GREENSWARD

Journal of the South West and Central Scotland Grassland Societies

No. 53 2012

GOLDEN JUBILEE
1962 - 2012

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Journal of the South West and Central Scotland Grassland Societies

GOLDEN JUBILEE of SOUTH WEST SCOTLAND GRASSLAND SOCIETY

No. 53 2012

FRONT COVER PHOTOGRAPH

Holsteins feeding on prize winning silage at Clauchlands, Lamlash, Isle of Arran (A & A Reid), winners of the 2011 Scottish Silage Competition.
(Photo: Howard Driver, Arran Banner)

SAC

Mr Wallace Welsh
Chairman
South West Scotland Grassland Society
J F Niven Building
Auchincruive
Ayr
KA6 5HW

Our Ref: RW/ew

14 May 2012

Dear Wallace

South West Scotland Grassland Society, Golden Jubilee 2012

I write to offer my heartiest congratulations to you and the Society on the occasion of the Society's Golden Jubilee. This is a significant milestone of which you and your members can be justly proud.

I know that SAC has had a particularly close association with the Society, with its establishment having been encouraged by staff at the West of Scotland College, and a number of SAC staff having chaired the Society over the years.

I wish you an enjoyable and successful jubilee year.

With kind regards,

Yours sincerely,

Professor Bob Webb
Chief Executive & Principal

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Silage Judge, Bob Mitchell (3rd left) presenting the BP Nutrition Trophy for Best Beef/Sheep silage.
From right, W Welsh (Chairman SWSGS), D Nelson, N Smith, (representing Sam Carlisle), P Cowan (winner Contractors Cup), Bob Mitchell, A Robertson (Best Maize silage), G Tiley (Secretary, SWSGS).
Photo: Solway Press Services, Bob Geddes

FOREWORD

In this the Golden Jubilee year of the South West Scotland Grassland Society, it is a privilege to be able to recall the activities and aims of the Founder members 50 years ago. It is an added pleasure to meet up with and talk about grassland with several of those Founder members, many of whom are still practising the best possible management of this invaluable natural resource, for their own, local and national benefit. Furthermore, many more of our current members are next generation farmers who have inherited their forefathers' enthusiasm for excellence in grassland management and stockmanship.

The basic aims of the Grassland Society, laid down 50 years ago and quoted in this present Jubilee issue, remain very much the same today. Though advances in technology and changing economics have now facilitated the pursuit of these aims.

However, it is salutary to remember that grassland farming has, and always will, depend on the growth of the basic units of production – the humble grass and clover plants!

The Grassland Society, with its combined teamwork from scientists, advisers, technology and commerce, is well-placed to help obtain the maximum from this simple beginning. As always, examples of the co-ordinated approach can be seen in the reports in this issue of the Journal. Many thanks are expressed to all who have contributed articles, to all host farmers, to SAC staff, to all sponsors and particularly to all advertisers for their support.

The high quality of publication would not be possible without the always excellent work of Lorraine Reid, SAC Consulting, Auchincruive, and of Scott McDonald, CCB, Glasgow, our publisher, to both of whom sincere thanks are due.

G E D TILEY - Journal Editor

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Past Chairman:	H McClymont, Crichton Royal Farm, Glencaple Road, Dumfries DG1 4AS
Secretary:	Dr G E D Tiley, SAC Auchincruive, Ayr, KA6 5HW
Treasurer:	Angela Henderson, c/o SAC Auchincruive, Ayr, KA6 5HW
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Co-opted Member:	A Pilkington, Central Scotland Grassland Society, Galloway & MacLeod Ltd, King Street, Stonehouse ML9 3LH

CENTRAL SCOTLAND GRASSLAND SOCIETY
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Vice-Chairman: W Waugh, North Bankhead, Avonbridge, Falkirk

Past Chairman: D Lawson, Parklea, Carmunnock, Clarkston

Secretary: A Pinkerton, Galloway & MacLeod Ltd, King Street, Stonehouse

Treasurer: K Phillips, SAC, 57 High Street, Lanark

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W Bankier, Fernieshaw, Cleland, Motherwell
G Millar, Gallamuir, Plean
R Pollock, Bonnyhill, Bonnybridge
R Struthers, Collielaw, Carluke

Co-opted Member: G E D Tiley, SWSGS, SAC Auchincruive, Ayr

THE SOUTH WEST SCOTLAND GRASSLAND SOCIETY
AN HISTORICAL NOTE
G E D Tiley, Hon. Secretary, SWSGS

While the origins of the South West Scotland Grassland Society owed much to the inspiration and enthusiasm of grassland scientists and advisers back in 1962, its subsequent development and successes were largely determined by the interest and enthusiastic support of the farmers of SW Scotland, with great encouragement from technical and commercial members.

The following excerpts from the 1962 and 1987 editions of 'Greensward' give an insight into the foundation and early days of the Society and highlight the aims and aspirations of its Founder Members. It will be seen that, even though 50 years have passed, these remain very much the same today.

This is how it all began .....

At and immediately after the Winter Meeting of the British Grassland Society, 6-8 December 1961, Dr Castle and I V Hunt discussed the possibility of forming a Regional Grassland Society in the West of Scotland. From then until the 20th February discussions were held with Principal Hendrie, Dr J A B Smith and members of the County Advisory Service.

The following conclusions resulted from these meetings.

1. That if there was to be a Grassland Society, it should be as a result of a need shown by farmers and that its direction should largely be by farmers.
2. That the decision whether to form a Society should be made at as big a meeting of farmers possible, brought about by staging a demonstration in the spring on some topic of interest.

The proposals seemed to be favourably received and plans went ahead for the demonstration which was to comprise two parts; silage – dealt with at the Hannah Dairy Research Institute and hay – at the West of Scotland Agricultural College Farm, Auchincruive. When all plans were made, invitations were sent to a large number of farmers in the four southern counties, Ayrshire, Kirkcudbright, Wigtown and Dumfries.

South West Scotland Grassland Society Foundation Day

The season played a few tricks with the arrangements for the demonstration. Most grass crops were backward, but a fine spell of weather before the demonstration allowed both the Hannah and Auchincruive to get on with their silage and hay making, and it went against the grain to pull back on the work. The field of hay set aside for the Auchincruive part of the demonstration was whittled down to about an acre by June 14th.

The weather was not promising, especially for demonstrating the advantages of wilting grass before making hay or silage on what might well be a memorable day in the history of the agriculture of South West Scotland.Sixty to seventy farmers were expected. By the previous day nearly two hundred had indicated their intention of joining. On the day itself about two hundred and fifty attended the demonstration on the morning and early afternoon, whilst slightly less than that number were able to sit through to the inaugural meeting and sign the roll as Foundation members. The inaugural meeting of the Grassland Society began at 3 o'clock with an outline of the objectives by the Chairman, Principal D S Hendrie. He introduced Mr J Watt Taylor, Chairman of the North of Scotland Grassland Society who described the working of their society and indicated the benefits to be obtained from such a Society It could be a meeting place where farmer and scientist could hammer out their problems to advantage.

Quoted from 'Greensward', Issue No1, November 1962.

> The detailed history of the Society has been regularly recorded in the 52 issues of 'Greensward'. These have recently been scanned electronically by Andrew Best and are now available on disk. A complete printed version is also to be bound in permanent form.

A message from the Chairman in 1987 J M L Milligan, Culvennan, Castle Douglas

'Tremendous changes have taken place in Grassland farming during the 25 years that our Society has been in existence. Changes that were needed, and changes that were helped by the Society. Grass has a vital part to play in farming in South West Scotland. I believe that our future depends on grass and whether it be grazed or conserved, there is scope for improvements in grassland management and, in the future, it can play a further part in encouraging the uptake of new developments. Farmers have been able to learn from guest speakers, and from new techniques, demonstrated at open days and at farm walks. It is the spread of such information that has been and will remain so important and so valuable to the Grassland farmer.

Over the years, grass has changed from something that "just grows" to become a crop in its own right, a crop that can be managed to provide a feed of the highest quality for ruminant livestock. The geographical area covered by our Society has witnessed this change, and has seen the four South West counties emerge at the forefront of progressive grassland farming. Grass will hold a critical place in the difficult economic conditions likely to pertain in the future. The Society, therefore, will continue to provide the help needed. The growing awareness amongst farmers of the Society's value, and the lively interest in its work will sustain activities over the next 25 years.

Our Society's aim for the future must be to encourage and sustain confidence in the value of grass and silage as the economic keys to the efficient production of milk and meat from home-grown sources'.

From 'A Brief History of SWSGS', Malcolm E Castle

Society Objects

The original constitution stated that the object of the Society was "to further the knowledge of the management and utilisation of grassland in all its aspects, and to provide members with opportunities for the interchange of ideas and experiences relating to the art of grassland husbandry", but virtually all the many activities of the Society in the last 25 years have fitted into this concept. "Greensward", a typical example, has always been an excellent publication in which ideas, news and views could be passed from member to member, and our programmes of meetings, discussions, lectures, farm walks and competitions have all fallen within the original objects of the Society. At an early stage our local Society was affiliated to the British Grassland Society (BGS) which was a wise and sensible step. We in our local Society gained vital links with the main Society, and the BGS obtained valuable contacts with us. With affiliation we all gain something.

Farm Visits

Throughout its history, our Society has held regular meetings on farms as a method of passing ideas and information on grassland to an ever increasing number of members. Visits to farms in our own Society area to inspect the swards, see the livestock and to have a friendly discussion have always been an undoubted success. Members are deeply indebted to the many host farmers who have so kindly allowed us to visit their farms. The hospitality of the wives and families of our hosts has always been appreciated; indeed, grassland discussions tended to improve with the numerous cups of tea, scones, pancakes and home-made cakes!

Competitions

The major competition within the Society has always been the silage competition which was held for the first time in 1973-74 and won by M Milligan, Culvennan. Without any doubt, the competition has done much to improve silage quality throughout the south west of Scotland. In particular, it was highly rewarding in 1984-85 when the Scottish and UK National Silage Championship was won by J & W Carson, Conchieton.

The Future

Much of our past success has been due to a combination of devoted and enthusiastic office bearers supported by a loyal and keen Committee and membership. This must continue. There has always been a happy and fruitful relationship between members from farming, commerce, the advisory service and

research institutes, and again this must continue if the Society is to prosper and to achieve its original objects.

Co-operation between our various types of members must be the pattern for success in the future. We must also encourage new thinking from a generation of younger farmers who are prepared to question ideas from the past and to seek newer truths There is no room for complacency in the difficult years ahead, and there is still an enormous untapped potential in our grasslands in south west Scotland. Let us all strive to make the next 25 years of our Society an even greater success than the last.

Notable Dates in the Society's History

1962	Founding of SW Scotland Grassland Society
1963	Founding of Central Scotland Grassland Society
1964	Affiliation of SWSGS with British Grassland Society
1969	BGS Summer Visit to Scotland
1973	First Silage Competition won by J M L Milligan, Culvennan
1985	J & W Carson, Conchieton win UK National Silage Competition
1986	BGS Summer Visit to SW and Central Scotland
1988	J M L Milligan, Culvennan wins UK National Silage Competition
2003	BGS Summer Visit to SW Scotland
2011	J & A Nelson, Cogarth win UK National Grassland Management Competition

Presidents of the British Grassland Society
A President of the British Grassland Society has been elected EIGHT times from South West Scotland:

I V Hunt, W Holmes, M E Castle, J Frame, C Thomas, J D Leaver, G E J Fisher, D Roberts.

OFFICE-BEARERS OF SWSGS 1962 – 2012

Chairmen

1962-1963	Ian McI Jennings, Shiel
1963-1965	D Bruce Jamieson, West Glenstockdale
1965-1967	Robert W Montgomerie, Lessnessock
1967-1968	John G Marshall, Hardgrove
1968-1969	Adam Gray Jnr, Ingleston
1969-1970	Hew O Chalmers, Craigencrosh
1970-1972	Alan A Buchan, Ladykirk
1972-1974	Robert Graham, Kirkland
1974-1976	Andrew J M Brown, Roberton
1976-1978	Tom C McCreath, Garlieston
1978-1979	John Lamont, Gorsehill
1979-1981	W Stewart Jamieson, Kirkland
1981-1983	Robert J R Ramsay, Lodge of Kelton
1983-1985	Jim S Watson, Creoch
1985-1987	J Michael L Milligan, Culvennan
1987-1988	J Watson, Hannah Research Institute
1989-1990	R I R Evans, Penkiln
1991-1992	J Forrest, Meinfoot
1993-1995	J Marshall, Auchenleck
1996-1998	A H Borland, Altonhill
1999-2002	H M Parker, Inchparks
2003-2005	A Gray Jnr, Ingleston
2006-2009	H McClymont, Crichton Royal Farm
2010-2012	W Welsh, Warnockland

Secretaries

1962-1975	Idris V Hunt, Auchincruive
1975-1979	John Frame, Auchincruive
1979-2012	Gordon E D Tiley, Auchincruive

Treasurers

1962-1982	Malcolm E Castle, Hannah Research Institute
1982-1985	Jim S Chalmers, Auchincruive
1985-1987	Rod F Gooding, Auchincruive
1988-2012	Angela Henderson, Auchincruive

Editors of Greensward

1962-1976	Idris V Hunt, Auchincruive
1977-1987	Ronald D Harkess, Auchincruive
1987-1994	David Reid, Alloway
1995-2012	Gordon E D Tiley, Auchincruive

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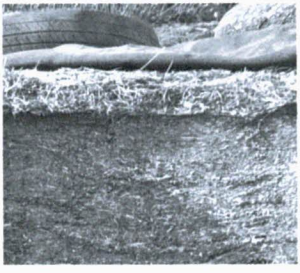

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ATTENTION TO DETAIL IS THE KEY TO SUCCESS

Dave Roberts
SAC Dairy Research Centre, Crichton Royal Farm
President, of the British Grassland Society 2009-2010

As President of the British Grassland Society I had the privilege to meet some of the best grassland and forage crop managers in the UK. It is interesting to speculate on what makes them better managers than the average farmers, especially when management is taken not just in terms of crop utilisation but the profitability of their farming systems. I am convinced that the difference is 'attention to detail' not only in the growing of the crops but how the crop is utilised, what supplements are required, the true costs on their own farms and marketing their product. I know it is popular to promote one particular type of system and insist that that is the only way for a particular farming enterprise. However I do not agree. For various reasons a farmer may decide on a particular system, the reasons may not always be associated with profitability but rather lifestyle or a system which they find particularly interesting. This is fine provided the points mentioned above are all taken into account. There are then a whole range of systems which can be profitable. What I have noticed is that if any of these points are not considered then what should be a profitable business can become an expensive hobby.

The British Grassland Society has always included a whole range of crops not just conventional grasses but also legumes, maize and herbs. I think it is right to keep the title British Grassland Society but I am pleased to see the activities of the BGS and local grassland societies spread out into other areas which are equally important to farming today: these include marketing of our products and emphasising the benefits which can occur with forage based systems such as higher proportion of the beneficial unsaturated fats and lower carbon footprint associated with long-term or permanent pastures. Another area which I think we have neglected to the detriment of our crops and farm profitability is the need to have a good, healthy soil. We are lucky at Crichton Royal Farm to have relatively easy to manage sandy loams but we like all other farmers need to pay more attention to the health of our soils. I get the feeling that there is a realisation that 'conventional' farmers can learn a lot from organic farmers about soil management and I hope that this will be a focus for grassland societies in the next few years.

As well as not just being concerned with grass, the BGS is also not concerned only with cattle and sheep. One of the most interesting meetings I attended was on grassland management for horses. Whilst many of the requirements are completely different, especially with the horse not being a ruminant, I think that there are opportunities to improve horse management by carefully introducing better grassland management. The meeting was held in Norfolk and one of the major issues they have to deal with is horses being over fat since they do not get enough exercise and are fed too high a quality ration.

A new initiative started in my Presidential year was 'The President's Event' and I am pleased to see that this has been continued by my successors. The idea behind this was that the BGS President organised an event which was of particular interest to him or her. Our group of 15 visited the research centre at Moorepark in Ireland to see the wide range of research work underway. I am pleased to say that since then the number of joint projects between SAC at Crichton Royal Farm and Moorepark staff has increased.

In conclusion, it was great honour to be asked to be President of the British Grassland Society and to follow in the footsteps of other members of South West Scotland Grassland Society who have been BGS President including I V Hunt, Bill Holmes, Malcolm Castle, John Frame, Cled Thomas, David Leaver and George Fisher. I wish the members of South West Grassland Society every success and hope that we continue to make the most of the forages we can grow in this part of the world.

NEW BGS DIRECTOR

On the retirement of Jessica Buss, BGS have appointed **Lois Phillipps** as new Director, wef. July 2012.

Lois has served the BGS as Honorary Secretary and has a background in science, research, education and agricultural training. She has worked with IGER, Elm Farm Research Centre, Natural England and Defra and has managed training for the Rural Business School at Duchy Cottage and in her own consulting business.

Lois feels the BGS must be in the forefront to provide the best knowledge available to all grass and forage based businesses, covering all aspects of grassland farming systems, trade, research, knowledge transfer and advice. "*BGS should be a one-stop shop for high quality information, guidance and training in the grass and forage sector*".

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GRASS, CHEESE & CIDER
BGS Summer Meeting in Somerset and Devon, 3-6 July 2011
G E D Tiley

The 2011 BGS Summer Meeting was hosted by the Somerset, Devon and North Devon Grassland Societies. Some 150 delegates visited seven farms with a variety of enterprises: dairy, sheep and beef, and with a considerable range of environmental conditions in one of the most southerly areas of UK.

Devon has coasts to the north and south and has mild winters, warm summers but late springs in the north due to the cold sea. An undulating landscape skirts extensive moorland (Bodmin, Exmoor and Dartmoor, which extends into Somerset). Rainfall averages 1000mm but can be erratic in the south. Soils range from rich red loams to wet acidic clays, sands and peat on the moors.

Somerset has wider areas of flat land including the Somerset Levels, an extensive wetland area. The Quantock and Mendip Hills plus Exmoor rise from the lowland areas. Rainfall averages less (700mm) than in Devon but is better distributed. Soils are mostly marine clay on the Levels and clays/loams elsewhere, and well-suited to grass production.

Somerset Farms

Electronic Tags from Exmoor Wheddon Cross, Minehead *(Richard & Carolyne Webber, Emma & James)* Shearwell Data – Animal Identification and Management Systems has its offices and workshops on the farm in the Exmoor National Park, producing EID (electronic identification data) tags and software for livestock identification and recording. The business evolved from Richard's involvement with EID trials in the 1990s. Shearwell was originally a shepherding company providing services worldwide. The farm has been secondary to the Shearwell company but from an initial 24ha, 260ha are now farmed up to 300m on Exmoor. 1200 North Country ewes are kept, with a lambing percentage close to 200%, plus 50 Limousin sucklers and 34 bulling heifers. 18ha cereals are grown for urea treatment and feeding to the stock.

Processing and retailing milk from an indoor herd Gundenham Farm, Wellington (*John, Heather and Ian Cottrell*). The family run a processing and retailing business to maximize milk price. Because a main road separates most of the land area from the steading, low cost grazing could not be practised. Instead the greater part of the 350 Holstein Friesians is housed all-year on sand-bedded cubicles. Only dry cows and some low yielders have access to grazing. Over 4 million litres of milk are retailed annually including doorstep, hospitals, hotels and restaurant outlets. The farm lies at 67m above sea level with sandy loam soils. The total of 202ha includes 81ha grass, 81ha maize, 24ha winter wheat, 10ha

lucerne, 6ha potatoes. Medium term (3-4 years) leys rotate with wheat and maize. Herd average 9000 litres, at 4.4% fat, 3.33% protein, margin over purchased feed 16.1p litre^{-1}.

North Devon Farms

Robots to improve Quality of life Higher Clovelly, Bideford (*John & Steve Davey*). Two herds were amalgamated to a milking herd of 392 cows. These were split into 3 management herds, one mainly heifers, of 120, each with two robots. Group size was critical to obtain optimum milkings per cow and best yields. 150 replacements kept per year; crossbred steers sold as stores. The farm lies at 206m with a high rainfall (1750mm). Total area 324ha, 190ha grass mainly permanent pasture; 48ha wholecrop. Cows housed all year, only youngstock grazed. Milk yield 9762 litres. Slurry applied by trailing shoe, 11,365 litres ha^{-1} for first cut plus 87.5kg N ha^{-1}, 9092 litres ha^{-1} for second cut plus 240kg ha^{-1} of 27/5/5. Family labour 5.5 plus 2 full-time employees. All field work on farm except picking up silage.

Extended lactations in a large herd unit Middiford, Barnstaple (*Tony Dallyn*). 1000 cows are kept on 166ha plus rented land in a high rainfall (1750mm) area. Cows are not served until at least 200 days after calving, heifers 300 days, to reduce stress around calving for cows and staff. 200 Guernseys and 200 Jerseys are milked separately for a Channel Island milk contract. Silage is cut early before entering rotational paddock grazing. Clover seed is included in reseed mixes and also fed to cows for spreading *via* slurry, which is injected. No P and K purchased. Milk yields: Holsteins 7,100 litres; Guernseys 5,100 litres, Jerseys 4,500 litres. Dry cows kept on a separate farm. Fodder beet grown on 32ha rented ground and maize bought in.

Devon Farms

High clover swards to finish Quality beef and sheep Swanaton, Sandford, Crediton (*Jim, Karen & Jonathon Stephens*). Great emphasis is placed on sward management for maximum content of clover, although in a NVZ. Grass is kept well-aerated with a sward slitter and harrowed. Spring N as CAN at no more than 50kg N ha^{-1} and grassland is limed every year. Clover seed is mixed with barley for finishing cattle from June to August. Stock are grazed rotationally moving at least once a week and stocking rates are carefully controlled. Lambs from the 800-ewe flock achieved growth rates of 300g day^{-1}; singles could finish at 11 weeks, twins at 12 weeks. 400 purchased cattle finish at a target growth rate of 2kg daily. High quality beef sold to local butcher and supermarkets. Farm area 271ha, permanent pasture with 5ha fodder beet and 5ha maize. 183-200m above sea level with moderate (850mm) rainfall.

'Graze and Maize' to give high yields from Forage Town Barton, Sandford, Crediton (*David Munday*). Rotational paddock grazing in spring and summer with 90% maize diets in winter ensures high yields (4,400 litres) from forage in a simple system at Sandford. David saw this system in a visit to Brittany. Cow numbers on this 142ha farm have expanded from 130 to 180, ready for son Jack to join the business. Milk yield 7,300 litres feeding 0.18kg litre^{-1} concentrates. Cropping was 40ha maize, 40ha permanent pasture, 40ha long term leys, 12ha short term leys, 8ha turnips/kale, 20ha cereals (sold). Being in an NVZ the total N used (250kg ha^{-1}) is applied in small doses monthly. Manure and slurry used mainly on the maize. No P and K applied. Swards are monitored to identify under performing fields for reseeding, when the aim is to add clover and increase production and quality. Rainfall 850mm, altitude 117m. Calving mostly in autumn. David hosts BGS Nutrient Wise demonstrations.

Grazing cows 365 days a year at 1000 feet Bridford, *Exeter (Pete & Di Wastenage)*. Bridford is one of 4 units run by Pete in a family partnership, aiming to employ the same system across all units for simplicity. The challenge was to transfer a successful organic system at Budleigh Salterton at sea level to Bridford at 300-368m, 1500mm rainfall on the edge of Dartmoor. Farm area 134ha, mostly long-term leys, some permanent pasture, 30% clover; 8ha of wholecrop cereal. Cow numbers 240, aiming for 300; crossbred NZ Friesian x Jersey x Dairy Shorthorn. Replacements reared outdoors on a Budleigh Salterton farm. Cows graze all year on paddocks with rising-plate measurement. They are moved daily in winter on a 60-70 day rotation. Silage and concentrates (1 ton year^{-1}) flat-rate fed in parlour. Grass is allowed to grow rather than cut for silage to 'store' it for winter grazing. Herd milk average 5,365 litres. Nutrient sources: N - clover only, P – none applied, K – organic sulphate of potash on 24ha.

BGS SUMMER MEETING 2012
8-11 July, South West Wales

The 2012 BGS Summer Meeting will be hosted by 5 neighbouring grassland societies in South West Wales – Cardigan & District, Carmarthen, Cleddan, Narbeth and North Pembrokeshire. Nine farms with excellent grass management will be visited. As SWSGS, Narbeth celebrates 50 years in 2012.

CENTRAL SCOTLAND GRASSLAND SOCIETY
SILAGE COMPETITION 2011

Silage Judge: A Reid, Glen, Falkirk

Prizes were awarded as follows:

HF Seeds Cup & 1st Prize	R McNee, Balmitchell Farm, Avonbridge
Dairy Silage:	
1st Prize	J Pollock, Bonnyhill, Bonnybridge
2nd Prize	J Graham, Couch Farm, Harthill, Shotts
Hamilton Reco Salver for Best Beef & Sheep Silage:	R McNee, Balmitchell, Avonbridge
2nd Prize:	J & J Bannatyne, Drumalbin, Carmichael, Biggar

CSGS FARM WALKS 2011

CSGS visited two farms in the Borders on 24 August 2011

J P Campbell & Son, Glenrath, Kirkton Manor Estate, Peebles.

This includes a large hen unit with commercial sheep, pedigree Suffolk and Blackface sheep and a suckler herd.

James Stewart & Partners, Upper Kidston, Peebles

An organic farm rearing pedigree Shorthorns and commercial sheep.

The Central Scotland Grassland Society thanks the two hosts for these very interesting and impressive farm visits.

SWSGS PRIZES 2012

The **SWSGS Vice-Presidents' Prize** for the best 2nd year student in Grassland subjects was awarded to **Robert MacKinnon** from **Kintyre**. The prize was presented by SAC Principal Bill McKelvey at the Student Awards Ceremony held for the first time in the new University of the West of Scotland Campus at Craigie, Ayr in November 2011. The Society offers Best Wishes to Robert for this award and for the future.

The Malcolm Castle Memorial Prize for the best grassland dissertation in all the SAC campuses was awarded to **Sam Henderson, Burnside of Dardarroch, Auldgirth, Dumfries**. The study compared Round and Square baling methods for wrapped silage, with reference to bale density, fermentation quality and plastic use (see opposite page for a summary of the results). The prize award consisting of the Malcolm Castle Trophy plus a cash award was presented at the main SAC graduation ceremoney for all campuses. This was held in the Bute Hall of Glasgow University, 8 July 2011. The Society sends congratulations to Sam and Very Best Wishes for the future.

FEEDING THE WORLD FROM GRASS
Robert MacKinnon, winner of SWSGS Vice President's Prize 2011

Living and working on the Kintyre Peninsula, I have always appreciated the importance of grass on farms whether they're beef, sheep or dairy. Through studying at SAC, I have understood much more about its growth and potential as well as the management decisions which need to take place long in advance. With ever increasing fertiliser prices and fuel costs as well as the environmental impact, it is no longer feasible or acceptable to apply excessive quantities of inorganic fertiliser to grassland to get it to grow. Maintaining the correct nutrient and pH levels in the soil allows the grass to maximise its yields. There is also the need to grow young grass leys which respond quicker and are more efficient at utilising the nutrients available. The world population is forecast to reach 9 billion by the year 2050, meaning that there will be a greater emphasis on producing food from the same area of land. This is a great opportunity for us to lead the way in food production by ensuring we maximise the output from the land, whilst continuing to be sustainable to allow future generations to continue to produce quality food for generations to come. I was extremely happy to receive the SWSGS prize through SAC Ayr. Before coming to college, I wasn't sure that I was making the right choice as I had been working full-time on a farm for 3 years. However, now in my third and final year of study I can honestly say that it has been one of the best decisions I have made. The lecturers at SAC are very knowledgeable with the latest technology and farming methods being taught which has developed my overall knowledge of a wide range of subjects. The grassland subjects have been extremely useful to me and being awarded this prize shows that it must have sunk in! Thank you.

A COMPARISON OF ROUND AND SQUARE BALING METHODS FOR WRAPPED SILAGE WITH REFERENCE TO BALE DENSITY, FERMENTATION QUALITY AND PLASTIC USE

Sam Henderson, Student, SAC Auchincruive

Farmers are looking to produce the best quality bales at the lowest cost possible. The aim of the investigation was to compare round and square baling methods for wrapped silage with reference to bale density, fermentation quality and plastic use. The results from the investigation may influence a farmer's decision in which baling method to adopt.

To do the investigation many silage samples of different dry matters and bale types were collected and then paired for non fermentation related characteristics. This allowed for fermentation characteristics to be analysed for significant differences.

Pairing procedure: Round and square bale samples were matched together by using non fermentation related characteristics, such as protein content, ash content, D value and dry matter content, the latter being one of the key factors for pairing. These silage characteristics were used as they are not affected greatly by the influence of fermentation processes but are more influenced by the physical state of the crop when ensiled. The accuracy of the pairing was further improved by taking into consideration the way the crop had been harvested. For example bales were required to have no additive, and were not to be chopped. Round bales with only four plastic layers of wrapping could be used and square bales with six plastic layers.

Many bales for both bale types were also weighed and measured at different dry matter contents to allow for density calculations to be made. Bale plastic consumption was weighed and recorded for each bale. Square bales were found significantly higher in ash content as well as being significantly lower in ammonia nitrogen content. There was, however, no overall significant difference in fermentation quality between bale types.

As crop dry matter increased above 20% the differences in dry matter density between round and square bales increased with square bales becoming significantly denser. There was also a significant difference found in plastic consumption per kg dry matter. For high dry matter bales of around 50% there was found to be only a marginal difference in the required plastic needed to wrap the same quantity of fodder dry matter for both round and square. Over all, if a farmer was to get an agricultural contractor to bale his silage, round bales were found more cost effective for low dry matter crops. There was, however, little difference in price between bale types for high dry matter. As a result, other factors such as ease of handling and bale transporting may be the deciding factor between choosing bale types.

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SWSGS SUMMER FARM VISITS – AYRSHIRE

Visits to **Aird**, Hurlford, Kilmarnock (By Invitation: *Alister Neil*) and **Dumfries House Estate**, Cumnock (By Invitation: *Andrew Robinson, Farm Manager*) on 29 June 2011

Visits Sponsored by ***Agrovista UK Ltd*** and ***Barenbrug UK Ltd***

G E D Tiley

Aird

The morning visit was to Aird, a farm near the outskirts of Kilmarnock on a dry day at the end of a very indifferent month of June. Here paddock grazing is practised using 18 paddocks of 1.6-2ha. In 2011 grazing began on 7 April but would have been earlier if the weather had been better. Grass growth was measured weekly with a plate meter and the cows begin grazing when 2,200kg ha^{-1} DM is reached. 5 paddocks were shut up for silage following rapid growth in April. Stocking rates were $9ha^{-1}$ until 1st silage cut, reducing to $7.5ha^{-1}$ until 2nd silage cut.

Paddocks had 2 gates to reduce poaching at the shoulders of the year. Troughs were also sited away from the gates. TMR was required to balance the grazing for cow fertility. Dry cows were fed a straw ration and followed the milkers on the paddocks. The aim was for a level plateau of milk production through the year which earned a bonus and cows were calved all year round. Farm area is 140ha, in 2011 with 22ha spring barley, 10ha winter wheat and 11ha maize. Altitude 50-100m; soils varying from sands to clay with some peat. First cut silage was taken from 56ha, second cut from 48ha and third cut from 40ha. Grazing paddocks occupied 40ha. Total cows number 200 Holstein-Friesians, all crossed with Simmental and all progeny sold as 13-15 month old stores. Young stock were all purchased as freshly-calved heifers, but the variable quality of bought-in heifers was a problem. High quality (74D, ME 11.9) silage had been made for both 1st and 2nd crops, aiming to cut early. This gave lighter crops which, however, were easier to handle with less pressure on machinery and trailers, also taking less time to harvest. After a very good early start the maize crop had been held back by cool temperatures in May and June. The crop was sown 13-14 April, variety Pioneer B43, under polythene (not pinhole which allows rain to penetrate); manured with slurry only, no fertiliser. Grass reseeds were always direct sown, without clover as dock control was necessary.

Cameron Ferguson, Agrovista, recommended reseeding every 6 years unless autumn conditions were unfavourable. If sward performance was declining the species composition should be checked. Then if ryegrass was abundant the soil should be checked. Young swards gave a yield advantage, this being more relevant now that fuel and fertiliser costs were high (see p29). Maximum use was made of slurry as a manure, a 7-month capacity store allowing spreading during spring and early summer for optimum nutrient value. A trailing shoe machine was

demonstrated during the farm walk. This had to be used in the paddocks where the umbilical system was unsuitable. The primary aim was to place slurry under the sward to avoid smell and to more fully exploit the nutrient value; 3000 gallons (13,500 litres) of slurry was equivalent to 30kg N; the trailing shoe was 50% more efficient than the splash plate; a disc machine was 70% more efficient, but stones were a problem.

SWSGS thanks Alister Neil and father Jim for this farm walk and for the opportunity to view the forward-looking management being practised, stimulated by a visit to New Zealand. Members much appreciated a soup-and-roll lunch provided by The Bakery Box, Ochiltree.

Sponsorship by ***Agrovista UK Ltd*** and ***Barenbrug UK Ltd*** is acknowledged.

Dumfries House Estate

A brief visit was made in the afternoon to the refurbished farm steading and nearby fields of Dumfries House Estate. The current manager, Andrew Robinson, had arrived in January 2011 from a beef farm in Oxfordshire. Morrisons Farms had been involved for a couple of years. Previously the land had been run down for some 25 years with a loss of soil structure and lowered pH. A programme of improvement had begun, beginning first with construction and improvements of the buildings. Under the guidance of HRH Prince Charles, there was a preference for native breeds and removal of all slatted courts. The herd of 140 black cows would be phased out to make way for Aberdeen Angus and pedigree Shorthorns. Sheep breeds were still being considered, such as Cheviot and Suffolk x.

The farmed area totals 340ha, all grass, with 14ha barley for crimping and 23ha spring wheat, undersown with a mixture containing white clover. Silage of high DM is required, aiming for quantity rather than quality, due to the high cost of straw. The bedded courts are mucked out every 6 weeks though a longer interval is desired. The cows are synchronized for AI aiming to calve early-mid March for optimal use of grass when turned out. A new 50m x 10m silage pit had been constructed with earth walls, in which both first and second silage cuts could be stored.

SWSGS thanks Andrew Robinson and Dumfries House Estate for the hospitality of a farm visit early in its development.

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THE VALUE OF NEW GRASS VARIETIES

Dr Trevor J Gilliland
Head of the Plant Testing Station, Crossnacreevy, Agri-Food and Biosciences Institute (AFBI), Northern Ireland

Evening Meeting, Douglas Arms Hotel, Castle Douglas, 25 October 2011
Joint with Stewartry Agricultural Discussion Society

Meeting sponsored by ***South West Seeds Ltd*** and ***Barenbrug UK Ltd***

At this joint meeting of SWSGS and the Stewartry Agricultural Discussion Society, Trevor Gilliland gave a succinct and stimulating survey of the often complex and lengthy work which occurs before grass and clover varieties can be offered for sale to farmers. In a nutshell, the detailed testing and monitoring programme gives a solid assurance and protection so that the buyer can be completely confident that the variety sold is what it says it is on the label.

Variety Testing

Every year in Northern Ireland around 40 new varieties are put forward for testing. In the development of a new variety there is a very long time scale of 17 years from an initial cross to the production of seed for sale. This involves early testing, selection, stabilization and multiplication before undergoing National List trials, followed by further multiplication. At the end of the testing process Recommended Lists are drawn up for the different regions of UK. These define performance, give a quality control and ensure continual improvement. Over a 20 year period, annual DM yields of grass varieties have increased by 36% (34-38%), equivalent to 1.8% per year; D-values increased by 12 units.

Reseeding Value

The continual improvement of yield and quality lends support to the value of Reseeding. However, reseeding costs are rising sharply, particularly in fuel and fertiliser, and proportions of grass under 5 years old have reduced since 1990. Increasing prosperity in Asia led to higher demands on fertilisers, in turn producing greater yields so that higher input prices can be afforded. Global demand for fertiliser is also boosted by increased acreage of crops for biofuels.

Total reseeding costs in N. Ireland have risen from £357 ha^{-1} to £400-450 ha^{-1}, mainly from higher fertiliser and seed costs. Annual costs of reseeding equate to:

£80-90 $year^{-1}$ for 5 year silage swards
£55-65 $year^{-1}$ for 7 year silage/grazed swards
£40-45 $year^{-1}$ for 10 year grazed swards

A farmer cannot economically justify the cost of feeding poor pastures with expensive fertilisers and supplementing with ever more expensive concentrates.

Economics of Reseeding

A straight line relationship has been made between grass utilized and net profit per ha. Profitability could also be related to level of reseeding on a farm, the effect being greater at higher milk prices. A greater proportion of annual reseeding, as would be expected, leads to greater production.

Key factors in the economics of reseeding were:

- Amounts of grass grown and utilized
- Stocking rate
- Length of grazing season

Figures for N.Ireland dairy farms were:

	Efficient Farms	**Average Farms**
DM Utilization	12-14t	7.4t
Stocking Rates (LU ha^{-1})	>3.0	1.8
Length (d) of grazing season	280	210

The Ideal Grass Variety

A survey revealed some of the characteristics desired in a grass variety. Good spring DM yield, good autumn DM yield – most important for beef animals, good quality (D value) and good persistence. Example figures would be: grass production of 17-18t DM ha^{-1}; organic matter digestibility of 82-86; protein level 17-20%, NDF of 350-450; DM 15-21%; green leaf mass of >80%; grass intake 18-20kg DM cow^{-1} in mid-season. Grass with no re-heading, high nutrient efficiency and persistence for 7-10 years.

Farm value of differences between varieties

Yield and quality differences between varieties can lead to increases in monetary returns. Thus where there is a **yield** difference of eg: 1t DM ha^{-1} between 2 new varieties under either a silage or grazing management, this can equate to a cash increment and is greatly superior to returns from old pasture. Improvements in **quality** will also influence milk production.

Thus grass DM intake from grazed grass increases 0.2kg cow^{-1} day^{-1} with every increment of 1 unit of D-value, with an associated milk yield increase of 0.4l cow^{-1} day^{-1}. Similar milk production increments from increased D-value are possible from silage. Varietal differences may also result in extension of seasonal grazing. Improvements in either spring or autumn grazing yields, allowing additional grazing time, eg: of 3 hours per day, could lead to DM intake increments of 4kg raising milk output by 2l day^{-1}.

Conclusion

Herbage production and farm profitability will be increased by reseeding, the amount dependent on product (meat/milk) price. The higher the rate of reseeding the greater the profit to the farm enterprise. Improved grass utilization, through stocking rates and length of grazing season results in increased profitability. Considered nationally, levels of herbage production and utilization are below potential. The low level of reseeding is contributing to this.

As least cost production is vital to sustainability and grazed grass is the cheapest feed followed by silage, **a regular reseeding strategy is NOT A COST but A SAVING to the business**.

Farmers should look to see which varieties are in a seeds mixture and **CHECK** these are from the **SAC Recommended List**.

PRO 90 THE CONCENTRATE ENERGY TRIGGER FOR DAIRY COWS AND CALVES

Peter Jefferis, Realistic Agri, Telford, Shropshire

Pro 90 in its different forms, when fed as part of a structured feed programme, is a highly cost effective product, especially so where the farmer is looking to successfully manage a high forage feeding system. At calving, cows suffer from a severe drop in blood glucose which depresses appetite and affects liver function. A cow yielding 30 litres a day needs 2000g of glucose per day. The most she can obtain from food and its resultant metabolism is 1300g. The balance drawn from tissue reserves.

Pro 90

1 Stimulates overall dry matter intake, principally forage, hence increased energy and protein supply.

2 Enables efficient and importantly, safe metabolisation of body fat reserves for milk synthesis, without the formation of ketone bodies in the liver, or high betahydroxybutyrate levels in the blood.

3 Gave an average 5.7% response in lactation yield in the UK and Northern Europe. This is primarily due to greater persistency of yield in mid/late lactation.

4 Largely controls clinical and most importantly the largely undetected sub-clinical Ketosis, with consequent reduction in yield.

5 Improves vitamin absorption because vitamin solubility is enhanced with fat based products like propylene glycol. Furthermore, microbial activity in the rumen is improved in relation to fibre digestion, ie: more efficient use of grass/silage.

6 Gives positive benefits in terms of fertility and conception due to the complete and efficient conversion of fat reserves. Where fat mobilisation is incomplete, interference with the reproductive cycle is frequently apparent.

7 Components rapidly convert blood glucose, which in turn stimulates production of growth hormone, which it is well established has a direct benefit of increasing milk yield.

8 Due to the removal of stress factors as indicated above, produces general wellbeing and herd health.

Feeding

Pro 90 dairy is available in liquid and meal form, and is recommended to be fed for six weeks post calving.

liquid at 0.15 litre/cow/day
or meal at 0.5kg/cow/day

Alternatively, Pro 90 Dairy can be fed at 0.10 litre/cow/day for the first 100 days of lactation.

Dry Cows

This group should be fed Pro 90 Dairy for two to three weeks pre calving at half rate. Feeding at this level will stimulate liver function, enhance forage intakes and prepare the cow for lactation. Pro 90 can also have a dramatic effect on fertility.

Control Group				
No of Cows	**No of Services**	**Heat**	**First Service**	**Conception**
17	2.24	59.6	62.4	109
Trial Group				
14	1.37	43.8	58.5	88.4

Trial group fed Pro 90 required 0.67 fewer services (29.9%) and conceived 21.1 days earlier than control. Blood B-BH Butyrates were 1.295 n the control group and 0.963 in the Trial Group. This can relate to returns of £70-94 per cow.

Realistic Agri Tel: 01952 433644; Fax: 01952 433805; Mob: 07860 821261
Email: peter@realisticagri.com
The Old Chapel House, Madeley Road, Ironbridge, Telford, Shropshire TF8 7QZ

SCOTSHEEP – 6 JUNE 2012

The National Sheep Association's triennial event, SCOTSHEEP, was held in Ayrshire this year, at the Dumfries House Estate, Cumnock on 6 June 2012. The Bank of Scotland is the event's main sponsor. All the latest developments in the sheep industry were on display in record numbers of trade stands, sheep breed societies and other exhibits. Features included advances in genetics, technology, health management and husbandry, and also stock judging, sheepdog trials, ATV competitions, shearing, demonstrations and seminars. SAC highlighted:

- 'Shepherd Right' – special courses on sheep recording and training.
- Reasons why fluke and worm drenches are not working.
- Information on Schmallenberg virus.


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P Cowan (right) receiving the Limagrain Cup for the Best Contractor Silage from Silage Judge, Bob Mitchell at SWSGS Competition Evening (page 45)
(Photo : Bob Geddes)

Scottish Silage Judge, Jim Brown (third left) presenting the SWSGS Silver Rosebowl to Stuart Reid (right). L-R: G Tiley, A Reid (pages 45,53)
(Photo : Howard Driver)

Parlour at Boreland Farm, showing Compressed Air Activated barrier (page 37).
(Photo : Bob Geddes)

SWSGS WINTER FARM VISIT – KIRKCUDBRIGHT

Visit to Boreland of Balmaghie, Castle Douglas, 15 December 2011

(Invitation: W R Wilson & Sons)

Visit sponsored by **Tarff Valley Ltd**
G E D Tiley

In an otherwise very inclement, often stormy, December, the sun shone on the visit by the South West Grassland Society to Boreland of Balmaghie, Castle Douglas. Society Chairman, Wallace Welsh, welcomed nearly 100 members to this recently established 800-cow modern dairy unit. The visit was supported by Tarff Valley, and a soup lunch supplied by The Thistle Inn, Crossmichael.

Boreland is part of the enterprise of W Wilson & Sons and is run jointly with the 1000-cow unit at the home farm, Mayfield. Management is closely co-ordinated between the father, Ronnie, and his two sons, Peter and Andrew. Peter manages the dairy cows on both units while Andrew looks after all the other stock.

The visitors to Boreland saw contented and clean cows which are housed all-year in a well-designed cubicle house and bedded twice-daily. The 40/80 herringbone parlour allows cow-presentation at a 50° angle which was found to be optimum for efficient milking. A novel feature was the compressed air-activated holding barrier which allowed the line of 40 animals to be released from the parlour in 7 seconds!

Milking is twice daily at 12-hour intervals and the cows are well-adapted to a regular management, where primary attention is given to foot health and cow fertility. Diet is based on high dry matter, high quality silage cut from 1400ha (3500 acres) in 3 cuts annually, wilted for 2 days to achieve high DM, and stored in large covered clamps. Three 1-million (4.5 million litre) gallon towers provide slurry storage. The dairy herd consists of specially selected medium size Holsteins. Average milk yields are 8,500 litres, aiming for high milk solids and sold Quality Assured to Lactalis for cheese manufacture. All youngstock are reared and some 500 steers are fattened annually.

Cost reduction and simplicity of operation, aiming for profitability, were central in the design, development and management of the Boreland unit. It represents a significant investment, creating local employment in South West Scotland.

The Society wishes to thank Ronnie Wilson and family for this impressive and interesting visit and wish them all well in the future.

Tarff Valley are also thanked for their sponsorship, and the Thistle Inn, Crossmichael for supplying the soup and roll lunch.

SOIL COMPACTION AND SLURRY USE EXPERIMENTS AT CRICHTON ROYAL FARM

Paul Hargreaves & Christopher Henry
SAC Dairy Research Centre, Crichton Royal Farm, Dumfries

In June of last year (2011) SAC, as leader in a research partnership, won a prestigious contract for grassland and forage work with DairyCo. A significant aspect of the research is focused on soil and will be based at the SAC Dairy Research Centre. There are two main experiments underway at the moment; one related to the effects of soil compaction which has been running since October 2011 and the other with the use of slurry and separated slurry to fertilise grassland, started in February of this year.

These experiments will provide data on i) the effect of accumulated soil compaction on grass yield and gaseous N loss by N_2O, and ii) the more effective and efficient use of slurry.

Soil (P Hargreaves)

Interest in the function of soil in the grassland farming picture has been increasing over the last few years. As fertiliser and feed prices have increased there has been pressure to utilise more grazing and to extend the period that cows are in the field. However, the closer the soil comes to field water capacity the greater the likelihood that there will be damage to soil structure by grazing cattle or heavy machinery driven across the fields. Past research has shown that even a moderate trampling event when the soil was close to field capacity can cause a reduction of between 9% to 60% in yield, depending on the severity of the trampling and soil conditions (Drewry et al, 2001, Menneer et al, 2005). Since soil compaction reduces the pore space between the soil particles this results in a reduced volume for soil microbes, and produces a space that is more likely to be filled with water. These conditions allow the microbes that breakdown nutrients in the soil to become more dominant and can increase the amount of nitrogen lost to the atmosphere, which in turn means less for the growing crop. The nitrogen is lost as nitrous oxide (N_2O) a gas that is 310 times more potent than CO_2, and greatly contributes to the greenhouse gas problem.

The soil compaction experiment has been devised to examine the effects of soil compaction by cattle and tractors on grass yield and how successfully the soil compaction can be alleviated by either surface aeration or soil lifting. Emissions of N_2O are being measured on all the treatment plots using gas chambers. Finally, a further sub-treatment will assess how effective an N-inhibitor product would prevent the activity of the microbes that produce N_2O. N would then be retained in the soil for the growing crop and the levels of N_2O reduced. The plots will be cut for silage three times over the summer and yields measured. The compaction treatments have already been imposed and have caused compaction; initial

measurements of N_2O emissions are being taken and the first fertiliser applied. Each time fertiliser is applied some plots will receive the N-inhibitor treatment. The surface aeration treatment will be applied during the spring and the deeper soil lifting will take place at the end of the silage season. All treatments will be repeated for a second year to investigate the effect of cumulative soil compaction on grass yields and on N_2O emissions.

Slurry (C Henry)

The introduction of Nitrate Vulnerable Zones (NVZs) has increased the requirements for slurry storage on farms within their catchments. Separating slurry into solid and liquid fractions has the potential to partially alleviate this problem by allowing the solid fraction to be stored in middens hence making space available for the liquid fraction in tanks or lagoons. In addition to storage benefits, separated slurry may prove to be an organic fertiliser better matched to the nutritional requirements of grassland than whole slurry (Bittman *et al.*, 2011) and allow increased flexibility of manure use within the legislative framework (Schröder and Verloop, 2010). The current research for DairyCo aims to investigate the effect of separated slurry on grass growth and grazing dairy cow performance. These effects will be compared with those of whole slurry and mineral fertiliser. Two experiments are planned for 2012. First to compare herbage growth with the three fertilisers, at three rates and two methods of application. Secondly, to investigate the effects of the three fertiliser sources on grazing behaviour, herbage intake and milk yield. Two more grazing experiments will be conducted during 2013 and 2014.

The first treatments were applied to the herbage growth plots in mid March, and further treatments will be applied following the first and second of three silage cuts. Herbage growth is being estimated weekly using a rising plate meter, and yield will be measured prior to each harvest. Grass samples will be taken before each cut for analysis of crude protein and metabolisable energy. Soil samples taken before each treatment will be analysed for mineral N and organic C content. The experiment will run for two years and during the second year the plots may be subdivided to investigate other aspects of separated slurry application such as N_20 emissions, effects on invertebrates and on silage quality. The 2012 grazing experiment will run for four months during the summer. N will be applied to grazing pasture as either mineral fertiliser, whole slurry or the liquid fraction of separated slurry. Each treatment will be grazed by twenty early to mid lactation cows, with milk yield measured daily and milk composition and body weight measured weekly. Herbage intake will be measured thrice using the n-alkane technique. Grazing behaviour will be monitored at the same time.

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GROWHOW'S NEW BLUEPRINT FOR GRASS GROWTH

Elaine Jewkes, GrowHow Grassland Specialist

Deciding which fertilisers fit best into your livestock management system can now be a little easier with the introduction by GrowHow UK of a new booklet. Entitled *Blueprint for Growth – Grass*, the booklet is, in essence, about looking carefully at the fertiliser options on an individual farm basis. Action plans can then be developed to take into account the specific requirements of the management system. The booklet outlines the principles of good grassland and forage nutrition and provides working examples of how different systems can make best use of fertilisers, together with manures. It demonstrates that avoiding 'a one size fits all approach' to fertiliser recommendations makes sense, especially with global demand keeping fertiliser prices high. There is little point in applying fertiliser to grow forage that you don't need. However where fertilisers are used effectively, the old rule of thumb that £1 spent on grassland fertiliser delivers £3 of feed value still holds good.

Whatever the production system, a well-managed sward will make a vital and cost-effective contribution to milk or meat production. If you read any of the livestock press you will regularly see evidence that grass, and particularly grazed grass, is the cheapest feed on the farm. However, it is easy to forget that grass is also a quality feed that can provide a substantial – and margin improving – contribution to milk output.

The key to a quality sward is to provide all the nutrients the grass needs. But this must be done carefully, taking into account not just costs but also legal requirements and the environment in general. As the NVZ N Max for grass falls to 300 kg N/ha in 2012, now is a good time to review fertiliser plans. Fertilisers should be used to balance the nutrients in applied manures but with a little planning this is not too difficult to achieve.

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SWSGS SILAGE COMPETITION 2011
Competition Evening of SWSGS, held in Woodland House Hotel, Newbridge, Dumfries on 2 February 2012
G E D Tiley

Sponsored by ***Pickles Agriculture,*** with *prizes sponsored by* ***Biotal Ltd, John Watson Seeds Ltd, Limagrain UK Ltd*** and ***Nickerson UK Ltd***

Silage Judge: Bob Mitchell, Drumdreel, Stathmiglio, Cupar

Chairman,Wallace Welsh, welcomed the audience to the Competition Evening. The business of the 50th AGM of the Society was first conducted. The Chairman briefly reviewed the past year, mentioning the challenges posed by the 2011 weather. The outstanding achievement of Andrew Nelson, Cogarth, Parton in winning the BGS UK Grassland Management Competition last year was warmly applauded. All host farmers, sponsors, Committee and all members who helped to make the Society's programme a success were sincerely thanked. The Society very much looked forward to celebrating its Golden Jubilee later in the year.

Silage Quality 2011 – David Owen, SAC Farm Business Services, Dumfries
Following a difficult year in 2010 when periods of drought and winter snow were a problem, the 2011 season was, as the Chairman said, even more challenging. After an abnormal burst of warmth in April there had been almost unrelenting wetness for most of the year. Dumfries recorded a record rainfall some 50% or more above average. In spite of this, some very high quality silages were made, indicating a progressively improved management of cutting and preserving the crop at the correct stage. Referring to competition averages, Table 1, quality was better than previous years. DM was surprisingly high considering the dearth of dry days in May. However, lower quality silages would necessitate boosting with additional feed. A clear message was: **Don't sacrifice Quality for Quantity!** It was also recommended to re-test silage composition through the winter, to be sure of its nutrient value, and also to test other feeds being used.

David Owen also strongly recommended regular sampling of soils to ensure better-informed and cost-efficient application of manures. Individual fields could be quite different and should be considered separately to ensure correct manuring. Avoiding environmental damage as well as the costs involved was important. Use of the PLANET fertiliser management programme, as part of SAC's SlurryMax (see p61), was a valuable guide to calculating nutrient requirements and the extent to which fertilisers could be replaced by slurry application. Monetary values and cost savings could also be indicated.

Table 1 - SILAGE COMPETITION 2011 - ANALYSES MEANS

Overall Means - Grass Silages

Group (Number)	DM (%)	D (%)	CP (%)	SIP	ME
All Dairy (81)	33.2	72.2	14.2	106	11.6
Beef/Sheep (22)	28.5	69.1	12.7	97	11.1
Big Bale (12)	48.2	68.6	13.8	114	11.1
Dairy					
Ayr (31)	36.7	72.4	14.5	112	11.6
Dumfries (15)	27.5	72.4	13.7	100	11.6
Kirkcudbright (24)	34.4	71.6	13.6	104	11.5
Wigtown (11)	28.9	72.6	15.1	105	11.6

Wholecrop and Maize Silages

Group (Number)	DM (g kg^{-1})	ME	CP (% DM)	Starch (% DM)
Wholecrop (13)	384	10.1	9.5	-
Maize (7)	345	10.8	8.7	31.7

Table 2 – 2011 Silage Competition – Short Leet Entrants

Prizes		Marks *Analyses (35)*	*Inspection (65)*	*Total (100)*
	Dairy Class			
1st & SWSGS Rosebowl	A & A Reid, Clauchlands, Lamlash, Arran	29.5	47.0	76.5
2nd	A Allison, Macnairston, Ayr	31.8	44.0	75.8
3rd	R Hamilton, Barmoorhill, Tarbolton	30.6	44.0	74.6
	J McAuslan, SAC Auchincruive, Ayr	31.2	43.3	74.5
Michael Milligan Prize	M Callander, Crofthead, Crocketford, Dumfries	26.4	44.5	70.9
	J Watson, High Mark, Leswalt	29.6	40.0	69.6
	R Broatch, Thwaite, Ruthwell	22.5	45.5	68.0
	A Nelson, Redcroft, Parton, Castle Douglas	26.9	41.0	67.9
	R Paton, Torr, Auchencairn	25.3	41.0	66.3
	J Jamieson, Upper Locharwoods, Ruthwell	21.9	43.0	64.9
Best New Entrant	M McDowall, South Two Mark, Stoneykirk	21.1	43.0	64.1
	A Brown, Balker, Stranraer	20.2	38.0	58.2
	Beef/Sheep Class			
1st & BP Trophy	SI Carlisle & Co, Nether Dargavel, Dumfries	22.2	46.5	68.7
	D Biggar, Grange, Castle Douglas	19.0	45.0	64.0
	N Henderson, Kilpatrick, Isle of Arran	18.4	44.0	62.4
	Big Bale Class (on analysis)			
1st	W & A Watson, Muir, Mauchline	30.0	-	-
	Best Silage in County (on analysis)			*Analyses (35)*
Ayrshire	A Allison, Macnairston, Ayr			31.8
Dumfries	W Young, Beuchan, Keir, Thornhill			22.7
Kirkcudbright	A Nelson, Redcroft, Parton, Castle Douglas			26.9
Wigtown	J Watson, High Mark, Leswalt			29.6
	Best Wholecrop Silage (on analysis)			*Marks*
Biotal Prize	P Cowan, East Lanegate, Lochmaben			63.6
	Best Maize Silage (on analysis)			
Nickerson Prize	A Robertson, Coopon Carse, Palnure			71.8
	Contractors Class			
Limagrain Cup	P Cowan, East Lanegate, Lochmaben			68.2

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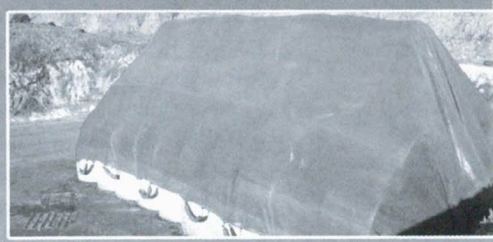

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Best New Entrant prize donated by **John Watson Seeds Ltd. Best Wholecrop Silage** prize by **Biotal Ltd. Best Maize Silage** prize by **Nickerson (UK) Ltd** and **Contractor's Cup** prize by **Limagrain UK Ltd. The Best Photograph** prize was won by **Hugh McClymont, SAC Crichton Royal Farm, Dumfries**

Silage Judge – Bob Mitchell

Chairman Wallace Welsh extended the Society's warm welcome to Bob Mitchell who considered it an honour to be invited to judge the south west's Silage Competition and thanked everyone for their hospitality. A dairy farmer himself, he came from the East of Scotland, a predominantly arable area with beef but very few dairy farms. It was therefore a welcome change to talk about nothing but milk! On each farm he had tried to think how he would like to farm in that situation. He had expected a wide spread in silage quality due to the unfavourable 2011 weather, but he had found it harder and harder to separate entrants in the Short Leet because management had improved greatly. The Competition allowed everyone to see what others were doing and contributed much to raising everyone's standards.

The Judge was concerned that figures for **Stocking Rate** were not readily available on some farms. Quoting concentrate use in kg l^{-1} was a great help for calculating forage use. Yield per acre was an alternative, but standardisation of figures was required. It was necessary to view all silage clamps on a unit to judge efficiency of use Exploitation of the fertiliser value of slurry was also important.

Congratulating all short leet entrants, the Judge briefly commented on the prize winners:

Dairy winner – A & A Reid. Very few faults but noted the need to turn at right angles to gain access to the clamp.

2nd Dairy – A Allison. Very good silage and production though cow accommodation was a little awkward.

3rd Dairy – R Hamilton. Very good silage with clean tidy silage face.

Beef/Sheep winner – S I Carlisle & Co. Exceptionally well managed silage pit, good effluent control. Large beef herd doing very well.

Bob Mitchell – Drumdreel Farm, Strathmiglio, Cupar
Silage Judge, Bob Mitchell, briefly reviewed the history and development of his dairy farm in the East of Scotland.

His family came originally from Sorn, Ayrshire, moving to one of the coldest, wettest parts of the County, the Fenwick moor, with a dairy farm milking 20 cows. After selling this farm, the next move was to Stirling, starting to breed horses before reverting to milk production within 2 years. In 1944 Bob's father and two brothers managed to rent Drumdreel. The land here had been largely woodland before the 1914-1918 Great War. 20ha were reclaimed involving removal of many tree roots and stones. Initially there was a dairy herd of 34 cows in three byres, cow numbers being later doubled. In 1968 two cattle courts and a parlour were built, later converting to cubicles to reduce bedding work.

At present, Drumdreel extends to 176ha with a further 40ha rented and carries 160 Holstein-Friesians. All youngstock are reared, the bull calves being sold at 100-200 days for fattening. A tower silo was erected in 1974. A new cubicle house is being built, plus increased slurry storage to allow use at the optimum time for benefit of nutrient value. The developments are being planned for handing on to Bob's daughter who wishes to continue the family dairy.

NOTES FROM THE ISLE OF MAN 2011
Chris Kneale, Secretary, Manx Grassland Society

14 January 2011 – Annual dinner and Prize presentation, this year judged by Jim Peet sponsored by Isle of Man Farmers and Jim Peet Agriculture. Main Prize winners included Juan Hargraves – Dairy grassland management, Derek Kermeen – Beef & Sheep grassland management, and overall grassland management. Overall clamp silage winner and the New Silage Master award – Colin and Will Duggan. Best Big bale silage – Jim Caley, best Whole Crop – Billown Farms.

24 March 2011
Welcomed Charlie Morgan, Grassmaster, and Will Corrigan of Dow Agro Sciences who led a focus event on improving forage utilisation. The event combined a classroom session with lunch followed by a well attended gathering in a nearby field.

AGM – this took place at lunchtime on **8 April 2011**, with retiring Chairman David Collister welcoming into post New Chairman James Callow. Following the AGM the society visited Andrew Sanders and Family farming at **Ballalough farm, Baldwin**. The family are milking over 400 Holstein Friesian cows with an average milk yield over 8500 litres. The society viewed the recently installed 32 point rotary parlour and also a recently erected poly tunnel for young calf rearing.

28 June 2011
Farm visit to Colin Duggan and family at Ballavell, Ballasalla. Colin was the winner of the silage competition and also the prize for best re-seeds. The farm of 94ha is home to 90 milking cows, 29ha of crops with all cattle reared through for sale as bulling heifers, finished or for the dairy herd. The society joined with the Young Farmers for their Farm planning competition which made for an excellent turnout.

23 June 2011.
Mini grassland tour to BGS grassland winner Steve Brandon in Shropshire. The day was followed up with a visit to Dan Lovett a nearby young dairy farmer establishing a new grass based milking unit on what was once a beef farm.

26 July 2011
Visit to Grassland Management winner Derek Kermeen at Ballaterson Maughold, who was also the North of England regional winner. Derek and his wife Allison are farming 1000 ewes on 170ha split into three main sites. The emphasis was on matching the stock to the ground, which was a mixture of good, improved and unimproved land. Aiming to increase clover content and use better grasses to increase lamb output.

13 October 2011

Grassland tour to Ireland where we visited the Grange Beef research farm, viewing the Derrypatrick suckler herd and the grazing and beef research taking place. This was followed with a visit to a nearby Dairy farm to view a highly stocked grass based spring calving unit. The following day we visited Cathal Creane, a beef focus farm where it was openly discussed how the business performance had increased by improving his grassland management, with increased stock numbers. In light of suggested changes to CAP, it was planned to increase stocking rate and business performance further.

Andrew Nelson, Cogarth, UK National Grassland Management Champion 2011 (2nd left) receiving his award at the Dairy Event, Stoneleigh. Competition Judges (L-R: Stephen Brandon (2010 winner); Elaine Jewkes (GrowHow UK Ltd) and John Read (DLF Trifolium). *(Photo: BGS Grass & Forage Farmer).*

The BGS held a Farm walk at Cogarth on 1 June 2012, chaired by BGS President, John Downes. Topics highlighted were:

- Making best use of hill ground
- Use of poorer ground as deferred grazing
- Reseeding after kale and methods of increasing white clover by direct drilling on stony ground and via cattle feed on the hill
- Outwintering cattle by strip grazing kale.

BGS NATIONAL GRASSLAND MANAGEMENT COMPETITION 2011

Sponsored by ***GrowHow UK*** and ***DLF Trifolium***

The 10th annual National Grassland Management Competition was won by SWSGS member **Andrew Nelson, Cogarth, Parton, Castle Douglas**, against competition from the whole of the UK. The runners-up were **Richard Fryer, Cheshire** and **Allan Wallace, Co. Antrim**. The Competition winners were announced at the Dairy Event and Livestock Show, NEC, Birmingham in September.

The 220 ha of land at Cogarth includes hill, improved rough grazing and sloping and stony soil, with only limited areas of silage ground and good grazing. 140 Aberdeen- Angus cross sucklers produce Charolais sired progeny which reach up to 400kg at 11 months. 560 Cheviot Mule sheep, put to Texel, produce lambs finished on grass. Areas for reseeding are sown to two crops of Kale which provides winter feed for the cattle. Clover contents of permanent grass swards have been increased by over-seeding, and on inaccessible hill grazing by including seeds in the cattle concentrates. High quality silage is made in June and August; Cogarth has frequently been ranked high in the beef/sheep class of the local silage competition, coming first in 2003 and 2009. The integrated management of silage ground and lowground grazing with the hill and rough areas impressed the judges. Precise soil nutrient management and environmental features were also significant.


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CLAUCHLANDS WINS SCOTTISH SILAGE TROPHY

J A Brown, Gaindykehead, Airdrie

This year's winner of the British Grassland Silage Trophy was **A & A Reid, Clauchlands, Lamlash, Isle of Arran** (South West Scotland Grassland Society). Runner up was **R McNee Ltd, Woodend Farm, Armadale, West Lothian** (beef farm, Central Scotland Grassland Society), a very close second and who wins the Dr Ron Harkess Silage Trophy.

Third place went to M Martin, Garguston, Muir of Ord, Rosshire (beef farm, North of Scotland Grassland Society), and fourth place to M Langlands & Co, Dalbrahaddan, Alyth, Blairgowrie (dairy farm, East of Scotland Grassland Society). Marks given (analysis & inspection) were:

Clauchlands 86 (35 + 51), Woodend 84 (26 + 58), Garguston 82 (31 + 51), Dalbrahaddan 80 (30 + 50). The diet at Woodend was based on high silage content; that at Garguston, an arable farm, had relatively low silage.

Judging jobs are never easy, especially when one has the task of judging the Finals of the Silage Competition of Scotland's Grassland Societies. All four finalists had a very similar analysis, in fact they were within a hair's breadth, which made the task even more difficult. Despite the less than favourable weather, it was pleasantly surprising how excellent all four were in almost every aspect. In the final we had two dairy farmers and two beef units. Three were chopped with forage harvesters and one with a forage pick-up wagon which had a slightly longer chop. Surprisingly, only one had the silage cut and taken out with a shear grab, which obviously left a very clean-cut face, while the others were done with a bucket, leaving a much more ragged silage face. However, there was little evidence of any secondary fermentation. Judging took place from March-May 2012. The chemical analyses of the silages were based on samples taken much earlier.

It was an honour to judge such an important event, and I congratulate all the entrants on their attention to detail, and excellent quality of product.

ANAEROBIC DIGESTION PROVIDING OPPORTUNITIES FOR GRASSLAND FARMERS

Robert Ramsay, SAC FRBS, Ayr

The Scottish Government has set ambitious targets for renewable energy generation. They aim to generate the equivalent of 100 per cent of Scotland's gross annual electricity consumption from renewable sources by 2020. Farmers and land-owners have an important role to play if we are to meet these targets. Many have already invested into renewable energy to offset costs and gain an extra income stream within their existing business. The most widely used systems are wind power and Solar PV. On a small scale, these systems are affordable and offer good returns.

A number of farmers have invested in Anaerobic Digestion (AD), to process farm wastes and produce biogas, however, due to high start-up costs and poor returns from small scale AD, many have been discouraged from investing. On a larger scale, the economics of AD can be very different. There are a number of large scale, commercial AD plants now up and running with many more in the planning stage. One of the largest plants currently running is Scottish and Southern Energy's Barkip biogas plant, which is operated by Zebec. Located in North Ayrshire, this plant is less focused on using energy crops than many other plants; instead the raw material is based on slurry, silage and municipal wastes. The Barkip plant highlights the opportunities that AD brings to grassland farmers.

Farmers can also play a key role in the disposal of digestates. Assuming the digestate is PAS 110 accredited (authorised to be used as a fertiliser), it can then be spread to land, where it has a huge potential as an alternative to synthetic fertilisers. In recent years, the global supply and demand equilibrium for fertiliser has shifted and the price has increased dramatically. Digestate has a high fertiliser value, with good levels of freely available N, P and K, and is a good soil conditioner.

Large scale AD plants are opening up new markets for agricultural commodities like silages and whole-crops and also creating a market for wastes like dung and slurry. AD will allow farmers to add an income stream to their farming business and reduce costs, improving overall business profitability.

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MAIZE AT CRICHTON 2011

Jennifer Flockhart & Hugh McClymont

The areas of maize sown under plastic and conventionally, respectively, were as follows:

- 24 ha conventionally sown between 21 April and 4 May
- 21 ha sown under plastic between 18 April and 4 May
- 21 ha conventional after 1st cut silage 13-14 May
- 5.8 ha under plastic after 1st cut silage on 15 May

The total area sown to maize was therefore 71.8 ha, an increase of nearly 9 ha from 63 ha sown in 2010. The following graph shows some of the weather records taken during the growing and harvesting season in 2011.

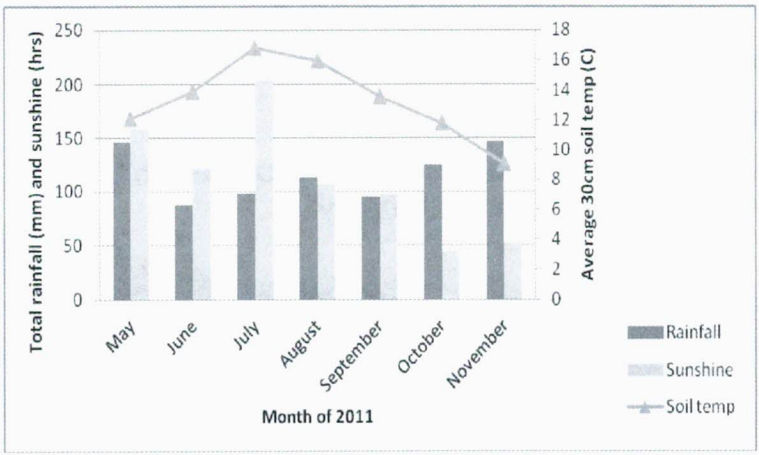

Figure 1. Rainfall, hours of sunshine and soil temperature from May to November 2011.

The varieties grown were: Acclaim, Acumen, Artist, Bowling, Dominator, Intention, Ixxes, Kentaurus, Marco, Nancis, Yukon; all with Poncho seed dressing except Acumen and Intention. The earliest drilled was Marco, 18 April (under plastic), harvested 20 October, yielding 50t ha^{-1} (fresh) at 33% DM. Latest sown was Yukon, 15 May (under plastic), harvested 7 November, again yielding 50t ha^{-1} at 32% DM. Harvesting continued until 17 November, with lower yields (25t ha^{-1}) and DM (28%). The later harvested crops were all conventionally sown.

FUTURE DAIRY FARMING SYSTEMS OPEN DAY
SAC Dairy Research Centre, Crichton Royal Farm, Dumfries, 3 May 2012

W Welsh & G E D Tiley

The main aim of the Dairy Research Centre is to develop, implement and provide information from sustainable breeding and management systems for dairy cattle. Critical objectives include finding ways to improve the health and welfare of UK dairy herds and measuring different systems' effects on the environment. The Select genetic animals in the Langhill herd have genetic merit for fat and protein yield within the top 10% in the UK, and the Control genetic merit cows are bred to represent the average in the UK.

The Open Day was attended by a large number of farmers and others from south west Scotland, who received a welcome from Dr Dave Roberts, Head of the Centre and from Prof Bob Webb, recently appointed Principal and Chief Executive of SAC.

By products and continuous housing system (*Mizeck Chagunda & Marie Haskell).* A study to provide information on the production and health of cows kept inside all year and against the possible future scenario were land areas could be at a premium. The animals are fed entirely on by-products (or co-products) such as straw, soya bean meal, brewery grains and residues from sugar refining or breakfast cereal manufacture. Herd target is 11,000 litres for select genetic merit animals. Land areas will be required for slurry disposal. All water and food consumption is monitored. To date, production of the animals and milk quality has not been affected.

Homegrown feeds system (*Jimmy Goldie & Jenny Flockhart*). All ingredients in the cows' diet are grown on the Crichton farm. Cows are housed in winter, grazed spring to autumn; diets supplemented as required by indoor feed. Select genetic merit cows reached target milk yields of approximately 8,000 litres $year^{-1}$. Homegrown crops include grazed grass, grass silage, beans, red clover, wheat and lucerne. In a previous system which included 900kg of concentrate cow^{-1} $year^{-1}$, the Select cows gave just under 8,000 litres, with 5,783 litres from forage.

Grazing management (*David Keiley & Paul Kelly*). A paddock system of grazing is used for the Langhill Home Grown herd, grazing 21 paddocks of approximately 1ha and moved to a fresh sward every 24 hours. The swards are measured with a rising plate meter twice-weekly, with target yields of 2800kg ha^{-1} DM at start and 1500-1600kg ha^{-1} after grazing. There are two grazing periods in the day between the 3x daily milking; the third period is overnight when a high starch ration is given to balance the high protein in the grass. It has been observed that the cows eat less grass in the autumn though the grass is of a similar quality to spring grass.

Slurry fertiliser value and use (*David Owen & Chris Henry*). Being in a NVZ there is a need for increased slurry storage. Separation of solid and liquid fractions can alleviate the pressure on liquid storage. It is important to analyse the nutrient content of slurry being applied as well as to know the soil and crop requirements (PLANET program). An experimental trial on the value of separated solid/ liquid components applied to grass is described on p39.

Soil Compaction research (*Bruce Ball representing Paul Hargreaves*). It is important to examine the soil condition in the field by digging out at least a spade's depth of soil and looking at the soil profile for signs of compaction, especially in the heavier and wetter soil types. Examples were shown of soil clods with grey and rust mottled appearance and sour smell, which indicated poor aeration. Such poorly ventilated soils could lead to N loss as nitrous oxide with detrimental effects on global warming. Details of a trial in progress are given on p38).

Calving management (*Colin Mason & Pete Little*). The importance of feeding good quality colostrum to newly born calves within 6 hours of birth was stressed. This allowed optimum absorption of antibodies by the calf stomach. Colostrum is collected from the first milking, tested for quality and stored in a freezer. This is then available for timeous feeding to new calves after pre-warming. All calves are removed from the mother as soon as possible to individual pens for 6 days before moving to groups and fed from automatic feeders until 49 days old.

Environmental conservation (*Derek Robeson*). During travel between points on the farm, opportunity was taken to point out the arrangement of mature hedgerows, often associated with ditches. These represented corridors for movement of wildlife, while the broad field boundaries encouraged nesting birds and insects. Some permanent grassland had also been sown to wildflower mixtures which also attracted butterflies and other insects.

DAIRYCO GRAZING SYSTEMS TRAINING

DairyCo will be running special training events during 2012 on 'Grazing Systems'. The courses will look in-depth at the skills required to operate grazing systems effectively. Included will be: understanding grass, how to manage and budget grass, the concept of grazing systems to feed the cow, cow fertility, block calving, choice of genetics to maximise the system, layout and logistics of the paddocks, tracks and water troughs. The courses will run over a number of weeks with on-farm and remote learning guided by qualified tutors and grazing mentors.

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MUCK & SLURRY – SAVING MONEY ON THE FARM

Chloe McCulloch, SAC Consulting, FRBS, Ayr

SAC Event held at West Scoutts Farm, Tarbolton, 27 February 2012 (By Permission: *James Hodge & Co*)

This event was held to consider slurry and manure management so as to make better use of nutrients, reduce fertiliser costs, reduce pollution risks and provide guidance on how to meet regulation requirements. A whole farm planning of slurry management had been initiated at Scoutts Farm. This involved a 3-year programme (SlurryMax) with soil analysis, calculation of nutrient value of slurry applied, cropping and manurial history of each field. This detailed approach could result in substantial financial savings.

Adrian Jones, SAC Environmental, Auchincruive emphasised the manurial and monetary value of slurry, and the need to obtain analyses of its nutrient content by regular testing. The different methods of slurry application were compared. It was important to reduce Ammonia losses to the atmosphere, which could be achieved by shallow injection. Adequate slurry storage, pumping equipment, pipe gauges were other factors to be considered.

Hugh McClymont, SAC Crichton Royal Farm explained aspects of nutrient management at Crichton Royal Farm, Dumfries, where the use of purchased fertilisers had been dramatically reduced through planned application of slurry. An umbilical system was used where possible and injection was now preferred over splash plate application.

Lucy Filby, Scottish Environment Protection Agency (SEPA) and **Gregor Caldwell SGRPID** outlined rules which governed the application of fertilisers and organic manures to farmland. Direct and diffuse pollution of watercourses had to be prevented as far as possible by the use of buffer strips and water margins.

Useful guidance is contained in SAC **Technical Notes TN622 – Optimising the application of bulky organic fertilisers** and **TN632 – Fertiliser Recommendations for grassland**.

SAC SLURRYMAX

S J Donnelly MBE & T Kneale
SAC FRBS, Stranraer

SAC SlurryMax is a new program for farmers, designed to help make maximum use of slurry and more economic use of fertilisers. This can lead to cost savings, greater profits and accompanying benefits to the environment. It involves a **whole farm** approach with soil analyses and evaluation of fertility on all fields using maps in conjunction with PLANET Scotland.

A complete slurry, fertiliser and liming programme can then be derived in relation to cropping. With a solid baseline in place, this can be readily updated annually by the farmer and consultant. Such a detailed, precise approach to manuring enables savings to be made and risks of pollution to be identified.

Examples of case studies on farms, including at SAC Crichton Royal, have resulted in average annual savings of £7,000 in fertiliser costs. These were mainly through analysis and optimum use of slurry at correct stages in cropping.

SlurryMax – Whole Farm Soil Fertility Management
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For more information: call 01224 71084 or visit www.sac.co.uk.

SWSGS JUBILEE SCHOLARSHIP

The 2012 Annual General Meeting of the SWSGS approved the setting aside of £1,000 for the award of a Golden Jubilee Scholarship. The Society wished the sum to be used to support a research project or travel grant, preferably to assist a student or young research worker, directed toward a topic which could benefit grassland farmers in SW Scotland.

The nature of the project to be supported will be decided after discussion between local grassland research interests and the SWSGS Executive Committee.

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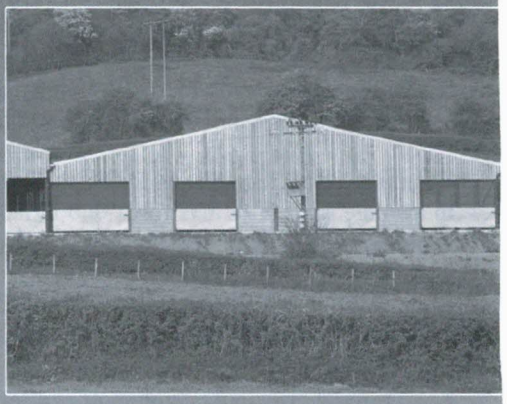

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WEATHER DATA FOR 2011
SAC AUCHINCRUIVE (55°29'N 4°34'W) Alt 45m

	Mean Air Temp °C		Mean Soil Temp °C	Rainfall		Sunshine
Month	*Max*	*Min*	*At 10 cm*	*Total (mm)*	*No of Days*	*Total Hours**
January	6.2	0.7	3.8 (30cm)	71.4	22	42.1
February	8.8	3.2	4.5	114.4	21	53.2
March	9.6	2.4	5.0	73.2	21	84.3
April	15.3	6.2	9.4	45.2	13	170.7
May	14.4	7.6	-	104.0	23	146.6
June	15.9	8.8	13.3	68.0	19	144.1
July	18.5	9.9	15.2	57.6	12	235.6
August	17.1	10.9	14.3	75.2	18	98.2
September	16.7	10.9	12.8	130.4	24	92.4
October	13.6	9.1	10.8	210.0	26	35.0
November	12.4	6.2	8.4	114.6	24	68.0
December	8.3	3.4	5.3	172.0	30	15.0
Means/ Totals	**13.1**	**6.6**	**9.3**	**1236.0**	**253**	**1185.2**

Max air temperature: 23.4° on 4 July. Min air temperature: -5.0° on 7 January.
Last frost: 28 March 2011. First frost: 16 November 2011.

* RNAS Prestwick.

WEATHER DATA FOR 2011
SAC CRICHTON ROYAL FARM (55°3'N 3°35'W) Alt 65m

	Mean Air Temp °C		Mean Soil Temp °C	Rainfall		Sunshine
Month	*Max*	*Min*	*At 30 cm*	*Total (mm)*	*No of Days*	*Total Hours*
January	6.2	-0.4	3.1	135.7	16	44.5
February	8.8	2.6	5.1	202.7	19	54.6
March	9.7	1.8	6.0	84.1	14	94.1
April	15.5	6.6	10.4	51.1	10	223.0
May	15.0	7.8	12.1	146.2	23	158.9
June	16.7	9.2	13.9	87.8	19	121.5
July	19.7	10.2	16.8	98.0	14	204.4
August	17.8	10.2	16.0	113.3	23	106.4
September	15.8	10.3	13.6	94.7	19	97.7
October	14.3	8.9	11.8	124.7	27	44.5
November	12.2	6.4	9.1	147.4	21	52.3
December	7.9	2.6	4.9	147.9	27	16.8
Means/ Totals	**13.3**	**6.4**	**10.2**	**1433.6**	**232**	**1218.7**

Max air temperature: 24.7° on 3 June. Min air temperature: -7.8° on 20 January. Last frost: 28 March 2011. First frost: 15 December 2011.

After a cold winter, 2011 developed into a year of remarkable lack of sunshine, except in April and July. A spell of abnormal warmth in April gave way to a cold May and June which retarded crop growth and, with frequent rain, made for a difficult silage season. From August onwards there was little sunshine, but increasing wetness leading to record rainfall. Several fierce gales were experienced, reaching storm force on one day in December.

Meteorological data reproduced courtesy of SAC Auchincruive, SAC Crichton Royal Farm and Met. Office, Exeter.

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