percentage; moderate feed costs; moderate stocking rates (12-15 ewes/ha). Good grassland management is essential and lambs must be selected for slaughter as soon as they are fit. Effective worm control is necessary.

(3) Forage finished lambs - Moderate lambing percentage with moderate feed costs. No clean grass; poor lamb prices and low overall stocking rates.

(4) Hoggets - Moderate lambing percentages with low feed costs; no clean grass; high stocking rates at grass; high lamb prices.
It is essential to maintain high stocking rates at grass and to achieve high carcase weights.

In summary the grazing system selected must suit the farm, and must give control over the production system. Stocking rates must be adjusted in order to ensure correct quantities of grass available for ewes and lambs, and if necessary part of the grassland area should be used for conservation. The aim at the end of the day is to produce lambs profitably by keeping costs down. Grass is still one of the cheapest feeds available so its use must be maximised.

Discussion

The speaker was asked about seeds mixtures for grazing sheep and in reply she said she preferred a broad based mixture such as Cockle park. Perennial ryegrass swards alone were definitely not advised. Asked about clover in seeds mixtures the speaker felt that it was too unreliable. Rotational grazing tended to enhance the clover content of pastures as the season progressed but clover content of a sward could be 6 - 14% which was too unreliable. There is a job for the plant breeders to produce a more reliable legume.

Asked about controlling stocking rates to match grass growth, the speaker felt that stocking rates had to vary according to the season. Conservation could be used as a buffer and in this respect silage was very useful. Early spring nitrogen was essential so that stocking rates could be maintained in early spring, and if winter foggage was in short supply, straw could be used in mid-pregnancy. However, in summer the only flexibility was the balance between grazing and conservation.

The question of feeding ewes at tupping was also raised and when it would be necessary to consider doing this. The speaker felt that the plan should always be to avoid feeding at this time, but if it was necessary then 0.5 kg per day of a high quality concentrate should be fed. A urea/molasses mix could also be used along with good quality hay. Care had to be taken to feed enough supplementary feed otherwise it would just substitute for grass. On a question of the level of protein required at tupping, a feed with a protein content approaching that of grass was required.

Following from this the question of when to start feeding in spring was raised. Ewes should be condition scored in January and lean ewes selected for preferential treatment. As a guide a daily allowance of 1 kg good quality hay and 0.3 kg barley could be fed, but if hay was of poor quality urea supplement should also be fed. For fit ewes, good quality silage of 25% dry matter and 9.5 MJ/kg DM could be fed at 4-5 kg per day.

Asked about prolificacy in ewes the speaker stated that a 6 crop ewe was the most prolific but by 8 crop, prolificacy crashes. However ewes should not be culled on teeth alone at 4 crop but should be hand fed as this extra cost was paid for by the higher number of lambs produced. I.R. Fraser.

FORAGE LEGUMES IN U.K. AGRICULTURE

Dr. M.E. Castle

Tobergill, By Ayr

A report of the BGS Legumes Symposium at the Berkshire College, February, 1984.

Have white clover and other forage legumes any useful part to play in UK agriculture in the next 10 years? This was the vital question which was asked at a recent meeting of the British Grassland Society, and the answers were provided by leading grassland farmers, members of the seed trade, plant breeders, advisers and research workers. It was quite clear that the cost of fertiliser nitrogen (N) was not at present a major problem, and that economies with fertiliser were not the main reason for the increasing interest in legumes. Without any doubt, the interest in legumes was because of their high nutritive value when compared with grass.

White Clover

The high feeding value of white clover was reported by David Thomson from the GRI who showed that, with dairy cows an extra 900 litres milk per lactation was obtained from white clover silage compared with grass silage in a long term feeding experiment. The milk on the clover treatment also had a high content of protein but a lower content of fat. The milk produced from the clover silage was more suitable for cheese making than the milk from the grass silage. In general, sheep and cattle have a higher intake of forage when offered clover than grass and they produce a higher liveweight gain. Perennial ryegrass, which is the principal grass species sown in the UK gives a lower voluntary intake and a lower supply of absorbed protein than white clover.

However, the yield of white clover per hectare must be considered and although J. Frame and P. Newbould from Scotland showed that this crop can give a theoretical potential yield of 15 tonnes dry matter per hectare when sown alone or 20 tonnes in a grass/clover mixture, such outputs are extremely rare in practice. Lower yields on the farm arise from poor clover establishment, competition from grass and weeds, slug damage and various diseases. White clover is at a disadvantage in mixtures with grass due to shading, especially when fertiliser N is used, and it also suffers from low soil temperatures in the UK which are not optimal for clover growth.

The need for white clover in grass swards is greatest in systems for beef and sheep production and not for milk. Yet in Brittany, many dairy farmers are changing over to ryegrass and white clover leys and achieving good results. One such farm with over two cows per hectare was producing 6,000 litres of milk per cow with only one tonne of concentrate. Care is necessary in interpreting this data, however, because these cows were also receiving a maize supplement throughout the summer. The problems in that area of France are how quickly a good clover sward can be established and how to keep it free from docks. There is also doubt about the best grazing interval for animal health, high milk yields and persistency of the clover.

It was concluded that at present we should aim for a two sward system in order to exploit white clover: good grass leys plus fertiliser N and really good white clover leys with no fertiliser N. These clover swards should contain 30-50%

clover in summer and would comprise only a small part of the total farm area. After learning how to establish and manage these grass/clover leys on a small scale it should then be possible to increase the area as the need arose and when skill was acquired. At present, the use of fertiliser N is generally worthwhile but there is also a limited place for first class grass/clover leys which are free from weeds and are well managed. Such leys will have particular value for beef and sheep producers, and on dairy farms where less than 200 kg of fertiliser N per hectare is applied. Indeed there is still a lot of grassland which receives nil fertiliser N and the production from this grassland would certainly benefit from the presence of clover.

Red Clover

Red clover is a crop for conservation and not for grazing, and yields of about 13 tonnes of dry matter per hectare in the first harvest year were quoted by D. Aldrich from trials at the NIAB. This yield compares with outputs of 14-16 tonnes dry matter per hectare from perennial ryegrass receiving 300 kg of fertiliser N per hectare. Red clover is damaged by wheel tracking and unfortunately can be affected by a number of serious pests and diseases, so that it generally has poor persistence.

Suitable varieties such as Merviot, Redhead, Britta and Norseman are now available and can be established alone with seed rates of 15 kg per hectare. If mixed with grass, an intermediate perennial ryegrass was suggested at a seed rate of 4 kg per hectare plus 12 kg of red clover per hectare.

As with all legumes, a fine, firm and free-draining seed bed is required and the pH should not be below 5.8. Two cuts, mid June and late July, followed by a grazing with sheep in November and December were recommended. Red clover is an ideal crop for silage but requires wilting, short chopping and in particular, the use of an effective additive such as formic acid at rates of 4-5 litres per tonne. Cows offered red clover silage have exceeded 5,500 litres milk per lactation with the use of about 0.9 tonne of concentrates. It is thus a useful crop where there is a need for silage of high protein content and where a reduction in the rate of concentrates is important. It was felt that red clover should be particularly valuable in areas where soil conditions, in particular low pH, and impeded drainage limit the use of lucerne.

Lucerne

This valuable legume can also produce high yields of digestible dry matter per hectare on lowland farms but it is unlikley to be a widely grown crop in Scotland. In favoured areas it has been grown for hay as a feed for racehorses and sold at a high price per tonne. The potential of lucerne as a silage crop for dairy cows is currently being studied at the Hannah Research Institute and initial results are encouraging.

Summary

Few farmers make much real use of legumes: this was the view of Dr. M. Wilkinson who ably summed up the views of the meeting. It seems that legumes offer a better return than they did three years ago but present and future costs of N fertiliser are such that the wider use of legumes will not be dramatically encouraged the the short term. Legumes either grazed or conserved, will increase the intake of the animal and hence save concentrates and enable the content of protein in supplementary feed to be reduced.

In addition, legumes offer an alternative crop on the farm to the benefit of the soil and stock. Also legumes maintain a healthy population of insects in particular bees and this must please our conservationists. This aspect should not be overlooked at a time when agriculture is being regarded more and more critically by the rest of the nation. Thus the use of legumes can have far wider implications than may be considered at the present time. They are used widely in other countries with more favourable growing conditions than in the UK but we must never forget the potential of this crop to supply free N to the grass and to increase the feeding value of the forage.

The conclusions from this most timely meeting will be made known to members of the BGS and to local grassland societies in the near future. A real interest has been focused on legumes which it is hoped will create wide interest and response from farmers, advisers, the trade and research workers. The role of legumes in UK agriculture has without doubt had a good 'airing' and the prospects for them in the future appear to be encouraging.

The author wishes to thank the Committee of the SWSGS for a generous grant towards his attendance at this meeting.

BOOK REVIEW

'MODERN MILK PRODUCTION' by Malcolm E. Castle and Paul Watkins.

Published by Faber and Faber, London, 2nd Edition 1984. 30 pages, 38 tables, 51 figures, 44 plates. Paperback £8.25. ISBN 0 571 13242 1 (pbk).

A second edition of this popular book on dairy farming has recently been published. A full review of the contents was presented in Greensward No. 22, 1979.

The new edition has added information on flat rate feeding and big bale silage. The new protein system is explained and the section on milking parlours has been revised in line with the new designs.

The book is an authoritative review on milk production and with the current anxiety over quotas, the tenets of good husbandry outlined in this text form a valuable background with which to face the challenge. At a price of only £8.25, it costs the same as a bag of concentrates - a cost easily recouped by applying the principles advocated and ideas offered by the authors. R.D. Harkess.

HOW I FARM

Tom Tudor

Llysun, Llanerfyl, Welshpool, Powys

(Winner of the 1982/83 British Grassland Society's National Silage Competition)

A meeting of the SWSGS at the Lochview Motel, Crocketford, 24 October, 1983.

Llysun is situated at 215 metres above sea level in an area of mid Wales which receives 1500 mm of rainfall each year. The farm is well sited for access to good markets at Welshpool and Oswestry and is reasonably near the big Midlands industrial area. This is particularly useful to farmers producing finished lambs and cattle.

The farm extends to 132 hectares including woods and a river plus 20 hectares of improved hill lying some 2 miles distant. The 120 hectares of farmable land are entirely down to grass and the farm carries 110 Welsh Black cross suckler cows and 20 followers plus 740 sheep. Two thirds of the farm qualifies as a less favoured area and hill cow and sheep subsidies are obtained for all stock.

Cattle

The suckler cows are crossed with Charolais or Limousin bulls and are autumn calving. A few are pure-bred with A.I. for replacements and some replacements are purchased. Some of the calves are sold off at weaning (May) and the others are carried through the following winter. Heifers are then sold fat off silage and the steers are sold as stores in early spring.

Sheep

The sheep flock comprises 100 Welsh ewes which are crossed with the blue-faced Leicester to give the Welsh half-bred and 340 Welsh mule lambs which are lambed and then sold as yearlings. All lambs are sold fat off the farm. A drenching programme is followed for parasite control.

Suffolk rams are used on the Welsh mules. Texels were tried but the market was not so interested so the Suffolks were re-introduced. Also running both Texel and Suffolk rams required two groups of sheep which introduced a complication to the management requirement.

Grass Conservation

Silage fields are grazed till April and then set aside for silage. 48 hectares are taken for first cut in early June and a second cut is taken from 24 hectares in mid July. 1500 tonnes of silage are made each year. Half of the first harvest is cut for quality silage, the remainder being left to provide a more bulky crop. Second cut herbage is ensiled in a separate silo. Silage equipment comprises a mower conditioner, precision chop forage harvester, large 8 tonne trailers and a push-off buckrake used in a 3-man system. Grass is wilted for 24 hours, then ensiled as quickly as possible using the wedge technique in order to minimise surface area. The silo is sheeted as filling proceeds and the sheet

is weighed down with tyres. A side sheet is essential to eliminate the side waste caused by inadequate consolidation and it should stretch at least 2 metres across the silage from the wall. Depending on season 8 hectares (40 tonnes) are cut for hay.

Fertiliser Use

Lime is applied as required to maintain a soil pH of 6. In addition, half of the farm each year receives additional phosphate in spring in a soluble phosphate form. At the end of March swards receive 50-75 kg N for sheep and are then shut up for silage at the end of April when they receive 22,500 litres (22 m^3) slurry plus 75 kg N per hectare. Second cut silage receives 500 kg of 20,5,15 compound which is followed by 315 kg of the same compound for autumn grazing.

Grazing the fields receive 75 kg N in mid April then in June 380 kg of compound or straight N depending on the season and the stage of grass growth and a final further 75 kg N is given in August to give a total of 225 kg N yer year.

Cattle Management

Calves receive 1 kg barley per day plus *ad lib* hay, the barley rising to 2.3 kg per day by the end of winter. No concentrates are fed to the cows, only to the calves. Calves are housed in 3 groups according to their size. The best quality first cut silage is fed to the suckler cows with calves and to the young stock. 80 cows are housed in the cubicles and self-fed, the remainder and the young stock being easy-fed on silage removed from the silos by a block cutter. The farm carries both Charolais and Limousin bulls from October to March. These animals are shared with other farmers and so are held elsewhere in the summer.

All slurry from the housing area is gravity moved and the pit holds an entire winter's slurry. The cows are housed from November until May but can be held indoors till first cut aftermaths are available if grass is short. At housing calves are dehorned, given vitamins A, D and E and vaccinated against pneumonia. In May the cows are weaned, injected with copper and sent to the hill with the heifers. 30 of the best calves are sold at the end of May.

In the second winter, *ad lib* silage is offered with beet pulp and barley and the heifers are sold off at Christmas. The steers are sold off in February. All cattle due for disposal are sold before lambing starts in early March. This leaves room for the sheep.

Sheep Management

Because the cattle are housed, this leaves a good bite for the sheep although some silage is offered at grass before they too are housed. The objective is to house the sheep 8 weeks before lambing, that is by the end of December, and they go into the empty silos which held the first cut silage. Having the ewes indoors over the January to March period rests the pastures and saves them from excessive poaching. The silage which is fed to the ewes is usually the good quality second cut material. Sheep have access to high magnesium and high calcium minerals whilst they are housed. The ewes receive a high energy, high protein concentrate 3 weeks before lambing at up to 0.45 kg per day. Ewes and lambs are penned up for up to one day and then are turned out to grass. Silage is offered along with grass if necessary.

The sheep graze the silage fields until the end of April and are then pushed out on to the steeper fields. Ewe lambs give a percentage lambing of around 110%. Lambs are weaned in July in order to let the ewes grow on for the yearling sales in autumn. Over the whole flock the lambing percentage is around 140%. For summer grazing the sheep are mixed with the later calving suckler cows. In July the sheep are moved on to the hill area and the cows are brought down prior to calving. For all the stock movements and for routine health checks the need for good handling facilities cannot be overstressed. The farm endeavours to have maximum integration between the beef and the sheep enterprises.

Conclusion

With the present clouds hanging over the farming industry it is important that we farm our grassland better. Long gone are the days of £12 per tonne hay and £40 calving heifers! Attention to detail at all stages of stock and grassland management is very essential and the use of adequate recording is a considerable aid to management. The application of this policy at Llysun has produced a gross margin of £1022 per hectare from the ewe flock and £285 per suckler cow.

Discussion

Since 1968 the whole farm has been reseeded and is now down to long-term grassland. Swards are maintained by management and adequate fertilisation. Late pasture ryegrasses such as S 23 and Melle are dominant in swards both for grazing and cutting.

Llysun has a lot of steep ground and twin rear wheeled and four wheeled drive tractors are used. The steep land receives the same fertiliser as the rest of the grassland. Sending the correct man on the correct day is a good safety rule and no-one is asked to go where the boss hasn't been! Because of these steep fields it is generally the same fields which are grazed and cut each year. Mixed stocking, frequent defoliation and the avoidance of excessively large crops of silage maintain sward density.

Phosphate is very important. When reseeding 125-150 kg phosphate is applied as slag or K-slag. More recently 250 kg per hectare of triple superphosphate has been applied in alternative years so that the whole farm receives phosphate every two years. Magnesium is put into the drinking water when the cows are brought indoors.

Hay is fed to young calves and they are weaned onto silage as they get older. The justification for making hay is that at certain times, extra feed is required before the silage pits are opened and at present there are inadequate facilities for silage feeding to calves. Only 8 hectares are cut for hay and this gives the opportunity of making a better job of the 40 tonnes or so that are made.

Summer mastitis is around and good management is needed to keep it in check. When the cows are weaned, they are dried off on straw for two weeks. Each quarter is inspected and cleaned out and dry cow therapy is used. Nearer calving, when they return from the hill, stockholm tar may be applied to the udder or a second dose of dry cow therapy undertaken.

Llysun ground is fairly dry so despite 1500 mm rainfall it is usually possible to wilt the silage. If rains persists a limited wilting time is allowed because of the late flowering grasses grown but should things continue bad it is a case of

getting on with the job and using an effective additive. If weather has been good and a 12 hour wilt is all that is required, an additive is not used.

Good silage is a major key factor in the farming system and as no concentrates are fed to the cows, the quality must be good. Sheep too, need good quality silage. Sheep prefer the drier silage and this is more possible with second cut grass. The target is to have enough silage for a 7-month winter and not to be forced to turn out in poor spring conditions. A typical silage analysis for Llysun is dry matter 33%; crude protein 18%; pH 4.3; ammonia 5.4%; ME 10.9; D value 68. The silos are narrow and high and with the precision chop material this aids consolidation. If there is any doubt the sheet will be lifted after filling to enable further rolling. Roofed silos form part of the stock housing and give comfort to the stock, especially when self-feeding, a system which saves time and costs.

LEAFLETS ON SILAGE/HAY ADDITIVES

(1) SILAGE AND HAY ADDITIVES - 1984. *The Scottish Agricultural Colleges Technical Note No. 69, 1984. 7 pages. ISSN 0 142 7695.*

This is a guide to additives available on the UK market together with a brief comment on the different basic types and their mode of action.

Available gratis from the Librarians of the Scottish Agricultural Colleges in Aberdeen, Ayr or Edinburgh.

(2) SILAGE ADDITIVES USED IN ENGLAND AND WALES - 1984 SEASON. *Ministry of Agriculture, Fisheries and Food, 1984. 7 pages.*

This leaflet gives a list of the silage additives available in England and Wales. The broad groups of additives are assessed according to their effect on silage fermentation, animal performance, protein protection and safety in handling. A table gives a guide to the level of active ingredient being added to the crop at the recommended application rate.

Available gratis from MAFF Publications, Lion House, Alnwick, Northumberland, NE66 2PF.

MEET THE CHAIRMAN

CSGS : MIKE MILNE, SOLSGIRTH ESTATE, DOLLAR

After completing an NDA course at the West College in 1962, Mike's first post was as an assistant manager with Stenhouse Estates at Mid Glen, Langbank. There he was responsible for the development of the beef side of the business, eventually building up to some 300 suckler cows. It was here that he developed his interest in grassland management and he became a founder member of the Central Scotland Grassland Society.

Always looking for opportunities in life, Mike took off for a two year spell in the manufacturing leather industry and during this time studied for and was elected a member of the Institute of Industrial Managers. This gave him a valuable insight into industrial practices and also valuable experience in the field of man-management. However the urge to return to farming proved irresistible and he returned to Mid Glen.

In 1974 Mike moved to Solsgirth Estate as Estate Factor and Farm Manager. He now manages some 1280 ha in five units which includes 300 ha of prime arable land near St. Andrews. The centre of the farming operations remains at Dollar where there are some 500 suckler cows with progeny being taken through to finishing and a flock of 750 cross ewes. Apart from 250 ha of cereals, other arable crops include vining peas and potatoes. Since going to Solsgirth Estate he has initiated an ambitious reclamation programme to improve the productivity of the grassland and members of CSGS had the opportunity of seeing some of the results of this work last November. Silage making is a very important part of the farming operation with fattening cattle demanding high quality material to finish on. Mike aims to make around 200 ha of first cut silage in 14 days which demands a great deal of planning and co-ordination.

Mike's wife Florence is never far away, particularly when parties of visitors come to Solsgirth, and the welcome refreshment she provides is perhaps why so many people return! His daughter is following in her father's footsteps having just completed an agricultural degree course at Edinburgh University which means she now knows more about UME's than her father! Elder son has seen more sense and decided to study civil engineering, whilst younger son still attends school.

Always involved in his work, Mike has never had much time for hobbies. He is a past Chairman of the West Renfrew Agricultural Discussion Group and has served numerous times on the committee of the Central Scotland Grassland Society. More recently he has taken up horse riding and hunting and can often be seen going round the estate on horseback despite comments such as "here comes Lester". He reckons you can see more from horseback than from a Land Rover. To find time for his hobby he has learnt more about the art of delegation and now wishes he had found a hobby earlier on in life.

Always forthright in his approach, Mike believes in saying what he thinks and in getting things done. His enthusiasm for his work and for the Grassland Society will ensure that he makes an excellent chairman. I.R. Fraser

CENTRAL SCOTLAND GRASSLAND SOCIETY

SILAGE COMPETITION 1983-84

A meeting of the CSGS in the Stuart Hotel, East Kilbride on 12 January, 1984.

Judge: Mr. Jim Altham, Yanwath Hall, Yanwath, Penrith, Cumbria.

There had been 53 entries in the competition which was slightly down on the previous years. Weather conditions for first cut silages had been very poor, with a slow start to the growing season followed by a very wet May. This was reflected in the results with only 13% of entries achieving a D value of 65 or greater compared to 42% in the previous year. Second cut samples were higher in dry matter following a very hot and dry spell, but because of lack of bulk many silage makers had held off cutting at their normal time and as a result D values of second cut samples were also depressed. Nevertheless D values had averaged 61.5 which compared well with the 1979 and 1980 competitions when the weather had been considerably better. Average ammonia nitrogens were the lowest ever recorded in the competition indicating that quality of fermentation had much improved. Average analyses for the silage competitions 1979-1983 are given in Table 3.

The judge opened his comments by saying that he had enjoyed his two days of visits and had found it very informative and stimulating. He had been impressed with the quality of the silage he had seen despite the adverse weather conditions of 1983. Attention to detail had been good and absence of surface waste on most pits was very commendable. Shoulder waste was present in some pits but generally steps were being taken to reduce the problem.

Freedom of contamination was also good, although in a year such as 1983 particular problems had arisen with soil contamination in first cut samples. In several self-feed silos there had been some unexplained 'ribs' across the face - silage which the cows obviously found less palatable, although on visual examination there appeared to be no difference between this silage and that which the cows were eating readily. Uniformity was also very good - in very few silos were noticeable bands present. Generally there was little mould to be seen although some of the drier second cut samples had some mould development nearer the surface.

Effluent control had been good in silage clamps which had been visited. It was very necessary to contain effluent in a collecting tank and this had been well taken care of.

In awarding marks for efficient use of labour and machinery the judge had also taken into account efficiency during silage making. There was little point in taking two weeks to fill a clamp and the aim had to be 6 hectares per day. If machinery to make silage at this rate could not be justified, then contractors should be considered.

In looking at physical feeding efficiency the judge said that for self-feed systems he preferred the electrified wire rather than barriers with solid boards at the base, as silage which accumulated behind these tended to be ignored by stock.

Table 1. 1983/84 Silage Competition : Analyses and Marks.

Rank	Code	Analyses % DM	Analyses % CP	'D' Value	Ammonia N as % total N	Marks (out of 35)
1	CL48	27.6	15.3	67.6	7.5	30.50
2	CL30	28.6	12.8	67.7	6.8	29.70
3	CP22	34.3	14.7	65.4	6.2	28.65
4	CL2	20.3	15.8	66.8	7.8	28.45
5	CP40	25.7	19.1	64.2	9.3	27.55
6	CP18	21.0	13.3	66.6	8.6	26.95
7	CL36	20.0	15.4	64.2	5.7	26.40
8	CL3	21.3	16.2	63.2	6.7	26.025
9	CS38	25.5	15.5	62.1	5.7	25.85
10	CP41	19.3	18.0	64.6	9.9	25.80
11	CL50	25.4	14.3	62.9	6.9	25.60
12	CS6	25.3	17.0	63.0	10.1	25.45
13	CL49	40.4	15.5	63.6	11.4	24.65
14	CL4	20.7	14.2	65.2	11.1	24.60
15	CS1	19.1	18.3	63.2	9.8	24.35
16	CL31	21.1	13.5	63.7	8.8	24.075
17	CL16 (T)	34.9	13.9	63.7	11.9	23.70
18	CL10	27.2	16.7	62.6	12.7	23.60
19	CL32	27.4	16.4	61.4	10.3	23.45
20	CL15	30.9	17.0	59.7	8.0	23.20
21	CL24	33.4	14.0	61.9	9.8	23.00
22	CS26	30.5	15.8	60.1	8.2	22.90
23	CL19	18.5	13.6	62.7	7.5	22.50
24	CL9	20.0	14.0	65.4	14.9	22.45
25	CL37	26.0	14.3	62.1	11.9	22.30
26=	CL7	21.0	13.1	64.7	14.0	22.25
26=	CL23	16.2	13.9	64.4	10.2	22.25
28	CS25	17.9	18.8	62.9	12.5	22.10
29	CP20	20.4	14.3	61.1	8.5	21.70
30	CL42	19.6	13.1	61.5	7.6	21.55
31	CP39	18.5	15.0	62.5	11.1	21.20
32	CS8	19.8	14.3	64.6	16.5	20.90
33	CP21	28.6	16.3	58.0	8.6	20.85
34=	CS5	19.0	14.6	62.7	13.7	20.15
34=	CL27	24.2	13.2	59.9	10.3	20.15
36	CL28	22.9	11.8	61.1	12.6	19.175
37	CL14	19.7	15.2	60.1	11.8	19.15
38	CP52	29.8	14.0	58.0	10.0	19.00
39	CS45	23.5	13.5	59.1	11.9	18.525
40	CS11	33.4	15.0	55.3	8.6	18.20
41	CS13	38.1	11.2	52.2	5.7	17.60
42	CS12	20.1	13.7	60.7	15.3	17.45
43	CL43	24.4	9.9	58.5	10.3	17.15
44	CS46	26.2	11.6	55.9	7.8	16.90
45	CL35	21.0	16.1	63.1	25.2	16.55
46	CL53	23.8	12.0	58.0	12.8	16.30
47	CL47	22.1	14.3	58.3	15.1	16.175
48	CP33	22.3	14.1	55.8	12.3	15.225
49	CL29	21.5	12.1	56.8	14.0	13.975
50	CP34	19.2	12.9	58.6	16.5	13.90
51	CL44	19.7	12.2	59.5	18.8	13.55
52	CP51	16.5	17.7	60.5	27.3	11.70
53	CL17	19.0	14.1	55.0	18.1	11.00

T = tower

It was felt by the judge that some farmers did not have a good enough idea of how much production they could take out of their silage. He felt there was some improvement which could be made here.

In summing up, the judge said that he believed that it was important to achieve a good dry matter percentage in order to obtain a satisfactory fermentation. He was not convinced that additives could be justified at the cost of £2 per tonne of made silage. The difference between the top and bottom silages had been minimal - they had all been good silages. He felt that some of those nearer the bottom of the inspection list would soon be chasing those at the top.

The judge then ammounced his inspection marks (Table 2) and awarded the first prize to Mr. B. Hill for Messrs. R. & M. Young, St. John's Kirk, Symington. Second prize went to Mr. T. Brown, Muirhouse, Libberton with third prize to Messrs. J. Clark & Sons, Dunrod, Inverkip and fourth prize to Major R. Tullis, Muirside, Tullibody.

In concluding the judge thanked all those who had entered the competition and especially those whose farms he had visited.

Table 2. Short list for Judge's visit (in order of analysis).

Awards	Farm	Analysis (35)	Inspection (65)	Total (100)
1st and SAI Cup	Mr. B. Hill per Messrs. R. & M. Young, St. John's Kirk, Symington.	30.50	60	90.5
Best New Entrant	Messrs. A. Whiteford, Bonnahill, Strathaven.	29.70	41	70.7
2nd and most improved silage	T.W. Brown, Muirhouse, Libberton.	28.45	58	86.45
3rd	Messrs. J. Clark & Sons, Dunrod, Inverkip.	27.55	58	85.55
	Messrs. J. Kerr & Sons, Kirkland, Dunsyre.	26.40	35	61.40
4th	Major R. Tullis, Muirside, Tullibody.	25.85	55	80.85
	Messrs. T. & B. Wilson, Bishopbrae, Bathgate.	25.45	39	64.45
	W.K. Carruthers, Nethertown, Auchenheath.	24.60	38	62.60

Other prizes (by analysis only)

Best New Entrant : Messrs. A. Whiteford, Donnahill, Strathaven.
Most Improved Silage: Mr. T.W. Brown, Muirhouse, Libberton.

GROW MORE GRASS

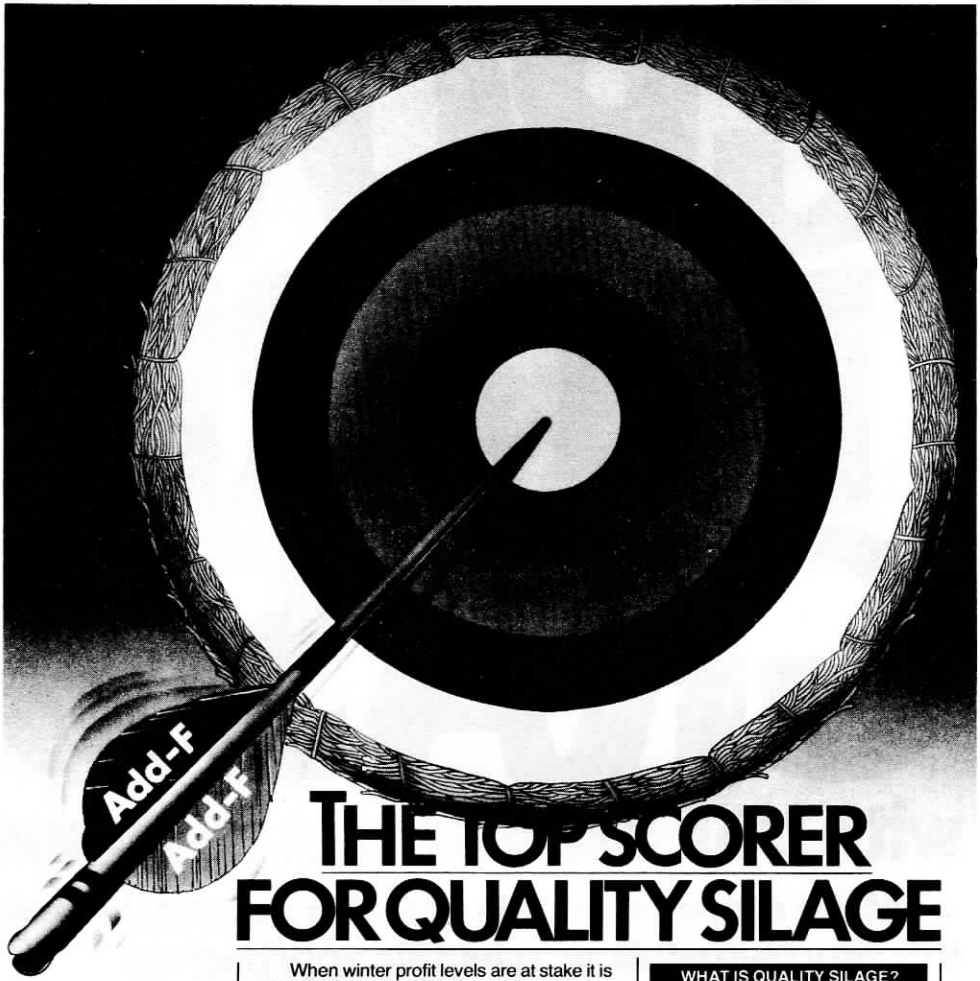
with UKF Swardsman Systems

Make more profitable use of grassland through this simple-to-follow, scientific approach to fertiliser management.

Whether you use grass for grazing, silage, hay or any combination, there is a Swardsman System to help you.

UKF Fertilisers

Growing a greater Britain.



THE TOP SCORER FOR QUALITY SILAGE

When winter profit levels are at stake it is essential that you're feeding a high quality silage which preserves the maximum feed value of the original fresh grass you harvested with the palatability to ensure a high intake. The trouble is that silage quality can be affected by conditions beyond your control, not least of which is the weather.

That's why more farmers rely on Add-F than any other silage additive. A choice that is backed up by independent ADAS trials which score Add-F with its high Formic Acid content as the most effective of all silage additives.

With Add-F you can hit the bullseye everytime guaranteeing a higher D value, lower pH, lower % ammonia. Quite simply this means more milk, more beef and greater profitability. **In fact every £1 invested in Add-F can produce at least £3 in return. Anything less is a false economy!**

WHAT IS QUALITY SILAGE?	
High Energy value	–over 10.2 MJ Kg/DM
Low pH	–below 4.2
Low % NH_3 in N	–below 10
High Protein	–over 15% CP

The effectiveness of Add-F with added safety
Foraform

Add-F
sets the standard
BP Nutrition

BP Nutrition (UK) Limited,
Agricultural Division, Minsal Works,
Wincham, Northwich, Cheshire CW9 6DF.
Tel: Northwich (0606) 41133.

Table 3. Mean silage analyses for silage competitions 1979-1983.

Year	Numbers entered	% DM	% Crude protein	'D' value	Ammonia N as % of total N	% of entries with D > 65
1979	33	20.8	17.0	61.8	18.9	12
1980	37	21.6	15.7	61.3	16.3	8
1981	53	22.6	13.8	60.1	14.0	4
1982	59	26.6	14.6	63.6	13.6	42
1983	53	24.0	14.6	61.5	11.3	13

BOOK REVIEW

'MILK PRODUCTION - SCIENCE AND PRACTICE' by J.D. Leaver

Published by Longman, London, 1983. 173 pages. Price £6.95. ISBN 0 582 44010 6.

This book is published in the Longmans 'Handbooks in Agriculture' series and is written to provide the student and innovative farmer with a guide to the biological and economic aspects of milk production.

After an introduction to the milk production industry, two chapters discuss genetic improvement and animal breeding management. Three chapters deal with the principles of feeding and management of feeding during winter and summer. Chapters on herd health, milking management, buildings and equipment and replacement rearing complete the text.

To cover the whole subject in such a short book is no mean feat and the author has ably drawn together the key factors in breeding, feeding, rearing and managing dairy cows. Certain details have obviously been missed out for brevity and a more comprehensive reference list would have been useful. None the less, this book is ideal for the student wishing to quickly and easily review the background of the science and practice in modern dairy farming. With the recent introduction of quotas, the book contains many useful guidelines by which the farmer may improve the overall efficiency of his dairy business.

The book is well illustrated with tables, figures and photographs and at £6.95 costs even less than a bag of concentrates! R.D. Harkess

YANWATH HALL FARM

James G. Altham

Yanwath Hall, Yanwath, Penrith

A meeting of the CSGS at The Stuart Hotel, East Kilbride, 12 January, 1984.

Yanwath Hall is a 125 ha farm on Lowther Estates near Penrith. Apart from 16 ha winter barley the farm is down to grass, of which 57 ha is permanent pasture being in the old rig and furrow. Around 2,000 tonnes of silage are made annually for the 200 dairy cows and followers.

Following an outbreak of brucellosis in the early 1970's the 130 Ayrshire cows were gradually reduced as more reactors were slaughtered until only 34 remained. Because cows could not be purchased for two years it was decided that when re-stocking did take place a change would be made to Friesians. By the spring of 1979 the farm carried 200 cows split into two separate herds of 100 autumn calvers and 100 spring calvers. Culling rates have tended to be high because of the variability of purchased cows and Mr. Altham reckoned that 50% of the cows had not come up to standard. It was very difficult to establish a herd in this manner and as a result both herds still contain a relatively high proportion of young cows.

A decision was taken in 1960 to loose house cows and a silage shed with cubicle house lean-to was erected for £1,200. Gradually the buildings were added to, but with the decision to push cow numbers to 200 it was decided, in 1977, to erect a shed 210' x 90' to accommodate the dairy herd on an easy-feed system. Cows are milked through a 20:20 herringbone parlour with automatic cluster removal. A weak solution of hypochlorite is used as an udder spray. High yielding cows are milked first in the morning and last at night to give as near as possible an equal time between milkings.

Feeding

All stock are fed a complete diet and currently the ration per cow per day is:-

½ kg Fish Meal
1 kg Soya Bean Meal
4 kg Brewers Grain
2 kg Molasses
2 kg Barley
Silage *ad libitum*

It is reckoned that for the first 2 months of lactation the silage will contribute the maintenance requirement of the cow, and thereafter production from silage is progressively increased.

The need is to make high quality silage and the aim is to start cutting at the beginning of the last week of May. However, if the weather forecast indicates unsettled weather, cutting may be delayed for 2-3 days. Grass is cut with a Tarrup 360 mower-conditioner and left to wilt for 24 hours. The aim is to get the dry matter over 25% and if this is not achieved in 24 hours then the wilting period may be extended. No additive is used. The grass is not normally rowed up, but lifted straight from the swath with a New Holland 719 forage harvester.

Fertiliser Use

Fertiliser application generally starts with slurry and the aim is to put on 125 kg N per hectare for the first cut - last year the slurry was backed up with 80 kg/ha N. Compound fertiliser is all spread in liquid form, and a total of about 120 tonnes is used per annum. In the past 2-3 years soil potash status has been good and as a result, potash applied in compound form has fallen to around 60 kg/ha for first cut.

Each herd of 100 cows has 16.2 ha of grazing which is alternated day and night and this receives between 300 and 350 kg N per hectare during the season, again as liquid fertiliser. Water troughs have been made from 15 foot diameter concrete manhole rings and magnesium is metered into the water supply. Because potash levels have been built up over the years there can be a problem with staggers in the spring. Routine blood testing is carried out on a selection of cows to provide a metabolic profile, and in the past both selenium and copper have been found to be in short supply.

Slurry is spread using a Molex spreader, and whilst expensive to store, the best use is made of slurry spread in late winter and early spring. However, slurry is not applied to grazing pasture after New Year and as much as possible is stored for application to silage ground. Slurry is spread on silage ground until such time as there is danger of it being lifted along with the grass and contaminating the silage.

Breeding policy

Before the change to Friesians, calving had been on an all the year round basis, but feeding and management were difficult. With the decision to expand to 200 cows, it was decided that a batch calving system should be adopted and the herd was split into spring and autumn calvers. The spring calving herd starts calving from 7 February and serving the cows starts on 3 May and continues until 5 July when the bulls are removed. This is rigidly maintained, and anything not in calf is generally culled. Some better cows have been transferred into the autumn group, but if a cow is allowed to run 6 months she is more difficult to get back in calf and conception rates tend to be poor. The autumn calving herd starts on 1 September with service being from 25 November to 27 January.

In order to keep the herds more or less self-contained it was decided to keep replacements from each herd in the same group, which meant either 2 year or 3 year calving. Because of potential cost saving and better utilisation of land it was decided to adopt a 2 year calving system. The system now works quite successfully but does involve achieving the target weights set down.

Table 1. Target liveweights for 2 year calving (kg)

Age	Target Weight	Weight achieved at Yanwath Hall
5 weeks	55	
3 months	85	
6 months	140	
9 months	205	228
12 months	270	
15 months (service)	330	343
18 months	370	418
Before calving	510	
After calving	450	460

Synchronised mating of the heifers takes place using prostaglandins with the autumn calvers aiming to calve on 1 September. The first injection is given on 17 November and the second injection on 28 November, and they are served 3 days later on 1 December. It is aimed to calve the spring heifers on 17 February, meaning that they are given their first injection on 9 May and the second on 20 May and served on 23 May. This system has worked well and means that management of heifers is easier when they are introduced to the herd. It does mean a lot of work 10 days either side of the predicted calving dates as calves tend to come thick and fast.

Mr. Altham summed up his breeding policy by quoting his ten commandments:-

1. Improve on the preceeding generation.
2. Cows must be capable of good yields.
3. Aim for improved yield of milk and fat.
4. Improve weight of milk protein.
5. Breed cows with a good temperament.
6. Cow must be easy to milk.
7. Breed for longevity.
8. Cows must be regular breeders.
9. Cows must have good conformation.
10. All these must be achieved at reasonable cost.

Discussion

The speaker was questioned on his approach to silage additives. He stated that he did not use an additive, no matter what the conditions. In his mind additives were an aid to inferior management. His basic rules were to grow swards of perennial ryegrass, to get high soluble sugars, to wilt to 25% dry matter, to lift very rapidly and to cover the clamp as quickly as possible. Additives were now expensive, many costing over £2 per tonne treated, and this money had to be recouped. Silage over 25% dry matter doesn't need an additive, and using weather forecasts he had failed only once in the last 10 years to make silage of more than 25% dry matter.

Other members of the audience felt that it would be very difficult to achieve 25% dry matter silage in nine years out of ten where rainfall was in excess of 1000 mm (40") per annum. One member stated that he had wilted silage for 48 hours and it only had a dry matter of 19%.

The winner of the silage competition, Mr. Blair Hill, stated that he would always use an additive as an insurance policy, and this had been particularly borne out in the unsettled weather conditions at silage time in 1983. He agreed with Mr. Altham that speed of operation was also essential in making good silage. However, if good fermentation was to be guaranteed in a year when soluble sugars in the grass were low, then an additive was necessary.

The speaker was also asked about the cost of his complete diet ration and concentrate mix. Costing silage at £20 per tonne the cost was £2.09 per cow per day, giving a margin per day for a 25 litre cow of £1.31 per day. The concentrate mix for young stock cost about £136 per tonne and the mix consisted of 450 kg barley, 80 kg sugar beet pulp, 50 kg molassed palm kernal, 50 kg soya bean meal and 25 kg fish meal.

Asked why he had stopped bull beef, the speaker replied that the reason was because he had no accommodation to keep extra stock. When cow numbers were lower and he had Ayrshire cows he had worked a bull beef system quite successfully.

With the move into Friesians he had found a buyer locally prepared to take his calves, and this system was now working well. The present buyer was also prepared to take calves with Holstein blood providing he knew, so that they could be put on to a different system.

Asked which herd left the most money, the speaker said that it did not particularly interest him. With the two herds, resources were more effective and fully utilised e.g. calf pens, milk storage. If there was a swing to one or other system, additional capital would be required to provide extra facilities and this would wipe any financial benefit to one system compared to the other. As with all farming systems it was a case of getting the balance right so that the whole system produced the best profit. He did not foresee having to alter the balance between the enterprises in the near future. I.R. Fraser.

SPRING TOUR TO DUMFRIESSHIRE

An outing of the SWSGS to The Whins and Stenries, 17 May, 1984.

The Whins (Clarke family). This farm extends to 240 ha and carries 140 Friesian cows with a lactation yield of 6,000 litres. Cows are self and easy fed and calves are reared as replacements or as finishers and are housed in a low level slatted house. The heifers and some of the cows are served with a beef bull. In addition, 150 Half-breed ewes and 30 hoggs are carried. Lambing is indoors in late February and all lambs are finished fat off grass. 300 store lambs are purchased to finish on grass and swedes.

To support these stocks the cropping on the farm consists of 120 ha grazing, 3 ha swedes and ½ ha kale, 48 ha silage cut twice and 8 ha of hay. Forty eight ha of spring barley and 12 ha winter barley are also grown.

Stenries (McBride family). Stenries is a beef finishing farm extending to 85 ha. Twenty two ha are in spring barley and of the grass, 28 ha are cut for silage, a second cut being taken from half of the area. Seventy five Half-bred ewes are carried with all lambs finished off the grass. The beef unit handles 200 dairy (Friesian) and a dairy cross beef-type calves which are bought in and are finished at 18-24 months old. Most are finished out of bedded courts in late winter but some are wintered on slats and finished at grass.

For these farm visits the Society linked up with the Mid Cardiganshire Grassland Society from Aberystwyth, whose members were touring in the Solway area. Both Societies are grateful for the warm welcome extended by the Clarke and McBride families and for their able and interesting handling of queries and questions.

COMPETITIONS 1984/85

CENTRAL SCOTLAND GRASSLAND SOCIETY

6TH ANNUAL SILAGE COMPETITION

Prize money for the first four places will be £25, £20, £15 and £10 respectively. In addition £10 will be awarded to the most improved analysis compared with last year and £10 will be awarded to the best analysis from a new entrant. Details will be sent to members in the summer.

SOUTH WEST SCOTLAND GRASSLAND SOCIETY

12TH ANNUAL SILAGE COMPETITION

Scoring and judging procedures will be the same as last year. Permanent trophies will be awarded to the first three places overall and to the first and second place in the Beef/Sheep section. Details will be sent to all members in due course.

9TH ANNUAL HAY COMPETITION

As for previous years entries will be judged entirely by chemical analysis and examination of the hay in the laboratory.

INNOVATIONS COMPETITION

Members are again invited to submit to the committee any innovation, invention or novel idea introduced to the farm to aid the growing or feeding of grass or conserved products. There is no entry fee for this competition and the committee will decide on the merits of the entries if an award should be made.

"NORTRON killed the meadowgrass and chickweed outright"

"Now the ryegrass is flourishing free from competition"

* Nortron is a registered trade mark.

SCOTS TIMOTHY

Tops the list everywhere

STAR FEATURES

★ TWO BIG CROPS OF HAY OR SILAGE PER YEAR

★ LONG LASTING

★ EARLY

★ GIVES BETTER RETURN FOR 60 UNITS THAN ANY OTHER GRASS

★ BRED IN SCOTLAND FOR SCOTLAND

★ WINTER HARDY

ASK FOR IT BY NAME FROM YOUR MERCHANT

AND REMEMBER THE NAME'S

"SCOTS"

SCOTS TIMOTHY SEED GROWERS ASSOCIATION

Hon. Sec. R. McFarlane, Mid Lecroft Farm, Bridge of Allan

DAY VISIT TO AYRSHIRE

A day outing of the CSGS to Changue and Dumfries House, 16 May, 1984.

Changue (Mr. R.M. Stevenson).

The farms extend to close on 400 hectares with the main unit at Changue providing 120 hectares of grazing and silage for the 230 pedigree Ayrshire cows. The retail dairy business is also situated at Changue and is a major part of the business, selling around 3000 gallons (13,500 litres) of milk per day over a large part of South Ayrshire.

There are five farm units within the business, the most recently acquired being Glengyron, an 80 ha unit which will be run along with Changue to provide grazing and silage for the dairy cows. Two miles from Changue the unit of Newfield is a 120 ha hill farm carrying 340 Blackface ewes with about 40 ha of inbye being used to provide summer grazing for the dairy followers. The Blairston unit, some 20 miles away, extends to 72 ha and carries 120 cross ewes and also provides grazing for young cattle and finishing lambs. Hay and barley are also grown on this unit.

Heavy clay soils and a 1100-1250 mm rainfall mean that poaching is a problem at Changue and only about a 4 month grazing season is possible. Set stocking is practised with grazing ground receiving some 250 kg N per hectare. Fields grazed in the early part of the season are later shut up for second cut silage and fields which are cut for silage first time are grazed later in the season. The aim is to keep a tight grazing sward which is less prone to poaching damage.

About 72 ha of silage are cut in late May or early June by contractor to make about 2000 tonnes of silage for the dairy cows. Speed is of importance to make a high quality product for the dairy cows. Slurry is applied to all silage areas along with 625 kg per hectare of a 20:6:12 compound.

The 230 dairy cows are milked three times a day and currently average 7360 litres per cow. In winter the ration is high quality silage, beet pulp and draff. The high yielders have access to out of parlour feeders.

Seeds mixtures for grazing leys are mainly Castlehill type mixtures (Sinclair McGill) with silage swards being based on intermediate perennial ryegrass, timothy and clover.

With the coming of milk quotas Mr. Stevenson is convinced that even more use will have to be made of grass. The grassland management, the quality of stock, and the obvious enthusiasm which he has for the whole business of farming will ensure that the business will continue to prosper in the uncertain times which lie ahead.

Dumfries House (Manager Mr. Ross Drummond).

Dumfries House extends to some 540 hectares of which 110 ha are in cereals of which 24 ha are undersown. The remainder is in grass with around 118 ha being set aside for silage and 8 ha for hay. The remaining land is down to grazing with 234 ha of old permanent pasture, 30 ha clean grazing for sheep and 28 ha direct sow-out. In addition to this there are about 200 ha of woodland. Soils range from light loam to heavy clay.

Ross Drummond has been at Dumfries House for less than a year but already he is trying to set up a clean grazing system for the sheep flock. At present the flock consists of 900 Greyface ewes put to the Suffolk tup and lambing percentage of just under 180%. The aim is to get to 190% as more clean grazing becomes available. Lambing starts around 18th March and the aim is to have a 19 kg lamb to sell in the 3rd week of June. Lambs sold from mid July onwards average about 21 kg.

Ewes are housed in three groups with 400 in a purpose-built shed, 300 in the former walled garden with shelters and 200 in a pole barn. All the ewes graze the silage fields after turnout and are then brought back in and dosed, and then turned out to the clean grazing. After this no dosing is carried out until after weaning time which is the end of July.

Grazing for the sheep is based on late pasture type perennial ryegrass with timothy and clover (SAI HF11). This receives 45 kg/ha of straight nitrogen in late March, followed by a similar application in mid April and then 125 kg/ha of a grazing compound in May. After this further straight nitrogen will be applied to give a total of 215 kg N/ha for the year.

The cattle stock on the farm consists of 200 suckler cows, mainly Hereford x Friesian which calve from 1st May. The heifers are put to an Aberdeen Angus bull, and the 100 larger cows put to either Charolais or Simmental bulls. The remaining cows are put to the Lincoln Red bull. All calves are fattened along with a further 600 which are purchased annually at 320-340 kg liveweight. The aim is to sell Hereford crosses at 430-440 kg with the Continental crosses going at over 500 kg. Around 4000 tonnes of silage are made annually to winter the cattle. Silage ground receives slurry and 625 kg/ha of a 20:6:12 fertilizer for first cut and 500 kg/ha for the second cut.

The policy is to renew the permanent pasture with either direct sow-outs or under-sown with spring barley, and in this way establish the clean grazing system for sheep.

The Society extends sincere thanks to Robert Stevenson and to Ross Drummond for giving their time to show members round their farms and for the opportunity to see two well-managed farms covering a broad spectrum of livestock enterprises.
- I.R.Fraser

THE CONTROL OF INTERNAL PARASITES IN GRAZING ANIMALS

Professor J. Armour

University of Glasgow Veterinary Faculty

A meeting of the SWSGS at the Judge's Keep Hotel, Glenluce, 8 March, 1984.

The important parasitic diseases of British ruminants caused by internal parasites are:

parasitic gastro-enteritis in cattle and sheep, mainly caused by the *Ostertagia* group of parasites;

parasitic bronchitis in cattle;

nematodiriasis in lambs: liver fluke infections in all ruminants.

These parasites have two distinct phases in their life cycles. The free-living phase is spent in the faeces of the host, on pasture and in soil, sometimes interspersed with a period in an intermediate snail host. Development usually proceeds from an egg passed in the faeces of the host, through one or two larval stages, to the infective stage.

The parasitic phase follows the ingestion, with herbage, of the infective free-living larvae. Development of the parasite then proceeds through one or two larval stages to the mature egg laying adult.

Figure 1. Life cycle of *Ostertagia ostertagi* (common stomach worm of cattle).

Seasonal Fluctuations of Larvae on Pasture

We are fortunate that in most instances we can monitor the levels of infective larvae on the pasture by a crude, but simple technique, which involves collecting

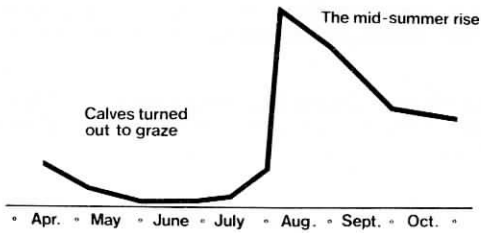
herbage or soil, which are then washed and processed to concentrate the larval parasites for identification.

This procedure has enabled parasitologists to follow the seasonal fluctuations of larval populations on the herbage and, based on these changes, evolve strategies to limit the accumulation of larvae and their ingestion by grazing animals.

Using the gastro-intestinal trichostrongyles as an example, the seasonal pattern may be summarised as follows:

In the spring, larvae which have survived the winter, are ingested by the grazing animals. When these infections mature, usually between 3 and 4 weeks, eggs are deposited in the faeces and the cycle of free-living development commences. In West Scotland, the temperatures are such that it takes until July or even August for these eggs to become infective larvae. Unless the autumn is very warm development ceases and there is no further free-living development until the following spring and summer. So, the peak of herbage infections are reached in August/September and these decline steadily during the winter.

Figure 2. Seasonal changes in infective larvae on pasture.



There are some important species differences in the timing of the above events. For example *Nematodirus battus* larvae accumulate in late May/June and the peak level of infective stages of liver fluke is more commonly reached in September/October. Although generally similar, the seasonal fluctuations of lungworm larvae, *Dictyocaulus viviparus* are less predictable.

It is important to realise that it is the contamination of pastures in the spring and early summer which produce the heavy, and sometimes lethal populations of infective larvae in the second half of the grazing season.

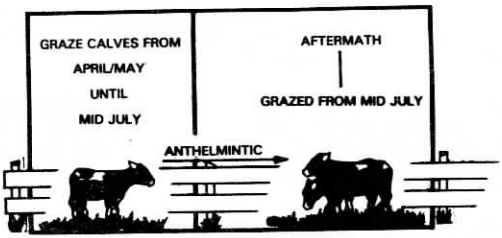
Control Methods

The control of parasitic infections is largely based on the use of anthelmintic drugs or pasture management or preferably a combination of both these measures. Traditionally, farmers have dosed their animals with anthelmintics through the summer and autumn. However, if the animals remain on the same pastures they rapidly become re-infected and there is continuing and undesirable pathology.

It is much better to prevent infections and apart from obvious solutions such as zero grazing, this may be done by either an evasive or a prophylactic strategy.

Evasive strategies require the animals to be moved to another pasture before the increase in herbage infections in July/August/September. To be safe for the incoming animals, this new pasture should not have been grazed by animals of the same host species during the spring e.g. silage or hay aftermaths. Since cross-infections between sheep and cattle are usually minimal, the same result can be achieved by rotating pastures grazed by sheep and cattle on an annual basis, or even better over a 3-year period with the field being cropped in the intervening year. In all these systems the animals should be given an anthelmintic treatment at the time of moving.

Figure 3. Control of bovine ostertagiasis (Weybridge system).



A system has also been recommended for dairy farms using a paddock rotation in which the susceptible calves graze ahead of heifers or dry cows, which are theoretically immune. This method can give good control of gastro-intestinal infections but requires very careful management.

Prophylactic strategies are based on the anthelmintic treatment of animals in the first half of the recognised grazing season to limit contamination of the pastures at this time. In the case of young cattle this may involve one or two drenches at 3 and 7 weeks after turnout in spring. A slow release rumen bolus containing anthelmintic is also available for cattle and this will significantly limit egg deposition over a 90 day period; so, if this is administered at say the end of April there will be virtually no contamination until July by which time most of the overwintered larvae will have died out and reinfection is kept to a minimum. To date there is no comparable device for sheep. Prophylactic anthelmintic treatments of lambs in May and June will prevent nematodiriasis but to control parasitic gastro-enteritis, ewes would have to be treated in April, May and June which is not very practical.

The above techniques are less reliable for control of lungworm and immunisation with the irradiated larval vaccine, which is available commercially, is the method of choice. In liver fluke infections the situation is complicated by the snail vector but the principles and seasonal variations are exactly the same; control may be simply achieved by moving pastures prior to the infective larval stages accumulating in September/October. However, where such a move is not practical, then routine anthelmintics are necessary through the autumn and winter. The use of molluscicides in areas of snail habitat is very effective but application of these chemicals has many practical difficulties.

GRASS AND SUPERGRASS - FOR SUPER PROFIT

Edwin Bushby, OBE

Watson Hill, Egremont, Cumbria

A meeting of the CSGS in the Royal Hotel, Bridge of Allan, 23 November, 1983.

The speaker outlined the development of his farm and current farming policy. This was reported in "Greensward" No. 25, May 1982, pp. 36-42 and the reader is referred to this for further information.

In the past two years, policy has remained relatively unchanged. The two dairy herds at Watson Hill and Whangs are still run as separate units and are costed as separate herds. The results achieved from the herds over the last three years are given below.

Table 1. Dairy herd results - Watson Hill 1980/83.

Physical Data	1980/81	1981/82	1982/83
Number of cows	133	144	149
Dry cows (%)	13	14	14
Milk Yield (litres per cow)	6830	7035	8110
Concentrates fed (t/cow)	1.64	1.73	1.76
(kg/litre)	0.24	0.25	0.22
Stocking Density (cows/ha)	2.5	2.5	2.53
Milk from forage (litres)	3026	2626	3195
ME from forage (%)	71	68	70
Nitrogen (kg/ha)	415	400	430
Financial Data (£/cow)			
Milk Sales	854	949	1094
Concentrate costs	222	243	272
Bulk Feed	7	4	8
Forage Costs	91	91	108
Margin over purchased feed	625	702	814
Margin over feed and forage (per cow)	534	611	705
(per ha)	1335	1529	1786

Emphasis has been to increased production of grass as much as possible and the speaker compared the UME he was achieving with data from the ICI Dairymaid and the MMB Dairy Management Schemes.

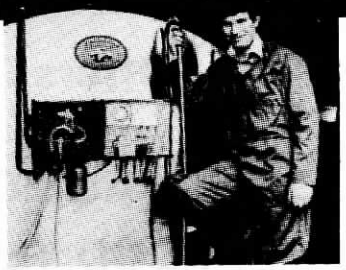
UME PRODUCTION

Dairy Scheme	UME from forage (GJ/ha)
MMB	66
ICI	75
Watson Hill	104
Whangs	104

White Meter electricity makes economic sense whichever way you look at it.

"It's cut my milk cooling costs by 52%."

Mike MacDonald, dairy farmer.



Mike MacDonald milks 180 British Friesians which give an annual yield of 7750 litres per cow. With more than 4000 litres of milk to chill daily, he found that switching to White Meter electricity could make substantial savings on his operating costs.

To do this he has an ice builder, plate cooler, DX tank and heat recovery unit. By using White Meter electricity, the system has cut his milk cooling costs by 52 per cent.

A White Meter tariff could help you make similar savings. To find out how, get in touch with your local Electricity Board.

"It's saving me £600 a year."

Roger Hawthorne, pig producer.

Roger Hawthorne's 300 sows produced 6424 piglets last year.

He switched to a White Meter tariff following advice from his local Farm Electric Engineer.

As a result he's been able to cut his electricity bill by 15 per cent. A significant cost saving.

To find out how you could benefit from using a White Meter tariff post the coupon now.

To: AGRICULTURAL MARKETING ENGINEER, FREEPOST, SSEB, CATHCART, GLASGOW G44 4BR. TEL 041-637 7177

☐ Please send me information on White Meter electricity tariffs.

☐ Please arrange for a Farm Electric Engineer to contact me.

NAME .....

ADDRESS .....

.....

.....

TELEPHONE .....

ELECTRICITY

the bright choice

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE

Offers Courses in:

AGRICULTURE
FOOD TECHNOLOGY
HORTICULTURE
POULTRY PRODUCTION
and
AGRICULTURAL ENGINEERING

For further information write to:-

The Academic Registrar
The West of Scotland Agricultural College
Auchincruive
AYR KA6 5HW

Telephone: Annbank (0292) 520331

Table 2. Dairy herd results - Whangs Farm 1980/83.

Physical Data	1980/81	1981/82	1982/83
Number of cows	109	113	116
Dry Cows (%)	13	12	15
Milk Yield (litres per cow)	6962	6952	7202
Concentrates fed (t/cow)	1.62	1.86	1.66
(kg/litre)	0.23	0.27	0.23
Stocking Density (cows/ha)	2.5	2.54	2.56
Milk from forage (litres)	2951	2439	3737
ME from forage (%)	69	65	70
Nitrogen (kg/ha)	435	420	453
Financial Data (£/cow)			
Milk Sales	867	938	1053
Concentrate costs	218	262	257
Bulk Feed	17	15	12
Forage Costs	85	86	96
Margin over purchased feed	666	661	784
Margin over feed and forage (per cow)	547	575	686
(per ha)	1367	1460	1756

Discussion

Most farmers tend to think of autumn grass as green water with little feeding value, but during his talk, Mr. Bushby had laid stress of the value of grazing grass during this period, and this arose as one of the main points of discussion. The speaker said that during April/July he took about 25 litres per day from grass and then dropped by about 5 litres per month thereafter. During 1983 he had taken 8 litres per cow per day from October grass and cows were still holding condition well. He had fed slightly more in October this year than previously, but had produced more milk, and cows had neither gained nor lost more or less condition than in previous years.

Silage was available to the cows from the third week of October whenever they came in, and straw was always available right through the grazing season.

To demonstrate the value of autumn grazing, the following figures were produced from both Watson Hill and Whangs herd in 1983.

Table 3. Milk production in late summer/autumn.

	Litres	Milk Value (£)	Concentrate Cost (£)	Margin (£)
July	91952	9224	2006	7218
August	134251	14045	3304	10741
September	147986	16530	5204	11326
October	156613	18168	7656	10512

It must be remembered, however, that these figures were produced from a herd where calving was concentrated in the July/September period. With the new Milk Marketing Board pricing scheme, Mr. Bushby reckoned he would be about £43 per cow better off with his mid summer calving policy, and this should compensate for the increased co-responsibility levy.

The secret to obtaining maximum value out of grass is the cut and graze system so that there is always fresh grass available for new calved cows in July and August. In the west, grass is the crop to grow and therefore full use must be made of it. Grazing is controlled by an electric fence and because fields are small relative to herd size, a back fence is used only in the larger fields. The electric fence is not generally used after the end of September when the cows are allowed to range over a bigger area. Nevertheless, the maximum time allowed for regrowth is three weeks. No advantage is seen in using a set stocking system and if anything, this could lead to a decreased utilisation of grass. Paddock grazing systems are definitely not to be advocated - they are a lazy mans way of managing grass!

In the cut and graze system dung pats seldom causeproblems, as with the high nitrogen regime, they had virtually disappeared. Under the system there was less rejection of fouled grass. There had been an appreciable build up of worms in the soil.

Grass seed mixtures are based both on short term and long term leys. The short term leys are generally adjacent to the buildings with the aim of being down for two years. The short term leys are based on Italian Ryegrass but more recently tetraploids and hybrid ryegrasses have also been introduced with Sabrina and Augusta giving very acceptable results in combination with RvP.

Long term leys are based on timothy/meadow fescue mixtures, usually sown at the rate of 15 kg per ha timothy, 15 kg per ha meadow fescue and 1 kg per ha white clover. This mixture is palatable to the cows and grazes well and also makes very palatable and digestible silage.

The aim is to make silage with a dry matter of 25-28% and usually the Crude Protein content is 180-200 g/kg in DM and ME 10.5 MJ per kg in DM. Dairy silages all have a 'D' value of 66-68% and the aim is for a pH of 4.0. For young stock 'D' value is around 64 and if the dry matter is below 28% then the water supply is switched off to the young stock shed, because they are in straw bedded courts. This halves the amount of bedding and the stock do not seem to suffer at all.

A reliable additive (usually SYLADE) is used on the silage nearly all the time at the full rate. The cost is around £16 per cow but there is no way that it is worth risking making bad silage when milk sales figures are around £1,100 per cow. The aim is to store 9 tonnes of made silage per cow with the aim of using 8 tonnes per cow over the winter period.

Sod pulling presented a problem particularly in the early 70's and in conjunction with ICI a series of trial plots were set up to investigate whether shortage of potash was implicated in the problem. Potash was applied at various levels up to 250 kg per ha, and over about 125 kg/ha there appeared to be an improved rooting system and soil structure. Dry matter production was increased by 65% over the control plots. The trial was continued to look at the residual effects of potash, and even where initial applications had been high, after three years, levels had decreased and dry matter production was capable of being improved by further applications of potash. It is now routine to apply 150 kg/ha potash to all the grassland each year. All the cutting ground receives 125 kg/ha muriate of potash along with any other fields which require it. The remainder is made up from compound fertiliser, slurry, and hen manure which is available from the poultry enterprise.

Sod pulling has not been eliminated completely but is now estimated to be no more than 5%. Compaction is not the full answer either. Some of the worst affected areas have been subsoiled using a PARAPLOW to see whether this has any effect. Neither does grass variety appear to be implicated with the timothy/meadow fescue leys being as badly affected as the Italian ryegrass and tetraploid swards.

Slurry application tends to be a problem on a grassland farm. If it is applied in winter during frosty weather the grass tends to be killed out, and if it is left until spring it soils the grass which means it can't be grazed, or there is a danger of it getting into silage and causing poor fermentation. Most of the slurry goes on sacrifice areas and is ploughed in for re-seeds.

Do-it-yourself AI is used, which helps to keep a reasonably tight calving pattern. The aim is to calve heifers in June/July and with 100 cows normally about to calf in July and 60-70 in August with the remainder tailing off into September and October. It is reckoned that DIY AI is about 10% more successful than MMB inseminations. As yields and cow numbers have been pushed up, lameness has become a bigger problem probably due to density of stocking. Mastitis levels are not a particular problem with the cell count averaging 0.18. Cows last an average of 4-4½ lactations.

It is not contemplated that there will be any change from self-feed to easy-feed system. Self-feed is reliable with very little to go wrong which makes it much more dependable.

Recently there has been a problem with heifers loosing their calves and 2 years ago nearly 50% lost calves. Whilst the heifers had access to mineral blocks it contained no copper and blood samples indicated low copper levels. Last year heifers were injected with copper at turnout but there was still some trouble and this was eventually traced to selenium deficiency so heifers were injected with selenium at turnout and this year there has been no problem. I.R. Fraser.

UTILISED METABOLISABLE ENERGY

Much interest is centred round the use of the Utilised Metabolisable Energy (UME) system as a measure of the efficiency with which grazing and conserved grass are used on the farm. The West of Scotland Agricultural College has issued Technical Note No. 217 1984* on the subject and Dr. David Leaver has discussed its use in his recent book (reviewed on page 41).

In keeping with the times, West College staff have written computer programs to enable UME figures to be calculated for dairy, beef and sheep enterprises and after further testing these will be available in the College Advisory Area Offices.

Over a wide range of farms it has been shown that for each 1 unit of UME improvement, gross margin per hectare rises by £10-15. With the average output being round 60 GJ per hectare and the top systems attaining over 100, there is clearly room for improvement. The UME output is a useful within farm index to monitor the response of the business to changing or improved management techniques.

* Available gratis from WOSAC, Auchincruive, AYR, KA6 5HW.

SOLSGIRTH ESTATES

A visit by the CSGS to Solsgirth Estates Ltd., Dollar, 23 November, 1983.

Estate manager, Mr. J.M. Milne welcomed members to Solsgirth Estates which extend to some 1300 ha. About 150 ha are woodland, with the remainder ranging from prime arable land near St. Andrews to permanent grassland in the Dollar area. The main centre of the farming operation is at Dollar with three units, Wellhall, Burnhill and Solsgirth Home Farm being run together. The other two units, Mawmill at Cleish and Kinkell at St. Andrews, constitute the main arable block, growing most of the 290 ha of cereals, vining peas and potatoes. At Mawmill there is a herd of 50 suckler cows, and around 36 ha of hay are grown.

The main in-wintering accommodation is based on the three units at Dollar. At Wellhall there is a recently erected set of buildings providing slatted accommodation for 160 Angus cross cattle and 90 cows with their calves. There is also a silage pit for some 2000 tonnes of silage. In the winter the fattening cattle are fed silage and mineralised barley and it is expected to achieve a daily liveweight gain on 0.7-1 kg per day.

At Barnhill the buildings were erected some 20 years ago and now house 240 suckler cows with their Charolais cross calves. Again there is a silage pit holding some 2000 tonnes.

All 350 inwintered suckler cows are autumn calving and there are a further 150 suckler cows outwintered and calving in spring to the Aberdeen Angus bull. The heifer progeny provide replacements for the autumn calving herd.

At Solsgirth Home Farm there is a slatted floor building erected in 1966 which houses 300 calves with the aim of finishing them out of the shed in spring. Here there is an automated haylage tower and along with barley, expected liveweight gain is in the region of 1 kg per day. The home farm is also the centre of estate operations and the grain storage facilities and feed mill are located here.

Apart from the cattle, there is a flock of 750 cross ewes lambing in April to the Suffolk tup. Lambing percentage averages over 170 and the aim is to sell finished lambs at 22-24 kg dcw. In addition, 360 ewe hoggs are lambed with this enterprise utilising the older pasture. One shepherd normally looks after the sheep enterprise but has assistance at lambing and dipping.

The entire livestock policy hinges round the grassland management. 240 ha of silage are taken in one cut with the aim of clearing at least 15 ha per day. Silage is cut with a 3 m wide rotary mower, allowed to wilt for 24 hours then lifted by a precision chop forage harvester. No rowing up is done and this prevents any lumps in the swath with consequent uneven feed to the forage harvester. Normally around 60 ha of young grass are included in the area for silage, these being cut at a later stage, having been grazed by ewes and lambs first. The aftermaths are grazed by calves weaned in July, and the later cut fields for weaned lambs in August. Set stocking is practised on most grazing pastures down to long term leys and re-seeding is only carried out when productivity is seen to be falling.

There has been a conscious effort to improve the productivity of the upland grazing, particularly at Barnhill and where possible regeneration of existing swards by application of lime and phosphate has been carried out. This has greatly improved the stock carrying capacity. Where more ambitious reclamation is required, fields are drained then pioneer cropped with rape for one or two seasons and then direct re-seeded.

There are fifteen full time farm staff of which half are specialist stockmen, with the remainder doing stock relief work as well as other work on the farm. The whole estate is run very much as an integrated unit with efficient grassland management to keep all stock growing at productive rates.

Members of the Society would wish to record their thanks to Mr. Cyril Alexander the estate owner and to the Society chairman, Mike Milne, for showing the Society round and for providing an interesting and informative visit. I.R. Fraser.

BOOK REVIEW

'SILAGE AIDS' by Dr. Mike Wilkinson.

Published by Chalcombe Publications, Marlow, 1984. 66 pages. £3.95.

This booklet is a guide to the many silage additives now available in the U.K. 52 products are listed together with their manufacturer or distributor. The first four chapters (each of 2 or 3 pages) describes what silage aids are, when to use them, the different types available and how to assess them.

As with other such publications, this is not a 'which' report. The facts concerning each type of additive are given and it is left to the individual farmer/adviser to decide the best product for the specific circumstance concerned.
R.D. Harkess

SNIPPETS FROM THE ISLE OF MAN

J. Harris

From the Manx Grassland Society Newsletter No. 6, 1984

MAKING UP A GENERAL PURPOSE GRASS SEEDS MIXTURE

(i) Start with White Clover: 1 kilo of mixed white clovers (N.Z., Huia, S 184, Blanca etc.) is right for most situations.

(ii) Timothy - a grass with a few virtues, such as surviving on wet heavy land when other grasses fail, and growing in cold wet conditions when others won't. It heads late and is fairly leafy, but lacking in real feed quality. 1 kilo of S 48 or similar is enough, except in special situations.

(iii) Cocksfoot - a grass of poorish feeding value and one that is slow to establish, but invaluable on sandy land, and in situations where fertiliser use is going to be pretty low! S 26 is the old standby but Cambria seems better all round. Three kilos per acre where its needed, and none everywhere else!

(iv) Meadow fescue - just not suitable for a general mixture - only in special mixtures without ryegrass (ryegrass inhibits establishment).

(v) Italian ryegrass - useful for a first year hay crop, but does take up spaces better filled with perennial ryegrass. Two kilos if you have to, better to do without and use them only in special mixtures.

(vi) Perennial ryegrass

(a) Early ryegrasses - a bit of a misnomer, as this indicates early heading rather than early growth. *Early growth depends much more on fertility, management, situation and nitrogen use,* than it does on grass type.

Regardless of when an early ryegrass starts growth, and where it is grown it will start heading between 12th and 20th May. Try to avoid too much early ryegrass (say 2 kilos) except for 2 instances:

(i) In early situations where plenty of production (i.e. leaf growth) is possible before heading.

(ii) For sheep grazing, where an early tetraploid, such as Reveille, has a lot to offer, the big advantage being that sheep can eat the stems as they run up to head, and the grass keeps coming again and again.

(b) Mid season ryegrass - for quality in silage, and for early summer grazing, up to 1/3 (2-4 kilos) of the remaining weight should be of this type, with the choice between the more productive Talbot, the hardier Barlenna, or one of the many tetraploids - all of them much preferable to the original Aberystwyth S. strains.

(c) Late ryegrasses - the remaining 2/3 (4-7 kilos). S 23 is still a good standard after 50 years - no more than 10% behind the best, and 5% behind most competitors in production. The new standard variety

is however Melle, whether for grazing or for later silage. Perma is a good, very hardy alternative or addition and there is a whole host of other good ones such as Pelo, Compas, Wendy and Trani or the late tetraploids Meltra and Petra.

To summarise the mixtures,

Kilos per acre (!)

1 kilo mixed White Clover.
1 kilo Timothy (S 48?) (optional)
0-3 kilos Cocksfoot (Cambria?) (optional)
0-2 kilos Italian Ryegrass (not an expensive or persistent type)
2 kilos early perennials (Cropper etc. or Reveille)
2-4 kilos mid season perennials (Talbot etc.)
4-7 kilos late perennials (Melle or various alternatives)

SILAGE AND HAY QUALITY IN 1983

An unusual year - one that needs recording in case it ever comes round again!

The big feature was the wet spring, lasting right through till 20th May. We did not suffer in the same way as England - perhaps because we are used to it, and also we tend to be less intensive - but 1983 proved once again that a wet spring, whether early or late, never gives us the best silage.

It is a bit difficult to judge what did go wrong - but go wrong it did, consistently. It wasn't a case of poor silage fermentation - most silages were miraculously good in that way.

It wasn't even the wetness of the stuff - though dry matters of 16-20% were the rule in the early cuts, even when the stuff looked dry.

The real disappointment was the low D value of all silages cut before early June. It seemed as if the grass consisted of water, fibre, a little protein and precious little else (in a lot of cases the cows milked accordingly!) Silage cut around 25th May usually gives a D value of 67 or more - this year it was 63 or less. Just that the lack of sun for 4-6 weeks meant that soluble carbohydrates were very low, and the bit of sun in late May just gave enough sugar to turn into acid, to pickle the bit of wet fibrous green stuff that remained.

This was autumn grass grown in spring, of course - proving once again you can't grow grass on water alone!

This applied to all the earlier heading grasses - later grasses heading in June took advantage of the better weather and were not far off average by mid June, except on real early lowland farms.

By hay time the fine weather meant that grass quality had recovered. There were few field losses and hay averaged 60 D in the best haytime anyone remembers. Yet because of the poor early cut, silage also only averaged 60 D - normally it is at least 5 D above the hay.

Moral - never expect quality silage from early grass in a wet spring!

EVENING WALKS

Evening walks organised by local committee members of SWSGS, summer 1983.

Kirkcudbrightshire	:	The Drum, Beeswing, Dumfries by courtesy of Ian Wilson Esq. (11 August).
Wigtownshire	:	West Kirkland, Wigtown, Newton Stewart by courtesy of A. Marshall Esq. (18 August).
Dumfriesshire	:	Bengal and Bengalhill, Lockerbie by courtesy of R. Reid Esq. (24 August).
Ayrshire	:	Myremill, Maybole by courtesy of G. Hodge Esq. (31 August).

These informal evening walks are primarily intended to stimulate discussion and interest at local level.

The Society is indebted to each of these farms for extending hospitality to members who thoroughly enjoyed the visits and greatly appreciated the trouble gone to on their behalf.

ADVERTISERS

The continued support from Advertisers is gratefully acknowledged and members are asked to mention Greensward when replying to or seeking information on the products advertised.

BP Nutrition (U.K.) Ltd.
FBC Limited
Monsanto plc
Norsk Hydro Fertilizers
Plasti-Covers Ltd.
Sinclair McGill (Scotland) plc
Scots Timothy Seed Growers Association
Scottish Agricultural Industries plc
South of Scotland Electricity Board
The West of Scotland Agricultural College
UKF Fertilizers
West Cumberland Farmers Ltd.

Printed by W.J. Ross, Repro Services, 90 West Nile Street, Glasgow G1 2QU