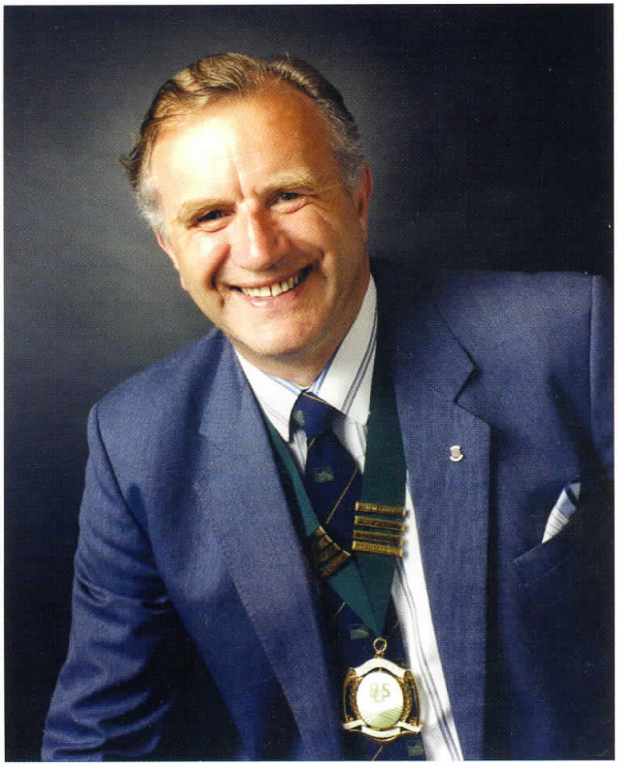
GREENSWARD

Journal of the South West and Central Scotland Grassland Societies

No. 48 2006



John Frame, 1930-2006
President of the British Grassland Society, 1989-1990

May the clovers you find always have four leaves and may the grass always be greener on your side of the fence.

John Frame

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Front Cover Photograph: Cows grazing at SAC Auchincruive, Ayr
(Photo: Jan Connell)

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John McAuslan (right), Farm Manager at SAC Auchincruive and Scottish Silage Champion 2006 receives the BGS Trophy from John Mackie, 2005 Scottish Champion, with Chairman Hugh McClymont (left), at SWSGS Farm Visit to Dalfibble (J Mackie), August 2006

FOREWORD

This edition of 'Greensward' has been heavily overshadowed by the loss of one of the most inspirational members of the grassland community in west Scotland – **Dr John Frame**. A founder member, Life Vice-President and Honorary Member of the South West Scotland Grassland Society, he was Secretary 1975-1979 and its spiritual guide throughout his life. All Members, colleagues, farmers, friends and indeed the world-wide grassland fraternity regret the loss of John, such a giant in grassland, with that rare combination of academic excellence and practical appreciation. Much of what the South West and Central Societies are and have done can be traced back to the initiatives and efforts of 'JF', as also can many of the enlightened and modern practices in grassland management in west Scotland and beyond. His missionary promotion of grassland initiatives overseas is succinctly described in this journal by his long time colleagues Ron Harkess and Deric Charlton. Sir George Stapledon was described as 'the prophet of the age'. John Frame can truly be called 'the Grassland Ambassador and Adviser' of our time. It has been a privilege to have enjoyed his leadershp and inspiration which we can now continue to take forward to maintain the highest standards in our Grassland.

The hallmarks of excellence and service to grassland in UK and Europe can be seen in John's posthumous contribution from the 21st EGF Meeting in Spain (page 54). The Editor is grateful for items on a range of topics from other contributors, including overseas visits, in which might be included the BGS Summer Visit to the Isle of Man! We now have the challenges of seeking objective information on the extent to which livestock and agricultural activities contribute to the problem of climate change and global warming, and the need to construct energy and nutrient budgets. Among farmers in west Scotland it is encouraging to see changes in strategies seeking to maintain financial viability and sustainability, whilst maintaining or indeed improving quality of product and standards of environmental care which are increasingly sought by statutory authorities.

All farm hosts are thanked for invitations to visit their enterprises to the benefit of grassland. Sponsors and advertisers are especially thanked for their loyal and unstinted support of the two Societies, as also are Chairmen, Treasurers and Committee Members for their time and efforts in maintaining the Grassland Society traditions. SAC staff in the Farm Business Services in the Ayr, Dumfries, Stranraer and Lanark offices, staff in the Environmental Group at Auchincruive continue to give solid support. Above all, it is impossible to thank Lorraine Reid, at Auchincruive, sufficiently for her indispensable and excellent typing and arranging the contents of the Journal. The Society is also greatly indebted to printers: Walker & Connell at Darvel for their careful work in printing and publication.

G E D TILEY - Journal Editor

International Code Number ISSN-0017-4092
Printed by Walker & Connell Ltd, Hastings Square, Darvel, Ayrshire.

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DR JOHN FRAME – 1930-2006
Honorary Vice-President and Life Member of SWSGS

AN APPRECIATION OF HIS LIFE AND WORK
Dr Ronald D Harkess OBE

John Frame was born and brought up in Hamilton, Lanarkshire and educated at Hamilton Academy where he was an outstanding pupil, excelling in science and languages, which both proved to be keystones in his future distinguished career. His early experience of farming and livestock was helping to deliver milk in the family's business and assisting his father with the horse and a loft of successful racing pigeons. On leaving school, he spent a practical year on Hall of Carnduff farm at Strathaven, where he was a member of the Young Farmers' Club. In his National Service, John served with the Royal Air Force in Egypt as a radar operator. After demobilisation, he obtained a BSc in Agriculture at Glasgow University in 1954. He also gained, at Auchincruive,the Scottish Diploma in Dairy Husbandry, the National Diploma in Agriculture and the National Diploma in Dairying with Honours, a meritorious achievement. John then obtained a postgraduate Diploma in Agriculture at Reading University in 1955 on a Department of Agriculture for Scotland Scholarship with a thesis on the cutting management of Lucerne (alfalfa). His postgraduate studies continued at Massey University in New Zealand, where he obtained the degree of Master of Agricultural Science with honours, for research into the growth and development of kale (*chou mollier*), and became an overseas member of the New Zealand Grassland Society. Returning to Scotland in 1958, he was appointed to the Grassland Department of The West of Scotland Agricultural College at Auchincruive where he remained until his retiral, then Head of Crop Production, Grassland Centre Leader and Chairman of the Agricultural Division. His duties as a specialist adviser included research into the growth and utilisation of the grass crop and advising farmers on the application of new varieties and technologies. He was awarded the Doctor of Philosophy by Glasgow University in 1967 for research work on grazing management. In the ensuing years he became a 'weel kent' and popular figure in the UK, European and international grassland scene and remained so, until his untimely death.

John was an able public speaker and chairman, equally at home with farmers, students and scientists. His advice and guidance as an external examiner and consultant were sought from well beyond his native heath and during his life he visited some 48 countries including Inner Mongolia, China, Uruguay, New Zealand and Canada. His flair for languages gave him a working knowledge of French, German and Russian and, after spending two years in Argentina on secondment to the Food and Agricultural Organisation of the United Nations, he

was fluent in Spanish, a language which he continued to study until recently. A prodigious writer, John was author or co-author of over 370 published papers, both popular and scientific, on grassland topics. As a longstanding member and staunch supporter of the British Grassland Society, he was awarded the prestigious BGS Award in 1987 for his contribution to grassland science and farming, and in 1989 he was elected President, an honour he much treasured. He undertook editorial duties for numerous journals and scientific groups and his patience and understanding with colleagues and students, especially for those whom English was not a first language, was widely appreciated. John was a Fellow of the Linnean Society of London, Fellow of the Royal Agricultural Society, Fellow of the Institute of Biology, a European Professional and Chartered Biologist and a past president of the Scotia Agricultural Club. At a local level, he was an Honorary Vice-President and Life Member of the South West Scotland Grassland Society, of which he was a founder member and Secretary 1975-1979.

John 'retired' in 1990 at which time he received the Dr A.F.R. Nisbet award from SAC for his outstanding contribution to Scottish Agriculture and for his lasting contribution to the reputation of the College throughout the world. In the succeeding years, with his wide horizons of interest and expertise, he was busier than ever. In support of the European Grassland Federation, he visited virtually all the EU States, some on several occasions, including those such as Romania, Czech Republic, Estonia and Bulgaria, yet to join the Community. His tireless input into European grassland farming issues and his strong support for FAO and the British Council in Europe and elsewhere, resulted in many honours. He was appointed Honorary Member of the Russian Ecological Society, an Honorary Member of the Polish Grassland Association and was awarded the Jubilee medal by Poland in 2003 for his distinguished service. He was an Academician of The Lithuanian Academy of Sciences and a Life President of the European Grassland Federation. His last visits were to Spain in April and Poland in June 2006. John's first book – a distillation of a lifetime's experience in grassland - entitled 'Improved Grassland Management' was published in 1992, reprinted 1994, and remains a prescribed text book for students. In 1998, he co-authored a second book on 'Temperate Forage Legumes'. This was a link back to the early Reading studies, his legume trials at SAC and visits to New Zealand, and was a timely contribution to the revived interest in the role of legumes in efficient grassland and organic farming. In New Zealand he was recently tagged 'the European legume legend'. A further two books, 'Forage Legumes for Temperate Grasslands' (2005) and 'Grasslands: Developments, Opportunities, Perspectives' (2005), co-authored and co-edited by him, have been published by FAO. John's main collaborators were Dr Deric Charlton, New Zealand, Dr Scott Laidlaw, Northern Ireland and Dr Stephen Reynolds of FAO. Most recently he had been involved in preparing legume species profiles for the FAO website and

in the production of a CD-ROM on grassland species, a far cry from the technology of his early days with a horse drawn milk float.

Amidst all this hectic academic activity, John was a reader, a hill walker, a photographer, a curler and enjoyed watching football and rugby. He took a keen interest in his garden, particularly the roses for which he won many awards at local horticultural shows. He was a member of the former Toastmasters Club and active in Rotary International, until recent ill health curtailed his participation. In 2000, he was awarded the prestigious Rotary Paul Harris Fellowship, named after the movement's founder, for his services to international development. John was a man who gave much encouragement to his family, of whom he was rightly proud, and from whom he received the support which enabled him to pursue his wide ranging interests. It has been my privilege and honour to have been his friend and colleague for 45 years. Our condolences are extended to his wife, Nancy, whom he married in 1967, and to his daughters, Shona, Sheelagh and Fiona and son-in-law Murray

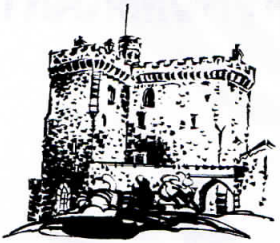
Throughout his life, John was a modest, quiet and reserved person, with a wry sense of humour. He kept his feet on the ground. Indeed, he exhibited the qualities often associated with that other noted worker from Lanarkshire, the Clydesdale horse – strong, trusty, patient, willing, eager, reliable, confident and a hard worker, content to take the bit between the teeth and shoulder the yoke with a sparkle in the eye. At home and internationally he was respected as a devoted and responsible researcher, prepared to share his expertise for the good of others. He will be sorely missed by us all.

"May the clovers you find always have four leaves and may the grass always be greener on your side of the fence". John Frame, 2005.

Temperate Forage Legumes: J Frame, J F L Charlton and A S Laidlaw. ***Published 1998* by *CAB International*, Wallingford, Oxon. 327 pages £36.99**. This book is a comprehensive reference on the three most important forage legumes grown in UK – white clover, red clover and lucerne, with, in addition, species commonly grown in other temperate areas (eg: subterranean clover, sainfoin and birdsfoot trefoil). Quoting from the introduction and preface: "The value of forage legumes to the N economy of the world's grasslands and to ruminant production from them cannot be over-emphasised". "Sustainability, environmental friendliness and energy input efficiency have all become grassland farming watchwords", and the beneficial effects of forage legumes are becoming increasingly appreciated. This book will give answers to practical questions on any of the temperate legumes. It is illustrated with drawings by co-author, J F L (Deric) Charlton.

The Seed to your Success

Castle Mixtures



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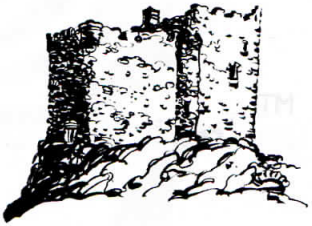

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JOHN FRAME - A TRIBUTE

Deric Charlton, Palmerston North, New Zealand, a long-time friend

I first met John when I arrived at Auchincruive in late 1961, and we found common ground – pastures and talking to each other. I stuttered when I first arrived, but John and I went to Toastmasters together, where I soon learned to speak clearly in public and haven't ceased since. This was just as well, because I lectured to the students, while he carried out research and published many papers with his colleagues. "Hunt, Frame and Harkess" became a publishing legend in European grassland circles. Though he had a Scottish education and served his National Service in Egypt, he chose to undertake his master's degree at Massey University, Palmerston North, New Zealand during the late 1950s, where he studied growth of *chou mollier* (kale) and enjoyed his rugby. He returned to Scotland and enthused so much about New Zealand that at least his youngest brother Bill decided to emigrate there, and then John remained at Auchincruive for the rest of his career! He became addicted to pastures and undertook much research on them, especially with clovers, and published many papers and popular articles. This didn't prevent him working in other countries however, and he spent two years in Argentina working for FAO after marrying his Auchincruive colleague, Nancy McNae from the Poultry School.

He was an active consultant on using clovers for farming in European countries until only a few months ago. Always an avid writer, John published several textbooks, including *Improved Grassland Management* (UK Farming Press 1992) and *Temperate Forage Legumes* (CAB International), co-authored with Scott Laidlaw of Queens University, Belfast, and myself (see page 10). His latest work is an excellent FAO publication on European legumes in full colour. Needless to say, he accumulated many letters after his name – and warranted them all. John was a long-time and well-known member of the NZ Grassland Association (as well as the British and SW Scotland Grassland Societies) and attended the 1993 International Grassland Congress held in Palmerston North. Although he studied many aspects of fertiliser nitrogen use on Scottish farms he always retained a strong interest in legumes and how farmers could manage them for best effect. He was a giant in his field and contributed significantly until the end. John was a sponge – he absorbed everything that he felt was worthwhile. He then communicated what he knew well – in print, in words and in voice, and through his heart. Above all, he was a family man, a great friend and an international agrostologist (grassland expert) an excellent pastoral ambassador for farming. I have lost a dear friend, but hope to remain in touch with Nancy and his daughters.

November 2006

SWSGS SPRING FARM VISITS IN KIRKCUDBRIGHT, 2005
G E D Tiley

Visits to **Mouswald Grange** (*By invitation*: **Robert Kirkwood**) and **Beyond-the-Burn** (*By Invitation*: **Gavin Lochhead**) on 11 May 2005.
Visits sponsored by **Carrs Billington Agriculture, Carlisle**

The SWSGS visited these two Stewartry farms on a warm sunny day with a good attendance to see: i) extended grazing at Mouswald Grange in the morning; ii) alternative forages and an alternative cow breed in an organic system at Beyond-the-Burn in the afternoon. The second visit was joint with SAC to demonstrate an organic system. It was followed with a brief seminar and presentations on organic milk quality (Kathryn Ellis) and animal welfare issues (Marie Haskell) (see pages 17, 19).

Mouswald Grange. A 260ha dairy unit run with neighbouring Drummuir. Grass occupied 168ha, crops 92ha, being 24ha spring barley, 28ha wholecrop barley, 12ha fodder beet, 6ha turnips, 18ha winter triticale and 4ha kale. Fodder beet was strip grazed, kale undersown with Italian ryegrass. There were 230 cows at the time of the visit, aiming to build up to 250. Average milk yield was 8,000 litres on 2t concentrates. All youngstock were raised, the bull calves kept to finish at 350-380kg deadweight. A hardy Friesian/Holstein breed was kept, of moderate size and length, having suffered foot problems previously. This had improved with the development of paddocks and tracks. Calving was concentrated in the spring and autumn, though a few calved throughout the year to even the workload. There were 30 paddocks with fields split into three using a half at a time to provide fresh grass at every grazing. Day paddocks were on a 12-day rotation and topped at 10-12cm; night paddocks were on a 6-day rotation with a lower sward height. Dry weather was a bigger problem than wet and some paddocks were shut up as reserves. In 2005 the cows went out on 28 March and finished at the end of October for night grazing and mid-November for day grazing. Dry cows are out every day during winter coming in for silage at night. Condition and feet remain good and cows are hardy and calve well in the spring. Poached fields can be disced and sown to kale and Italian ryegrass, to give grazing for late summer/autumn calvers. There were 3 full time workers and 1 part time.

Fodder beet was sown 5 May and fertilised with 62.5kg ha^{-1} nitrogen as 20:10:10. Herbicide Goldtex. The crop is harvested October/November with a sugar beet harvester and clamped, requiring protection against hard frosts. Roots are not washed and surplus can be sold. Grass silage is cut in mid June due to earlier grazing which is of highest feed value in May/early June. Contractor cuts and scatters, farm lifts next day. The grass is not cut too short, especially when

clover is present. Wholecrop is harvested at a range of maturities to fit in with the fodder beet. White clover silage may be tried at second cut putting clover first then grass on top. The farm is in a NVZ area and care is required during slurry application at the end of January.

* *Since the time of the visit, kale and turnips are no longer grown, in favour of increased areas of wholecrop and fodder beet. Also new red clover/ hybrid grass swards have been introduced, aiming for 40ha, to reduce summer applications of nitrogen.*

Beyond-the-Burn

Gavin and Jonathan represented the 4th and 5th generations of the Lochhead family which had started farming here in 1920. Beyond-the-Burn was run with Slethat, with a total of 132ha, approximately half at each farm. There were 104ha grass and 28ha crops, including 10ha triticale, 4ha fodder beet and 14ha peas. The silage area included 30ha of grass/red clover, cv. *Vilnius*. Conversion to organic farming began in 1999 with full conversion in 2001, but the stock were then taken out by Foot & Mouth Disease. After an initial 5-year SEERAD Organic Aid Scheme agreement, the farm had just started a five-year OAS Maintenance agreement. The second organic maintenance period had just begun. The herd of 130 cows was now the largest **Brown Swiss** herd in the UK.

Cross breeds had been tried in 1990 to improve feet and milk protein, using Brown Swiss semen in 1999 before being culled out by Foot and Mouth. Restocking took place with 99 in-calf pure heifers from Germany which yielded 5,000 litres in their first lactation. After adding a further 32 heifers plus stock bulls, yields of 7,000 litres at 4% protein were expected this year. Bulls were selected from Seattle to produce medium-sized cows which looked after themselves at calving, gave good milk, had good legs and feet and had improved udders. Ultimate yields should be 8,500 litres up to the 5th lactation. Concentrates fed were 1.5 tonnes; vet visits every 3 weeks; calving changed to summer to allow calving outside. Brown Swiss are hardy and go out in all sorts of weather. Mastitis is treated homoeopathically; lameness had reduced but had to be treated.The cows were buffer fed before turning out on clover-rich swards; there had been only one case of bloat in 6 years. Red clover fields were too bulky to graze and the cows did not relish pure white clover swards. No fertilisers were applied to the grass fields but they received two applications of dilute slurry, *via* an umbilical system. Fodder beet, sown 7 May this year, also received slurry and would yield more than maize when left in the field as long as possible.Docks had been very abundant for 20 years and were likely to persist. Suggested organic control would be to take a late silage cut, rotavate to 10cm, surface cultivate regularly through the summer and then deep plough. A Rural Stewardship Scheme had started 2 years ago, involving fencing, hedge and wetland management. This will provide shelter and a biosecurity barrier.

BROWN SWISS CATTLE

Brown Swiss is the oldest pure bred breed of cattle in the world, tracing back to the Bronze and Iron Ages. It was originally bred in the Alps by monks and was, and still is, grazed at high mountain altitudes of 1000-2700 m. This has led to strength and durability and makes for hardy, adaptable and healthy characteristics. The monks selected their stock for high milk protein contents to manufacture cheese. They also looked for beef qualities and so Brown Swiss developed into a dual purpose breed. The cattle were taken to North America by the pilgrims in the 1800s and there the breed developed into purely dairy stock, so that the USA are now one of the world's main suppliers of Brown Swiss genetics. The breed is now the second largest in the world. Brown Swiss became established in the UK in the late 1980s after its initial introduction in 1970. It is now recognised for its high yields of protein-rich milk and for value in cross breeding. The main attractions are: longevity, good temperament, ease of calving, good legs and feet, efficient use of forage, good milk yields with high protein content.

THE COMPOSITION OF MILK PRODUCED ON ORGANIC AND CONVENTIONAL DAIRY FARMS

Kathryn Ellis, BVMS, CertCHP, PhD, MRCVS, Division of Animal Production and Public Health, University of Glasgow Veterinary School

A comparative study of organic and conventionally produced milk in the UK was undertaken to determine whether there were significant differences between the two types of milk. At the start of the study, little information was available, especially from the UK, on the composition of organic milk, in particular on the effects of seasonal variation and management practices.

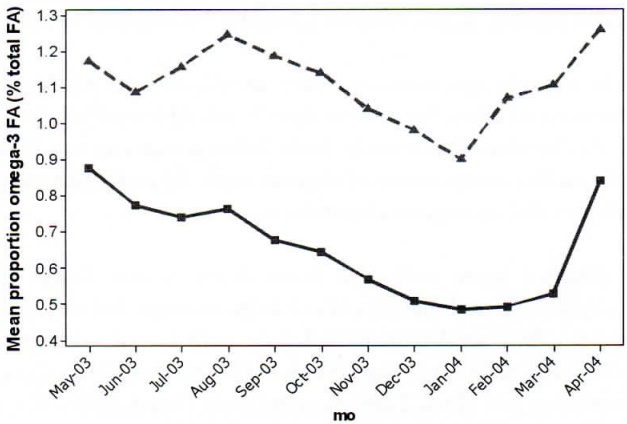
Monthly bulk milk samples were collected from thirty seven farms (19 conventional and 18 organic) and three processed milk sources for one year. Samples were analysed for fatty acid content (60 fatty acids), and vitamins A and E and beta-carotene. Standard milk composition including fat, protein, urea, and hygiene data: Bactoscan and Bulk Tank Somatic Cell Count (BTSCC), as well as mastitis incidence were obtained from farm records. Farm and management factors were recorded to identify practices that may be associated with differences in specific compounds in milk.

Results

Herd production. On average, organic herds differed significantly from conventional in having lower yields (6,542 vs. 7,726 l/cow year^{-1}), a higher geometric mean BTSCC (227,000 vs. 172,000 cells ml^{-1}), higher mean milk fat percentage (4.11 vs. 3.95%) and a lower recorded monthly clinical mastitis incidence (2.5 vs. 5 cases/100 cows in milk month^{-1}).

Milk fatty acids. Although both organic and conventional milk are relatively high in saturated fatty acid content, the overall fat percentage in whole milk is low (c. 4%) in the context of a balanced diet. There are several key seasonal, farm management and cow nutrition factors that affect fatty acid content, with mono-unsaturated fatty acids (MUFA) and poly-unsaturated fatty acids (PUFA) increasing and saturated fatty acids decreasing in the summer. Both organic and conventional milk are very good sources of conjugated linoleic acid (CLA), with no significant difference between production system. However, differences were seen between milk types for other fatty acids: farm-gate organic milk was higher in total PUFA content particularly some essential fatty acids in the omega-3 fatty acid group (C20:5, C22:5 and C18:3) throughout the production year (Figure 1). Despite accounting for management and feeding variables, an 'organic' effect remained significant for these fatty acids. Processed organic milk also contained higher proportions of omega-3 fatty acids and total PUFA compared to processed conventional milk.

Figure 1. Proportion of Omega-3 fatty acids (FA) in total fatty acids in organic (▲) and conventional (■) milk for each month of the 12 month study



Milk vitamin content. Season, herd yield and access to fresh pasture were all important factors in determining the milk content of vitamins A, E and beta-carotene. Increased milk yield was associated with decreased vitamin E and beta-carotene content. Farming system was less important, except in the case of vitamin A, for which there was a slightly lower concentration in organic farm-gate milk although this was not seen in the processed milk. The higher concentrations in the conventional farms may be due to increased concentrate feeding with pre-formed vitamin A supplemented in dairy cow feeds.

Overall summary This study demonstrated that there were differences between organically and conventionally produced milk, particularly in the fatty acid content. Milk with higher omega-3 fatty acid content could be presented to the consumers as a valuable contribution to a *balanced* diet, but it is important to emphasise that both organic and conventional milk are excellent sources of CLA as well as other vitamins and minerals. The vitamin content of milk is likely to reflect the level of feed supplementation given to cows. There is an increasing amount of interest in organic agriculture, and this study has increased the understanding of organic milk production practices and their impact on food production. Additionally, it highlights the generally excellent standards of UK dairy production across all systems.

Acknowledgements are made to the Organic Milk Suppliers Co-operative (OMSCo), for their financial support and to the farmers and milk processors who gave their time and support to this project.

NEMATODE CONTROL AND GRAZING PATTERNS ON ORGANIC AND NON-ORGANIC DAIRY FARMS

L Maggs, S Athanasiadou & M Haskell
Sustainable Livestock Systems Group, SAC Bush Estate, Edinburgh

In summer 2004, a study was carried out to compare the gastrointestinal parasite load of dairy cattle on organic and non-organic dairy farms. Eleven organic and eleven non-organic dairy farms in south-west and central Scotland were visited. Dung samples were taken from calves in their first or second grazing season, as cattle are most susceptible to worms before they reach maturity. Faecal egg counts were made on the samples. The farms were visited three times during the summer period (May, July and September) in order to track the increase in parasites. The farmers were also asked about the worm control strategies that they used.

There was no difference between the organic and non-organic farms in the numbers of nematode eggs found. There was a large variation within farms, with some animals having high burdens compared to others. As expected, the average egg count increased over the summer. All non-organic farmers reported using commercial anthelmintics to control nematodes. Parasite control strategies varied amongst the organic farmers. Four farmers used clean grazing (on reseeded pasture or silage aftermath), four farmers said they moved the calves around regularly, and three farmers used a combination of clean grazing and regular moves to control parasitism. Additionally, two farmers grazed their calves with sheep.

It appears that levels of parasitism were, in general, very low in the year of the study. This most likely indicates that the strategies in use on both farm types to control internal parasites are effective. The weather conditions in the summer of 2004 may also have led to low faecal egg counts, so further monitoring may be necessary. However, it would appear that while the non-organic farmers were annually dosing their calves with anthelmintics and bearing the associated cost and environmental burden, organic producers were gaining the same level of control through grazing management (although this will also have associated costs). It is suggested that non-organic farmers could benefit from implementing grazing management techniques into their parasite control strategies and only dosing their animals when necessary, as in organic systems.

FORAGE 365 CONFERENCE
British Seed Houses

Forage 365 is an initiative launched by British Seed Houses (BSH) at a one-day Conference on 1 December 2005, held in Cheshire. The aim in brief is 'to cut costs through year-round forage systems'. The event was chaired by Michael Shannon and Paul Billings of BSH and featured 9 speakers who reviewed up-to-date forage production in 4 main topic areas: Grazed Grass, Forage Maize, Clover, Brassicas.

Professor Mike Theodorou, IGER, Aberystwyth emphasised the need to balance energy with protein contents in ruminant feeds, where high sugar grasses could be an advantage. **Hugh Black**, MDC, indicated how track design could affect cow walking speeds and thus efficiencies of milking and cow activities. In the Maize session, **Dr Ernst Loop**, Saaten Union (plant breeding) advocated farmers to select varieties on feed value to suit their conditions, while **David Burns**, Promar International, emphasised the importance of cutting maize at the correct stage for optimum yields and quality. **Dr Michael Abberton**, clover breeder at Aberystwyth, showed how the newer varieties can out-perform older ones. **Derek Gardner**, Promar, examined the benefits of changing from a fertiliser to a grass-clover based farming, coupled with an extended acreage. **Basil Lowman, MBE** pointed beef farmers in the direction of outwintering on self feed brassicas with silage, to save on machinery, labour and buildings. **Dr Padraig French**, Head of Dairy Research, Moorepark, Teagasc, Eire, gave guidance on the feeding of brassicas (kale, swedes, turnips, forage rape) to dairy cows. Sample cuts should be taken to measure the amount of feed to be allowed. An adaptation period of one week should be given to adjust to the new diet and long fibre supplement (silage, straw) should be available. Success with red clover-grass silage mixtures was reported by Ceredigion, Wales, farmer **Morris Davies**. Contact British Seed Houses, tel. 01179 982 3691 for information on forage crops and new varieties.

CENTRAL SCOTLAND GRASSLAND SOCIETY
FARM VISITS 2005
D Harvey, Secretary CSGS

18 March 2005 – Eastfield, Coulter, Biggar (*Courtesy: J Warnock & Son*). This was a brief late morning visit to the winner of the CSGS 2004 Silage Competition before a soup-and-sandwich lunch. Eastfield is situated at 225m (750ft) above sea level and extends to 120ha. In 2004 there were 48ha of first cut silage, 32-36ha second cut, and 12ha each of whole crop and of spring barley. The farm is run by John and 2 full time employees. There were 180 Holsteins averaging 7,200 litres and fed a TMR ration plus out of parlour feeders for the high yielders. 35 pedigree Blue Face Leicester sheep were also kept.

24 May 2005. The May spring visit was to **Bandirian, Ceres, Fife** (*Courtesy: I Robb*) and **Kinninmonth, Kinglassie, Lochgelly** (*Courtesy C Stewart*). **Bandirian** is home to 330 Holstein cows and was in the process of installing a rotary parlour. Of the total farm area of 220ha, at 100m above sea level, 114ha were for first cut silage, with 20ha for wholecrop, the remainder being grazed. All heifer calves reared for replacements and all bull calves sold. The whole Robb family were involved in the business with one full time worker. **Kinninmonth** is a beef/sheep/arable unit of 384ha at heights of from 80-230m. There were 160 beef cows with 30 pedigree border Leicesters, 40 Suffolk and 60 Texel sheep. Cereals were grown on 180ha, while 28ha were rented out for potatoes and vegetables; the rest being grazing ground. Labour was self, 2 sons and one full time employee.

GET BACK TO GRASS

This is the message in a recent book: **We Want Real Food** by **Graham Harvey**. Published by Constable & Robinson. £9.99. Graham Harvey is an adviser to *The Archers* and he advocates greater production from grass. 'If a lot more of Britain was under grass, this would make an enormous difference to climate change, because grassland builds up organic matter in the soil thus removing carbon from the air. The evidence is overwhelming that meat and milk produced from grass is full of health-giving properties. That produced from grain-fed animals has more saturated fat, fewer omega-3s, less CLA and less vitamin E. Shoppers should ask in supermarkets: "Is this meat/dairy product largely raised on grass?" Many in America search out pasture/grass fed beef. *The grass idea will catch on soon* and make a huge difference to people's health. *We could start producing our livestock from grass next year*, maybe even using parks and golf courses in 20 years!' *Comments reproduced from an article by Nicola Baird, editor of* ***Earthmatters****, published by Friends of the Earth.*

CENTRAL SCOTLAND GRASSLAND SOCIETY
SILAGE COMPETITION 2005

CSGS Silage Competition Evening, Newhouse Hotel, Newhouse, 9 February 2006

Silage Judge: J Warnock, Eastfield of Coulter, Biggar. Following the AGM, the Silage Judge gave a brief review of the farms judged. Prizes were awarded as follows:

HF Seeds Cup & 1st Prize For Dairy Silage:	J Pollock & Sons, Bonnyhill, Bonnybridge
2nd Prize	W McGregor, East Law
3rd Prize	J Warnock, Eastfield of Coulter, Biggar
Hamilton Reco Salver for Best Beef & Sheep Silage:	J Bannatyne, Drumalbin
2nd Prize:	R Mackie, Goodockhill, Newhouse
Big Bale Prize:	R Struthers, Collielaw

Guest speaker for the evening was Judith Clayton, Ecosyl Products Ltd, who gave a brief overview of the use of additives to ensure making good silage, and how this would then produce benefits in livestock nutrition.

GRASSLAND EVENTS AT CRICHTON ROYAL FARM

4 May 2005 – LEAF Dairy Field Day. Crichton Royal Farm is an Innovation Farm for LEAF (Linking Environment and Farming). Visitors toured a range of research developments on the farm, aiming for benefits to the environment whilst maintaining viable agricultural production, eg: use of clover and reducing applied N and N budgeting to reduce soil N losses. Commercial exhibits included recycling of plastic and of old tyres.

17 November 2005 – British Grassland Society Winter Road Show 'Making Grass Pay'. The Crichton Royal Farm was one of four venues across the UK where the BGS arranged their Winter Road Show, replacing the traditional single Winter Meeting. The aim was to focus on grass 1) as a base for profitable milk or meat production and 2) as a means of deriving income from environmental schemes. Speakers at Crichton were: **Marcus Maxwell** describing the Viewfield Easy Care management of sheep; **David Brown** on how he managed a beef farm on very heavy land in a wet area in Fermanagh; **Clive Gurney** on how he saw the future of dairy farming by sharpening up management, illustrated by examples from his farm in Hereford. This theme was continued by **Dave Roberts** describing features of integrated farm management being developed on Crichton Royal Farm. Nutrient budgeting, energy efficiency, better methods of slurry application, attention to detail in animal management and wildlife improvements were all being practised.

23 February 2006 – SAC Dairy Stockman's Day – Improving Cow Health and Productivity. A middle of the day event giving practical up-to-date guidance on: calf management, parlour routine, reducing lameness, condition scoring, plus brief research background. Supported by **MDC**.

4 May 2006 – Sustainable Livestock Systems – Directions for Dairying. This was the first of SAC's **Success through Knowledge** events campaign, aiming to ensure that new knowledge coming out of **SEERAD** (Scottish Executive Environment and Rural Affairs Department) is made available directly to those who can put it to good use. In short **Knowledge Transfer (KT)**. Events were due to be held on SAC's own farms, co-operating and SAC Monitor farms. At the same time the feedback views of the audiences will be noted on where further knowledge is required. The Crichton meeting focused on dairying – future milk markets, future dairy systems, future cow genetics and farmers' ideas for the future.

Other events held in Autumn 2006 included farm walks to see maize trials and alternative forages and on Improving Lameness plus a meeting on Reducing Nitrogen costs by use of slurry and nutrient budgeting.

SWSGS EVENING FARM VISIT 2005, AYRSHIRE

G E D Tiley

Visit to Burnton, Crosshill, Maybole on 18 August 2005

(*By Invitation: W Rowney & Family*)

Visit sponsored by **A F Pickles & Son, Ayr**

A good turnout of Society members visited Burnton Farm on a dark wet summer evening. The evening was a far cry from an earlier visit by SWSGS on a fine, cloudless day in May 1988, when there were 216 cows on 140 ha, having developed originally from 50 heifers some 6 years earlier. This successful dairy enterprise is now spread across 4 farms (Burnton, Auchalton, Myremill and Dunnymuck), totalling 464 ha and carrying 571 cows. 436 cows are milked at Burnton, averaging 9,000 litres, and 135 at Myremill (128 ha rented), with an average of 8,100 litres. Burnton is the home of the Carntall herd of pedigree Holstein-Friesians, which is self-contained using AI with some of the highest ICC Holstein bulls available. Yields of milk and composition of fat and protein are the main traits considered in selecting bulls. 350 heifers and 180 beef animals were divided between Auchalton (60 ha) and Dunnymuck, Turnberry (116 ha rented). 900 hoggs were wintered across all farms until February. The land is ideal for growing grass though it lies wet in the winter. The swards were mainly of mid-season perennial ryegrass. The grazing land is set-stocked and receives 100 kg ha^{-1} of 29/5/5 every 4 weeks until August. Slurry is spread through an umbilical system. Grass for silage is cut with a 3.3m JD mower/conditioner and wilted for 48 hours before lifting with the farm's New Holland self-propelled chopper. First cut is taken from 220ha and a second from 140ha, aiming for 7,500t silage of the highest quality. A third cut is taken if required and AddF additive is used on all cuts which are clamped in covered silos. Spring barley (60ha) is grown and all resulting grain and straw used. Winter rations comprise a semi-complete diet (silage, barley, soya and maize germ) for the first 25l of milk produced, topped up with high energy cake in the parlour. Two parlours, a 12/12 and a 24/24, had been installed at Burnton at minimum cost. Looking at the grass fields, there was a total absence of docks which were controlled by regular spraying with Doxstar; ragwort was controlled by pulling. White clover also was absent and was not included in seeds mixtures. Renovation of the sward was carried out by double direct drilling with the Moore Uni-drill after spraying glyphosate and applying diluted slurry. A new shed had been constructed with a fully suspended floor over a 2.7 million litre slurry store.

SWSGS was grateful for the opportunity of revisiting Burnton 17 years after its first visit to see the degree of expansion and progress. The Rowney family are thanked for this privilege and for their warm hospitality.

PLANNING FOR FINANCIAL SUCCESS

Alan Stannett, Cara Consultants, Holestane, Thornhill
Nick Austin, Clydesdale Bank, Carlisle

Meeting of SWSGS in the Station Hotel, Dumfries on 23 February 2006
*Meeting sponsored by **Clydesdale Bank plc***

The two speakers at this meeting sought to highlight the financial aspects of grass and livestock farming – which were essential to successful and viable enterprises. **Alan Stannett** emphasised some of the basic principles, in particular, the need for well thought **planning**. **Nick Austin** described two case studies which illustrated the important figures to look for in annual budgets.

Alan Stannett wished to introduce a different slant on grassland management – **the need to sharpen the business side**. It was not sufficient just to know how to manage livestock; with ever tightening margins knowledge of cost structure was vital. Individuals need to define success and be clear that: 'Profit is vanity, Net worth is prudent, but **CASH IS KING'**. Unfortunately, farmers were often not interested in talking about the business side of farming. Very often this was because they lacked good accounting information. Success does not happen by accident. **Planning** was essential to make sure that the farmer was controlling the business and not the other way around. Therefore it was necessary to make a plan and then communicate it with everyone around who was involved. A plan is a guide or prediction; a base on which to build the future for the business. The bank statement without a plan is not sufficient – that would be 'like a journey without a map' – exciting but risky!

What needs to be done? Sit down and make a plan. How to know if the business is doing well, eg: is too much being spent on labour or machinery relative to output? The answer is in **Benchmarking** – a proven method in industry and now a buzzword in farming. The recently introduced: **'Planning to Succeed'** initiative in Dumfries & Galloway is a programme to try and improve business skills among farmers, through monitor farms and business groups. One of the greatest difficulties is to obtain correct information. Thus improved record keeping was required and better accounting skills, so that problems can be detected, eg: high costs. Benchmarking within a group allows one to enquire, in confidence, how someone else achieves lower costs. In simple conclusion, it is necessary to know what is going on financially within the business.

Nick Austin briefly looked at the annual budgets in two sample farms from the point of view of a bank, when future viability prospects had to be considered.

The First Farm was a beef finishing enterprise also with feeding lambs, and was a former dairy farm. Area was 169ha plus 53ha rented, in a good

grass/arable area. There were 56ha cereals and wholecrop, 621 total cattle, of which 440 were beef, and 140 lambs. The point was made that in most businesses the PROFIT figure did not include:drawings, tax paid, personal insurances and loan/HP repayments. It was thus possible to show a healthy profit but still have a rising bank overdraft. A simplified forward budget based on Gross Output from stock and Single Farm Payment showed a **projected cash deficit**, due mainly to substantial Finance costs (bank interest) together with private drawings plus tax (total 40% of gross output).**The Second Farm** was a more successful enterprise with an expanding dairy herd and an improving performance. On 120 ha of very good land, all owned, there were 220 cows yielding 6,600 l, 12ha winter wheat and 4ha triticale. The bank loan was £380,000 and annual HP repayments totalled £22,000. All ratios were above those expected. Finance costs (bank interest) together with private drawings plus tax were lower than 30% of gross output and the projected forward budget showed a cash surplus and profit before finance of 20%.The main purpose of the exercise was to highlight a range of **Key** performance indicators which a bank will look at, based both on historical information and projections, when assessing a farming business. It can however be useful for any farm to undertake this analysis with either your bank manager or professional adviser.

McGill & Smith Ltd have been taken over by the long established family business of **L S Smellie & Sons**, who will now be marketing the **Sinclair McGill** brand. Note: In the advert **Headstart** and **Integral** are seed treatments, nutrient and bacterial respectively, which can improve establishment and early growth of grass and clover.

NOTES FROM THE ISLE OF MAN 2005

Caroline L Perry, Manx Grassland Society

The summer of 2005 was taken up with preparation for the visit of the British Grassland Society which took place **7-11 September 2005**. A full report of this event is given on pages 28-33.

12 January 2006. Annual Dinner and Presentation of Awards for the 2005 Silage and other competitions. Silage Winner was **John Caley**, Lheakerrow Farm, Andreas; runner-up, **Paul Fargher**. John Caley also came first in the Best Utilisation and Whole Crop classes. Prizes were also given for: Best Set Up, best Kept Silage Pit, Best Newcomer, Best Silage Analysis, Best Contractor Made Silage, Best Big Bale, Best Hay, Best Maize and Best Reseeds. **Grassland Management Competitions**. The Dairy award again went to **Paul Fargher**, Baldromma, Lonan. The Beef and Sheep winner was **Jim Caley**, Booilshuggel Farm, East Baldwin

6 March 2006. Visit to **Billown Farm**, Ballasalla. (Courtesy *Geoff & Eric Taggart*). A total of 166ha built up from 80ha in 1938 when the Taggart family first moved here as tenants. A mix of new cubicle and traditional buildings were efficiently used. The enterprise is farmed in two units with 150 dairy cows and sucklers. Crops include winter and spring wheat, winter and spring barley, spring beans and fodder beet, as well as 48ha silage and 56ha grazing. All cereals are fed as silage or grain and the beans combined and dried. All cows now bred to AI Belgian Blue or Simmental plus Limousin bulls. Billown is one of 30 farms which took part in a pilot agri-environment scheme. No N can be applied between October and mid-February and no stubbles ploughed before 1 March. Monitoring of birds by the Manx Bird Atlas 2003-2004 found 57 species with sizeable increases of lapwing, redwing and skylark. **Kennaa Farm**, St Johns (*Courtesy: Laurie, Margaret & Paul Kermeen*). After an AGM, the Manx Society enjoyed a farm walk at Kennaa, a north facing farm of 66ha plus 5ha rented at 50-80m in a 47 in (1018mm) rainfall but highly scenic area. The farm is now owned after renting by the family since 1927. One third of the 81 dairy cows are Shorthorn, one third Holstein and the rest cross-breds from Brown Swiss, Mountbelliardes, Meuse Rhine Issel (MRI) and Swedish Reds. Half are AI bred to dairy, half to beef and yields are 7,700 litres. There are also 180 cross bred ewes. The all grass farm is grazed on a 28-35 day rotational system on 11ha, using 0.2ha paddocks. Silage is made on 14ha. The lambs tidy up the cow grazings; the ewes remain on the high pastures but come down for 1 month at lambing. The cows are housed in kennel buildings. A new slurry/dirty water system was installed in 1997 and spreading is by an umbilical system.

25 March 2006. **Ballakilley Farm**, Lonan (*Courtesy: Sue & Stephen Goody*). Supper followed by a slide show of the BGS Summer Meeting in September 2005.

THE BRITISH GRASSLAND SOCIETY SUMMER VISIT TO ISLE OF MAN 7-11 SEPTEMBER 2005

R D Harkess OBE

The 60th Anniversary of the British Grassland Society was celebrated at the annual summer meeting held on the Isle of Man. Around 90 delegates were joined by a large contingent of enthusiasts from the Manx Grassland Society. The Empress Hotel in Douglas was the main centre of activity, although the annual dinner was held in the Douglas Hilton. At this Gala Dinner, Ken Baker reviewed the early years of BGS from 1945 to 1960. Presentations were made to two founder members who were present: Frank Raymond and Bob Deakins. Also, Bob and his wife were celebrating *on that very day* their 50th Wedding Anniversary – that must be true devotion - to grassland farming! The loyal toast was properly 'The Queen, Lord of Man'.

Introduction

On the first evening, the Society received a warm welcome to the Isle of Man, *'Ellan Vannin'*, from Mr Phil Gawne MHK (Member, House of Keys), Minister for Agriculture, Fisheries and Forestry. Mr Eddie Teare MHK then gave a powerpoint presentation on farming and the geography of the Island. The young farmers provided entertainment, with considerable fun directed at the expense of BGS members. For example, 'John Vipond' appeared as a bus conductor, 'John Marshall' as a traffic warden and 'George Fisher' as the purchaser of a very badly fitted suit which the tailor insisted was fine. It really was a laugh a minute, but we also enjoyed some very fine singing. A dance routine was performed by 3 young farmer couples, who had attended a special dance school in the UK for first time dancers. They were scheduled to appear on national TV later in the year. During the AGM, John Vipond handed over the President's chain of office to George Fisher, and Nigel Young was nominated as President Elect. Following the business meeting, delegates enjoyed another evening of humour and song provided by local entertainers – even 'Harry Lauder' turned up! The Isle of Man is a British Crown Dependency (as are the Channel Islands) and is not part of the EU but gains access to markets under Protocol 3, which was established as a part of the UK's entry to the EU in 1972. The terms of the protocol have barely changed since. No capital gains tax, no inheritance tax, lower standard taxes than in the UK, no milk quotas, producer co-operative creamery, a reasonable milk price deal with the supermarkets and one abattoir to

handle all stock. Marketing Associations are responsible for managing the markets and sale of produce. Government support to agriculture and the advisory services appeared to be similar to that available in the UK some years ago. The decoupling route has not been followed. This sounded like paradise but there are down sides – fuel and freight costs on and to the island are high; eg: £40 a tonne for feedstuffs and up to £100 to transport a mature cattle beast. A quarantine system is operative as part of the biosecurity scheme for the Island. The lack of markets is a disadvantage. General price levels are a little higher than at home. VAT is the same and water and house rates are levied on properties. Labour costs are high due to a restricted labour supply (unemployment currently 1.4%). The Island is very heavily involved in the financial services business which has encouraged immigration and a rise in property values. This has added to the difficulties for younger folks climbing onto the farming ladder and is pushing house and property prices beyond the reach of many first time buyers – a familiar tale. There are no constraints in taking up residence in the IOM but if employment is sought a work permit is required.

Competition Winner on a wet farm, Baldromma, Onchan *(Paul Fargher)* The first visit on day 1 was to this former beef farm, now a 93 ha tenanted dairy farm with a target lactation yield of 10,000 litres per cow, and a herd size of 145 cows. The herd has recently been expanded from 70 to 135 cows and a new dairy unit has been installed. We saw some good grassland on which all field work is done by contractor except slurry spreading, topping and rolling. As a first generation farmer, Paul has won the Manx Grassland Management competition on two occasions and is a silage competition winner. He is also very much involved with the running of the Island creamery. SWSGS members will recall that Paul was our silage judge in 1989.

Quality Beef/Sheep in the North, Kiondroughad, Andreas (*Mr Dick Pontin, manager Willie Kermeen*) presented a very fine herd of pedigree Limousin and Limousin cross cattle. The herd is recorded with Signet. 12-15 month bull beef is produced with an average weight of 340kg. The sheep flock is lambed half in January and half in March and comprises cross Suffolk to Texel and cross Texel to Suffolk ewes. All silage is baled. Numerous lamb and beef awards have been won.

'Merlin' Milkers and Quality Silage, Lheakerrow, Andreas (*John Caley*) is a 32 ha farm plus 36 ha rented, carrying 90 dairy cows and 60 youngstock. John runs the farm with help from the family and friends in the evenings and weekends. All the field operations are undertaken by contractors and his 3 silage cut system has won the Manx silage trophy 8 times. Of special interest was the

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visit to his two 'Merlin' automatic milking units which were installed in 2004 and are proving to be very successful.

Maximum milk with Jersey cross breds on grazed grass. Ballagloney, Santon (*Raymond & Dorothy Beggs*). Unfortunately, day 2 started off with some heavy rain but it cleared up later in the day. However, it did not detract from the interest in this visit. The Beggs moved to the IOM from Northern Ireland in 1998. The herd consists of 350 cows on 83 ha owned, 74ha leased, plus 36ha wholecrop grown on contract. 75% are block calved in spring and 25% in autumn. New Zealand Jersey and Friesian semen have been used across the herd for seven seasons resulting in 80% of the herd now being cross-bred. There is a strong emphasis on milk from grass with cows rotationally grazed from early February until mid-November. Current herd performance is 6,100 litres per cow with 4.4% BF and 3.5% protein. The conformation of the cows clearly displayed the lighter frame of the Jersey and were attractive animals. Because the weather limited the time on the farm walk, a group of those particularly interested in the breeding programme had an opportunity to return to the farm the following day.

Beef/Sheep on a steep upland farm. Booilshuggel, East Baldwin (*Philip & Jim Caley*). A beef and sheep farm of 280 ha with a further 60ha rented, and ranging from 150m-470m above sea level. Booilshuggel means 'Farm of the Rye'. The family connection with this farm goes back to 1640. A second brother, Mike, helps out at busy times. 18ha of spring barley is grown for grain and straw for home use. 120 Angus and Limousin cross cows are crossed with Charolais and Limousin bulls with calving split equally between autumn and spring. Last year the cows were inside from November 11 to May 7. Store cattle and the bullocks were housed on October 29 and the heifers on November 14 until sold April 20 this year. 350 Greyfaced ewes are lambed in March to Suffolk rams plus 300 Scotch ewes lambing in April. The Greyfaced ewes are housed 3 weeks before lambing but the 'Scotties' are only brought inside if the weather turns bad. 160 of the Scotch ewe lambs are kept as replacements and all other lambs are sold fat from mid August to January. The farm makes around 650 big bales and 900 tonnes of pit silage. The steepness of the farm was well demonstrated on the tractor and trailer tour round some of the grassland!

High Index Holsteins on Grazing and High Inputs. Ballalough, West Baldwin (*Andrew & Sue Sanders & Sons*). The herd was moved from Herefordshire to this current location in 1997 having been originally established in West Wales in 1975. The well known Sandisfarne herd of Holsteins was a most impressive sight. Ballalough is a 152ha former beef and sheep farm, the change to a dairy farm being still in progress and with 1500mm of rain it is

situated in one of the best grass growing areas on the Island. All grass silage is baled for flexibility. A further 88ha adjacent are rented and 320ha are rented in the north of the island, where 300 dairy youngstock are kept along with 400 ewes and 120ha of grain crops (winter wheat, triticale, spring barley and spring oats). The 380 cow herd at Ballalough has been closed for 27 years using only AI or home bred bulls and has a very high health status with no Lepto, BVD or TB. Breeding-wise, the highest genetic merit bulls are used with special attention to udders, legs and feet. Of note is the 'Arabis' family which has provided bulls for the Genus testing programmes, after the successful evaluation of S. Addision Arabis in the MOET herd. The herd average is presently 10,328 kg, lower than usual because of the large influx of heifers, the heavy use of home grown feeds through TMR and a reduction of bought concentrates. However, looking at the herd records there are many cows with lactation yields in excess of 15,000 litres and a group of 20 cows, in which each had achieved the 100 tonne status, was exhibited to us. The Sandisfarne herd topped the NMR's National Production Report in 2003 and 2004 and won the prestigious RABDF Gold Cup in 2003. What an impressive end to day 2 of the tour!

Prize-winning Aberdeen-Angus on former dairy farms Ballahowin, St Marks (*Howard & Lorraine Quayle*). This unit is farmed in conjunction with Ballavitchel some 3 miles (5km) away. The total area is 144ha, 42ha of which are rented. Howard's father did not want him to farm and so the original home farm was sold in 1979. However, the pull of farming saw Ballavitchel purchased in 1991 and Ballahowin in 2000. Interestingly, the old traditional farm buildings are presently being converted into 12 letting flats and a small conference centre. The herd consists of 32 Aberdeen Angus breeding cows, 28 Limousin cows and 60 commercial cows and heifers, 3 Limousin bulls and one Aberdeen Angus stock bull, the latter from the Coldstream herd in Canada, 14 yearling bulls for sale and 40 bulling and yearling heifers. The 40 bull beef are finished at 10-12 months with an average grade of U3L and weight of 295kg. Angus and Limousin bulls are sold locally and at Perth and Carlisle. 1000 tonnes of clamp silage made in one July cut, 200 round bales and 20ha of barley provide the winter rations. Cows are buffer fed baled silage from the end of September, moving to pit silage as the main winter feed. Calves are creep fed. Both farms were previously dairy farms and a major discussion centred on the inherent dock problem. Ploughing, reseeding and the spraying of grazed areas with 'Dockstar' were slowly beginning to show some improvement. The Quayles were silage competition winners in 2002 and 2004, they were supreme champions at the Royal Manx show last year, and at Carlisle were reserve champions with an AA bull which achieved the highest price of £5,000. At the Perth bull sales, they were intermediate champions in 2003, and in 2004 their bull sold for 6500 guineas. Also in 2004 they achieved the British record price

for a red AA bull at £7,000. Earlier this year they won the Elkington Challenge Gold Cup at the Royal Show. Needless to say we were privileged to see some very fine cattle.

Multi-field, multi-landlord farming in a scenic area, Glendown, Port St Mary (*Derek & Jane Cain*). Glendown is located at the south end of the island, overlooking the Calf of Man, and has been in the Qualtrough family (Jane's family) for eight generations. The 125ha originally had 146 fields but this has now been reduced to 110 with nine landlords! Soil depth is shallow and with only a 750mm rainfall, the grassland is subject to burning in summer. The herd comprises 88 dairy cows averaging 7,400 litres and fed on an easy feed system with concentrates fed in the parlour. Holstein, Belgium Blue and Limousin semen is used. 300 mule ewes are carried and crossed with Texel or Suffolk rams to lamb in March. Lambs are grass finished from July to January. The junior family members have a small flock of native Manx Loughtan sheep. Over the past 20 years fields have been reclaimed and reseeded by burning, scrub cutting, ploughing, liming, green cropping and slurry seeding. Examples were seen on the farm walk, as were several aspects of the Island's Agri-Environment Scheme. The farm is very suited to the scheme with tree planting and choughs and lapwings in evidence on the coastal heath land. The adoption of the scheme has proved to be popular with the public and politicians alike and after being driven to the top of the cliff area, the walk back to the trailers, across the fields and along part of the public right of way, enabled delegates to enjoy the stunning beauty of the area. Plans are to diversify into holiday accommodation and part of the cliff top has been used as a film set for a production with Sean Bean, a disruption, say the Cains, that they could cope with again!

Alternative Programme

The first day's visits were to the west of the Island, seeing Moore's Manx Kipper Factory and Museum for which the fishing village of Peel is famous. The history of the Island was portrayed in the House of Manannan museum. In the afternoon was seen a man-made tiered hill, Tynwald Hill, where the world's oldest parliament, The Tynwald, meets once a year on 5 July to celebrate the Island's national day. The Tynwald Woollen Mills close by rounded off the day's visits. Balla Kinnish Nurseries, producing top quality roses with space age technology and Isle of Man Creameries, Bradan making cheese in support of the Island's dairy farms formed the second morning's visits. This was followed by lunch at a modern country house, Farrants Fort with beautiful gardens. Laxey's world's largest working water wheel, the Lady Isabella, was seen on the way south to Douglas. The last day took the visitors to the old capital of Castletown, with a well-preserved mediaeval castle. Then at the southern tip of the Island, Port Erin and Port St Mary were passed to see the currents racing between the

main Island and the smaller Calf and Kitterland isles. A visit to Cregneash village saw 19th and early 20th century Manx styles of farming. The main tour was then joined for lunch at Glendown farm before travelling on the narrow gauge rail by the recently renovated steam train to Douglas, and then by horse tram to the hotel.

In Conclusion

The Alternative Programme had been arranged by Jane Cain and Jean Caley. At lunch times, morning coffee and afternoon tea of the main tour, all the food and refreshments were prepared and presented by a group of farmers' wives. The appreciation of all their hard work was recorded by the rapturous response to the vote of thanks. Over three days we had seen innovative farming and excellent dairy and beef stock with grassland playing the key and vital role in the farming systems. Thank you to all our hosts, to the day chairmen, to the organising committee chaired by Martin Lambden and to host vice president Allan Skillicorn, for a stimulating, friendly, and informative visit. Angie Goody, the Manx Grassland Society Chairman was an absolute gem and kept the show on the road and on time. Finally, although farming on *'Ellan Vannin'* has its pressures, the enlightened approach to the industry by the Manx government is to be applauded. Before leaving, there was a brief opportunity to meet Andrew MacDonald from SAC Lanark who has been seconded to the Manx government service on a four year contract, so furthering the IOM/SAC advisory link. Scotland was represented on the tour by: Jim & Mrs Dobie, Largoward; Ron Harkess, Perth; Chris Leith, Ellon; John Marshall, Castle Douglas; Michael Shannon, Biggar; John Vipond, SAC and Drew Wyness, Stonehaven.

RISING TO NEW CHALLENGES AT BGS

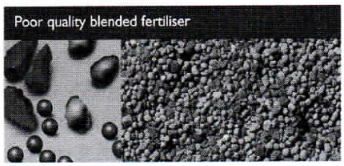
John Vipond, Sheep Specialist, Bush Estate, Edinburgh
President of the British Grassland Society 2004-2005

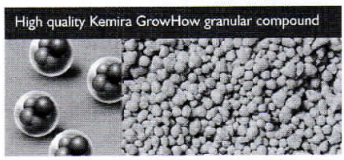
Despite the unexpected turn of events with the sad loss of our Chief Executive, 2004-2005 was a good year to be President of the BGS. The decoupling of subsidies from production in the livestock sector and the challenge of combining food production whilst meeting environmental needs re-awakened the role of grassland and the BGS. Traditionally, the BGS President organises the Winter Conference but despite cheap air travel, conferences are expensive in time and farmers were not turning out. So we decided to take the speakers to the industry with a roadshow visiting England, Scotland and Wales. Two Scottish speakers – Marcus Maxwell (sheep) and Wilbert Girvan (suckler beef) subsequently went on to become finalists of the Farmers Weekly Farmer of the Year competition and Marcus from New Galloway won the sheep section. Both these farmers had innovative, profitable grassland based enterprises showing how to farm with less reliance on support. Both still feature as technical examples in the SAC/SAOS (Scottish Agricultural Organisation Societies) Profit without Subsidy Toolkit to help farmers adjust to the new situation. This is a good example of how BGS can act as a catalyst in promoting new grassland systems whilst also giving encouragement to emerging innovators in the industry. My year coincided happily with the XX International Grassland Congress held in Dublin – a superbly organised event thanks particularly to Frank O'Mara, secretary, aided by Roger Wilkins from the UK. I attended the main conference, which drew around 1000 participants, and also the satellite in Cork, which was equally as successful as those held in Glasgow, Belfast, Aberystwyth and Oxford. Looking back on the papers presented I see the potential benefit of the research conducted. I am shocked and worred by the scale of withdrawal of funding for research on grass and its utilisation at both IGER in Aberystwyth and more recently at the MLURI Institute in Aberdeen. We are losing our competence in grassland science at an alarming rate just at the time when the demand for technical answers is starting to blossom.

I was also lucky to be President in the year of our first summer tour to the Isle of Man where we were superbly entertained and informed and where I handed over office to George Fisher. George certainly hit the ground running and the consequent appointment of new Society Director Jessica Buss has led to many beneficial changes in the Society with a complete review of policy. The Society as a result has moved forward in a very positive way. In my year as President Elect I remember Will Taylor (President 2003-2004) commenting that a year as President was brief – long enough to have an effect but not long enough to do lasting damage – hopefully, as far as my year was concerned he was right!

Quality Matters

True Granular Compounds gives £20 / acre





The difference between using a poor quality and a high quality fertiliser can be as much as £ 20 / acre (£ 50 / ha) based on silage @ £80 tonne Dry Matter and a 10% yield response to a quality fertiliser.

So what makes up good quality product?

- Free Flowing
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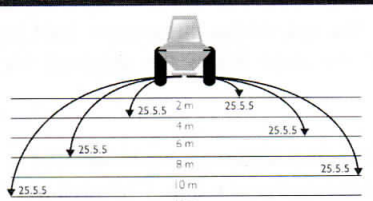
Spreading Benefits

In the examples below, spreading tests undertaken by Kverneland show that the nutrient analysis delivered to a given point by a blended fertiliser varies depending on the quality of the blend, calibration of the spreader and the bout width.

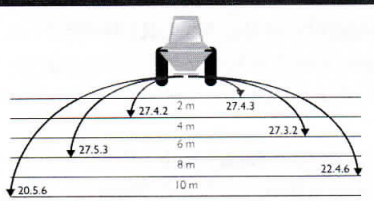
The overwhelming conclusion from the Kverneland tests are you can set a well maintained spreader to spread most products accurately in terms of physical spread but a CCF **always** delivers nutrients more accurately and uniformly than a blend.

Spreading pattern: Kemira GrowHow Swardsman®



Declared analysis 25.5.5; Actual analysis 25.5.5
The required plant nutrient delivered to the plant accurately

Spreading pattern: Blended



Declared analysis 25.5.5; Actual analysis 27.5.5
Plant nutrient not delivered accurately

Contact your local GrowHow Adviser
Mark Garrett on 07885 945674

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GRASSLAND – A GLOBAL RESOURCE
The XXth International Grassland Congress held in Dublin, 26 June –12 July 2005

G E D Tiley

The International Grassland Congress is held every four years in a different country across the world. The first congress was held in Leipzig in 1927, the twentieth in Dublin in 2005, hosted jointly by the Irish Grassland Association and the British Grassland Society.

This was truly an international event with over 1000 delegates from 80 countries, ranging from Australia, the Far East, Africa, north and south America to Europe, UK and, of course, Ireland.

The three primary themes were:

1 Efficient production from grassland
2 Grassland and the Environment
3 Delivering the benefits from grassland

These were sub-divided into many subsidiary themes covering practically every branch of grassland science and practice. There were 4 plenary papers, 29 invited papers and 829 offered papers and posters, all arranged in concurrent schedules in 4 locations over 4 days, and 3 plenary sessions. There were 9 mid congress tours to different locations in Ireland on Wednesday. The main congress was followed by short 3-day post congress satellite workshops on specialised topics (plant breeding, silage, grazing, marginal grassland and soil nutrients) in 5 centres : Wales, Northern Ireland, Scotland, Ireland and England.

One afternoon session ('stakeholders') was assigned to 4 UK farmers including our own David Kirkpatrick, Auchenbainzie, south west Scotland, to state their current problems and how they proposed to address them.

Another session was dedicated to the memory of Jan Crichton, BGS, who had originally proposed and organised it. This discussed the role of local grassland societies in which SWSGS was represented by a poster paper. The main thrust of this session, developed and sponsored mainly by the American Forage and Grassland Council, was advocating the benefits of co-operation looking to using the website on an international scale, possibly creating an international union for grassland science. There was a need to educate children with farm information and also how to handle the media.

One of the mid-congress tours featured species-rich grasslands in Ireland and took a group (2 buses) south west of Dublin to the Curragh, near Kildare. Just to remind all delegates why Ireland is so green, the morning was greeted with heavy, very dampening rain. Not an auspicious start since the buses were late arriving. The Curragh is the largest unfenced area (2,300 ha) of lowland grassland in Ireland and contains a high concentration of archaeological features and earthworks. The land has been continuously under grass for over 1000 years and is now grazed mainly by sheep. Some of the area is used for military training. At the north side is the famous Curragh racecourse guarded at its entrance by the statue of an equally famous racehorse, Ridgeway Pearl. In another part is the Great Heath with its centre managed as a golf course where the sheep prefer to graze as the grass is better managed and there is less gorse. A rich variety of plants, fungi and birds inhabit this ancient stretch of grassland.

The satellite workshop on **Pastoral systems in marginal environments** was held in Glasgow, with a day field trip to the SAC Hill Farm at Kirkton, Crianlarich. The workshop attempted to cover a wide range of difficult grassland environments from deserts in Texas, dry saline habitats in Australia, tropical rangelands, steppes of Mongolia, to hill and mountain pastures. Soils, legumes, agroforestry, selection of diets, preservation of diversity, social factors were all included in the discussions. At Kirkton, the land use history of the Highlands, deer, forestry, grazing, wildlife and National Park issues were demonstrated and detailed, including field visits to some of the development projects in progress on the hill pastures.

Some Points Noted in the Main Congress: In a keynote paper by FAO staff on the use of grassland to improve world livelihoods and reduce poverty, it was stated that 842 million people were under-nourished, and 2.8 billion lived in absolute poverty (less than 2 dollars per day) yet 1 billion suffered from obesity. Grassland occupies 20-40% of the world's surface and there is scope for increase in livestock production, particularly in developing countries where the demand for meat and milk is increasing. Extensive grazings in semi-arid and mountainous areas and intensive smallholder systems for urban areas will be important. However, care will be required to prevent environmental and soil degradation and damage to water resources. Concern was expressed in several papers over the substantial emissions of methane and nitrous oxide from grasslands. An estimated 55% of methane and 75% nitrous oxide in the world's anthropogenic emissions are derived from agriculture. Methane has 23 times and nitrous oxide 296 times the global warming potential of CO_2. The principal source of methane is as a by product of rumen fermentation. Nitrous oxide arises from nitrification and denitrification in the soil. Nitrification of ammonia to nitrate takes place in aerobic conditions, whereas denitrification of nitrates to

nitrous oxide and nitrogen is under anaerobic conditions. Practical methods to reduce greenhouse gas emissions are limited and research is given a low priority since emissions from agriculture are minor compared with total gas emissions in the developed world. Direct manipulation of the rumen ecosystem and reducing the amount of N excreted by grazing animals would be required to substantially reduce greenhouse gas production in agriculture.

Other key issues highlighted were:

- Grassland farmers in the UK are regarded as custodians of the countryside but the public increasingly require access to a countryside which is not polluted and which demonstrates ecological balance with attractive landscapes.
- Grassland has the potential to enhance the content of beneficial fatty acids in meat and milk.
- Legumes for tropical farming systems require further development.
- Forage grasses could be developed for non-food use, eg: biomass.
- There is a need to find a market payment system for environmental values.
- Future grassland expansion may be limited by water scarcity in some regions of the world. Water quality is already a problem from salts in the soil solution.
- Adaptations in management may help to mitigate the effects of climatic change but good grazing management can increase carbon sequestration in the form of soil organic carbon.
- The importance of technology transfer and farmer involvement in research.

Delegates were left with the impression that the highly successful XXth IGC was the culmination of a fantastic feat of organisation by the Irish Grassland Association, BGS and the IGC Committee over several years of preparation. These organisations deserve fullest congratulations with particular mention of Congress Secretary, Frank O'Mara, for his phenomenal efforts in ensuring a smooth, well-run meeting. The helpful and pleasant Irish demeanour of his helpers and counter staff in dealing with visitors of so many different nationalities was a conspicuous contributory factor toward the enjoyment of the event.

The IGC is a unique forum for enthusiasts with a common interest – **grassland**: where it is possible to discuss one's own particular interests with almost anyone from any country; where new ideas, approaches, concepts are spawned, ready to take home and perhaps develop.

Copies of the Proceedings of the Congress and of the Glasgow satellite meeting are available in the Library at SAC Auchincruive.

WASTE MANAGEMENT PLANNING and CO-PRODUCTS.

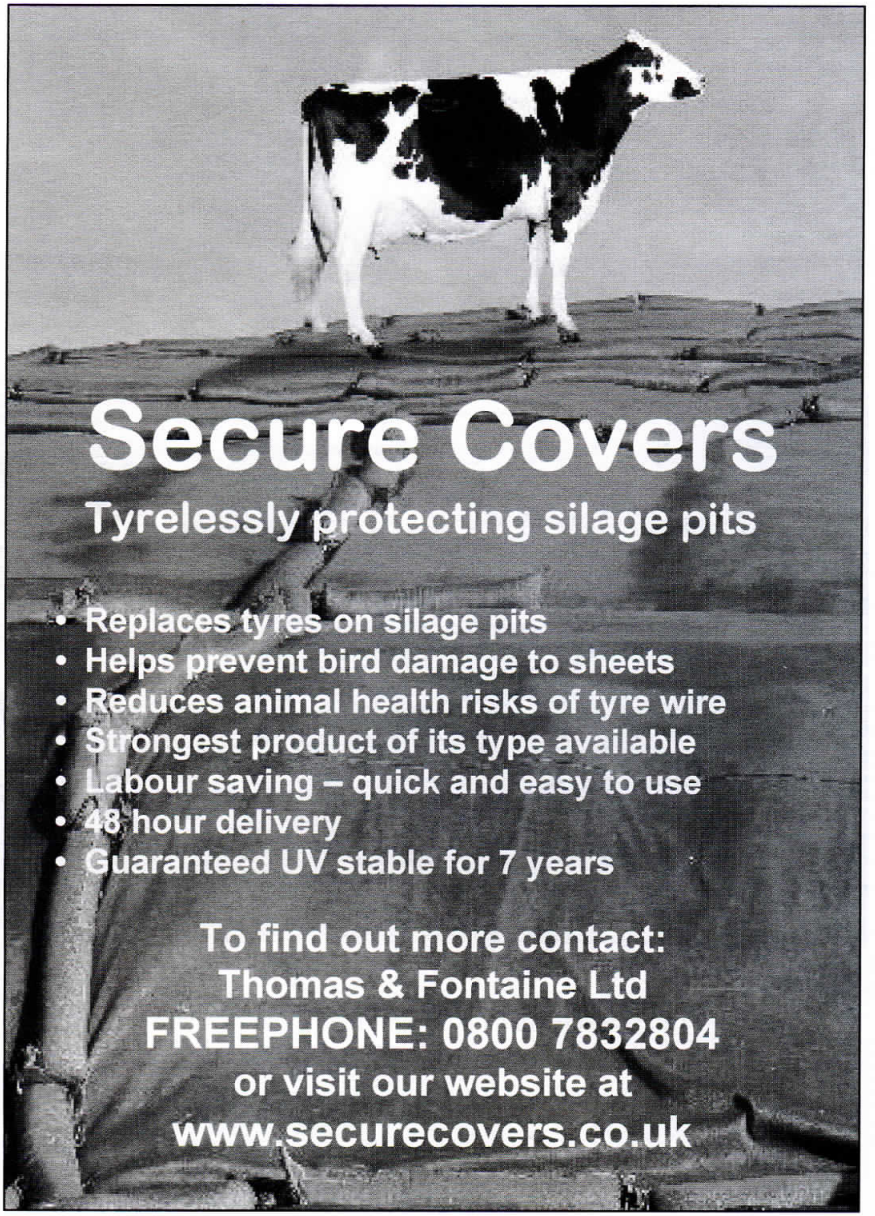
Tommy Loudon, Ayrshire and Arran FWAG, c/o SAC Auchincruive

The first time I heard the term 'co-products' was a few years ago at a farm walk on the banks of the River Spey. We were being told how all the farmers along the Spey take full advantage of the co-products from the whisky industry. The draff, pot-ale and humus sludge, all waste from the production of the whisky making process, certainly wasn't wasted. The draff is collected and delivered in 25 tonne bulk loads to farms all over Scotland. Pot ale is delivered by tanker, again all over Scotland, to increase milk yields and mix in the feeder wagons to promote live weight gain in quality Scottish beef cattle. The humus sludge is the last wash of the whole distilling process and this black juice washes out of the distilleries into huge concrete storage tanks where local farmers are contracted to spread it onto their fields. One farmer I talked to was able to dramatically cut his fertiliser bill after he had started to spread the humus sludge on his grassland.

What co-products are there on a commercial farm? The last farm on which I did a Waste Management Plan had **slurry**, **farmyard manure**, **silage effluent, dirty water** and he also brought in 2500 tonnes of organic matter from his local council area in Dumfriesshire. The compost consists of garden waste, vegetables and paper crumb that soaks up any effluent in the compost. It is turned by mechanical shovel every 3-4 days and the rows of compost reduce to one fifth in weight. The 2500 tonnes reduce down to 500 tonnes and are then spread as an organic fertiliser onto designated fields.

There are many benefits of an on-farm Waste Management Plan as well as securing the Single Farm Payment for the future. The plan focuses the farmer's mind on co-product issues and highlights how his resources can be used to most effect. There is now a Water Frame Work Directive. A WMP will show the authorities that your business is managing your 'priority substances' with responsibility and any problems on farm are being tackled with a sensible and economic timetable that suits your bank balance. A personalised plan will also introduce any new technology such as constructed wetlands that could help a dirty water problem for example or give the lowdown on the latest in oil storage legislation. FWAG's new Waste Management Plan template has been put together by experienced advisers from Scotland, is continually being updated to suit the farmer and is SEPA and SEERAD approved. To discuss a WMP for your farm, please call the Perth Head Office (01738 450500) or get in touch with your nearest FWAG adviser (Ayrshire & Arran 01292 525206, Dumfries & Galloway 01387 760576, Lanark 01555 660288, Central 01786 870185).

Constructed Wetland on a Farm in Dumfriesshire.



thomas & fontaine

SWSGS SILAGE COMPETITION 2005
Competition Evening of SWSGS, held in Lochside House Hotel, New Cumnock on 26 January 2006

G E D Tiley

Sponsored by ***Ecoysl Products Ltd, Biotal Ltd, BP Agri Ltd, John Watson Seeds Ltd,*** *and* ***Volac International Ltd***

Silage Judge: Mike Taylor, Russell Farm, Burton, Carnforth

SWSGS Chairman, Adam Gray, welcomed an enthusiastic gathering on a cold evening to the spacious meeting room of the Lochside House Hotel. The local branch of the Blackface Sheep Breeders Association happened to be meeting in another room on the same evening. Mike Taylor, the Silage Judge had left his dairy farm in North Lancashire for 3 days to carry out his assessment of silages in south west Scotland. He was a frequent winner of silage prizes in his own local grassland Society and his heavily stocked farm run on simple lines was a favourite for visitors.

Silage Quality 2005 – Andrew Leggate, SAC Farm Business Services, Ayr. 2005 had been a 'life-saving year' with very good weather; this was reflected in the general level of analyses, particularly from Ayrshire (Table 1). This did not affect one local farmer who, on the last day of the year, used to brand every year as 'the worst year ever'! Dry matters were very high, dairy silages on average higher than beef/sheep or big bales. D-values were also high but there were many instances of low proteins in the Ayrshire area, though not so in the Competition averages. As usual, ammonia levels were low. Results were uniformly good across all four counties with Ayrshire highest. Last year's DM figures were the highest for 5 years, 2002 being the worst year. Intake Factors were also higher this year though D-values were higher in 2004. It had been a challenging season for maize. High levels of leatherjackets had been found on some over wintering fields in Ayrshire. It was cost effective to carry out soil core sampling for this pest on susceptible farms, to determine whether spray control was necessary.

Judith Clayton, representing Ecosyl Products Ltd, one of the evening's sponsors, gave a brief description of a new ultra low-volume (ULV) applicator for silage additive. This applied 20ml tonne^{-1} in 20l water, equivalent to 1 million bacteria. The applicator incorporated a precision pump and flowmeter with a control box. Cost was £600. A new ULV additive was available to use with the applicator. Trials had shown an increased rate of fall in pH, higher DM intake and D-value, resulting in higher milk yields.

Silage Judge's Comments

Mike Taylor said he had much enjoyed judging silage, though he had to cover a huge area. Among all the short leet entries, he had found every one good without exception. However he felt that earth bank silos were being overfilled. "Extra cows to feed were making the buckrake go higher and higher". The contrast between conventional and non-conventional units was tremendous, the non conventional likely to become pre-eminent in the next few years. He complimented the top three Dairy and the Beef/Sheep winners for their excellent management systems. Management of the commercial herd at SAC Auchincruive and also the sheep management at the winning Beef/Sheep farm at King's Arms he thought 'were perfect in every respect'. As a closing comment, the Judge suggested the Silage Competition should award marks for lifestyle!

Silage Winners' Comments

Robert Dalrymple, Crailoch thought that there was a lot of luck in making good silage. He grazed the fields until 1 April so that silage start was later than on a typical dairy farm, thus making it difficult to achieve the highest quality. Attention to detail was necessary: N applied at the correct time; checking the weather forecast from several sources. A spreader mower had been purchased as a dry silage was important for good sheep intake. **John McAuslan, SAC Auchincruive** also attributed his success to luck but, in addition, very much to the team effort and enthusiasm of his staff. He also watched weather forecasts very carefully,trying to interpret them, as good weather was very important in making good silage. In particular, sunshine was desirable on the grass for 2-3 days before and on the day of cutting. 'For milk, sun was not needed on the back of the cow but on the grass'! The farm begins cutting with its own mower, then the contractor is brought in to cut the rest quickly. Forage harvesters are bigger and bigger and the grass is picked up and brought in very quickly. An additive is not necessary but is used as an insurance. The doors of the mowers are kept wide open to achieve maximum spread and the grass wilted for 24 hours if possible, dependent on weather conditions. Both tyres and plastic net covers are used to weigh down the sheet. Cutting started on 15 May in 2005. N is applied on time, usually late February after slurry in winter and PK in late January.

Judge's Farm, Russell Farm, Burnton, Carnforth

Mike Taylor farms a 76ha tenanted farm 5 miles from Morecambe Bay. His wife was a nurse and daughter a Merseyside police officer. He had simplified his system by stopping growing maize and wholecrop and changing from AI to using 3 bulls. The farm was compact and slurry could be spread by an umbilical system covering the whole area. In 2005 the 210 cows were turned out on 28 March until early November. There were 4 groups of cows: High Yielders,

above 30l, Low Yielders 15-30l, together with 2 groups of heifers. There was no milk fever. A semi TMR diet was fed based on high quality, 70 D silage balanced with plenty of straw (2 kg cow^{-1} day^{-1}) pressed sugar beet, minerals, yeast and a maize gluten compound, Trafford Gold (20% protein). Stocking rate was 3.05 cows ha^{-1}, on a high input, high output system. The parlour was a 15/30 and average yields were around 8,500 l, sold to Dairy Farmers of Britain. In addition to Mike, there was one full-time and 2 part-time workers (26 hours $week^{-1}$). Calving was all the year round to Simmental bulls; all calves were reared using a computerised milk feeder, and sold to a local beef finisher. Digital dermatitis had been a problem but was now controlled. In conclusion, Mike did not wish to work 7 days a week and thought that in the future, 'Quality of Life' would be important on dairy farms.

Table 1 - SILAGE COMPETITION 2005 - ANALYSES MEANS

Overall Means - Grass Silages

Group (Number)	DM (%)	D (%)	CP (%)	ITF (C)	ME	NH_3 (% total N)
All Dairy (54)	31.3	70.3	13.9	117.0	11.2	6.9
Beef/Sheep (13)	28.9	66.2	12.2	109.3	10.6	8.8
Big Bale (5)	30.1	63.6	12.9	108.8	10.2	10.6
Dairy						
Ayr (16)	35.6	71.2	13.9	122.2	11.4	7.8
Dumfries (16)	32.5	70.4	14.0	115.9	11.3	6.9
Kirkcudbright (15)	28.8	69.6	14.2	116.1	11.1	6.0
Wigtown (7)	28.5	70.0	13.4	113.7	11.2	6.9

Wholecrop, Maize and Alkalage Silages

Group (Number)	DM (%)	pH	D	CP	Starch	ME
Wholecrop (8)	45.0	4.1	67.6	9.9	28.6	10.8
Maize (5)	29.3	4.0	65.2	9.5	20.5	10.5
Alkalage (7)	78.7	7.0	64.1	12.2	36.9	10.3

Table 2 - FREQUENCY DISTRIBUTIONS (%) 2005

	Bale	Beef/ Sheep	A	D	*Dairy* K	W	All
No of Entries	5	13	16	16	15	7	54
D-Value							
>75	0	0	18	25	7	14	17
70-75	0	23	44	37	47	29	40
65-70	80	61	38	32	40	57	39
60-65	0	8	0	0	6	0	2
<60	20	8	0	6	0	0	2
DM							
>40	0	0	31	6	6	0	12
30-40	60	46	50	57	20	29	41
25-30	20	31	13	18	60	57	33
23-25	20	23	0	13	7	0	6
20-23	0	0	0	0	7	14	4
<20	0	0	6	6	0	0	4
CP							
>18	0	0	0	0	7	0	2
16-18	0	0	6	19	13	0	11
14-16	40	15	57	44	27	57	44
12-14	20	23	6	25	53	14	26
10-12	40	62	31	6	0	29	15
<10	0	0	0	6	0	0	2
ITF (C)							
>125	0	0	50	32	13	0	27
120-125	0	8	32	6	13	29	19
110-120	60	38	6	31	60	29	31
100-110	20	46	6	25	14	42	19
90-100	20	8	0	6	0	0	2
<90	0	0	6	0	0	0	2
Ammonia-N							
<4	20	8	13	13	13	13	13
4-7	0	23	13	37	47	29	31
7-10	20	38	56	37	40	29	43
10-15	40	23	18	13	0	29	13
15-20	20	8	0	0	0	0	0
ME							
>12	0	0	18	19	0	14	13
11.5-12.0	0	8	25	31	20	14	24
11.0-11.5	0	15	38	25	33	29	31
10.5-11.0	80	61	19	19	40	43	28
10.0-10.5	0	0	0	0	7	0	2
9.0-10.0	0	8	0	0	0	0	0
<9.0	20	8	0	6	0	0	2

Table 3 – 2005 Silage Competition – Short Leet Entrants

Prizes		Marks *Analyses (35)*	*Inspection (65)*	*Total (100)*
	Dairy Class			
1st & SWSGS Rosebowl	J McAuslan, SAC Auchincruive, Ayr	34.8	53.0	87.8
2nd	W Welsh, Arness, Fenwick	32.3	48.0	80.3
3rd	J & R Ramsay, Lodge of Kelton, Castle Douglas	33.8	46.0	79.8
	K Campbell, Slagnaw, Castle Douglas	26.6	53.0	79.6
Michael Milligan Prize	A Shankland, Langdale, Ballantrae	29.7	49.0	78.7
	H McClymont, SAC Crichton Royal Farm, Dumfries	32.6	43.0	75.6
	WJW Hogarth, Knockrivoch, Saltcoats	30.3	43.0	73.3
Best New Entrant	A Brown, Balker, Stranraer	27.3	44.0	71.3
	R Christie, Dourie, Port William	23.3	48.0	71.3
	JA Dunlop, Bishopton, Kirkcudbright	27.8	39.0	66.8
	J Murchie, Hawkshole, Canonbie	31.2	34.0	65.2
	Beef/Sheep Class			
1st & BP Trophy	H R & C Dalrymple, Crailoch, Ballantrae	27.4	55.0	82.4
	W T McCombe, Trohoughton, Dumfries	18.3	41.0	59.3
	Big Bale Class (on analysis)			
1st	N McGill, Low Carseduchan, Whauphill, Newton Stewart	22.2	-	-
	Best Silage in County (on analysis)			*Analyses (35)*
Ayrshire	J McAuslan, SAC Auchincruive, Ayr			34.8
Dumfries	H McClymont, SAC Crichton Royal Farm			32.6
Kirkcudbright	J & R Ramsay, Lodge of Kelton, Castle Douglas			33.8
Wigtown	M Forster, Challoch, Leswalt			31.1
	Best Wholecrop Silage (on analysis)			*Marks*
Biotal Prize	S Craig, Back of Wall, Glenluce			71.5%
	Best Maize Silage (on analysis)			
Nickerson Prize	J K Fisher, Cruggleton, Whithorn			48.7%
	Best Alkalage Silage (on analysis)			
Volac Prize	R Hamilton, Barmoorhill, Tarbolton			58.8

Best New Entrant prize donated by **John Watson Seeds Ltd**

1st **Dairy, Beef/Sheep** and **Big Bale** winners also received cash tokens donated by **BP Agri Ltd**

SCOTTISH SILAGE COMPETITION 2006
BGS Scottish Silage Trophy
R D Harkess OBE, Perth

The annual silage competition for the British Grassland Society's Scottish Silage Trophy has been won this year by John McAuslan, Auchincruive Farm, Ayr with 89 marks. The competition is organised by the four local grassland societies and SAC, along with the Scottish representative on the BGS council, presently Iain Taylor of Gowanwell, Turriff. The winning silage from each of the societies: South-West Scotland, Central Scotland, East of Scotland and North of Scotland, goes forward to compete for the Scottish Trophy. Initially, there was a total of 150 entries across the societies, so a place in the final round is highly commendable. The runner-up was the Spalding family, Balconnel, Brechin (North) with 75 marks, the other finalists being Robert Buchanan, Pow Mill by Dollar (Central) 74 marks and Ronald Pollock, Bonnyhill, Bonnybridge (East) 73 marks. Balconnel is a beef/sheep enterprise; the others are dairy units.

Judging is based on a silage analysis worth up to 35 points plus a further 65 points from an on-farm visit by a nominated judge. During the inspection, points are awarded for silo management, control of effluent and animal wastes, field operations, feeding efficiency and animal production with a final section on health, safety, welfare and overall impression.

Judge's Comments – Good quality silage was made in 2005. Two of the entries scored over 30 points for their analyses. Indeed the winning entry scored the maximum 35 points, a feature not encountered in any previous competition. Timely cutting, a good dry matter content of 28% plus, rapid ensiling and efficient sealing remain the keys to success. An inoculant additive was used by three of the finalists and interestingly, all silos were outdoor clamps. All farms scored well on effluent control and efficiency of the feeding system.

AGROS DOMINATOR – A Unique Silage Additive from Volac International

Agros Dominator is designed to reduce forage losses and improve the nutritional performance of 20 –30% dry matter silages that have been wilted for 12+ hours. It is unique in that it contains twice the concentration of bacteria compared with traditional additives as well as a stimulant to prime the lactic acid bacteria before application. See last year's Greensward, page 42. The informative free **Forage Management Guide** is available from Volac – please call Freephone 0800 919808 for your copy.

BGS NATIONAL GRASSLAND MANAGEMENT COMPETITION 2005
Sponsored by DLF Trifolium and Kemira GrowHow

DLF Trifolium have now joined with long term supporters Kemira GrowHow in sponsoring the BGS National Grassland Management Competition, which evolved from the previous UK National Silage Competition. The 2005 winner was **Glasnant Morgan**, beef/sheep farmer from Pwllyrhwyaid, Brecon, S. Wales. He is the first beef/sheep farmer to win this competition, having impressed the judges by a very efficient production of quality finished and store livestock in parallel with great emphasis on care for the environment and landscape. Glasnant farms in partnership with his wife Linda and son Huw on a half owned, half tenanted holding. The climate and physical conditions are difficult; rainfall 1800mm, altitude 150-400m above sea level. Most (152ha) of the 184ha farm area is in a *'Tir Gofal'* (environmental) agreement. 1000 cross bred ewes from Welsh Mountain stock produce premium grade finished lambs (Texel, Charollais rams). A 60-cow suckler herd produces stores sold at 12-18 months. Turnips, forage rape, swedes and also red clover are grown for the sheep; wholecrop spring wheat and spring oats for the cattle. Minimum fertiliser is used and farming is geared to work in harmony with nature and landscape to generate significant income.

Runners up were: Andrew and Janet Anderson, Spittals Farm, Eden Valley, Cumbria with an expanding dairy unit; Stuart Bacon, Coombe Farm, Crewkerne, Somerset, also with an expanded dairy herd aiming for maximum milk from grazed grass. Scotland was represented by the Willis family, Aberdeen.

NEW SOUTH WALES GRASSLAND SOCIETY

Reading a recent Newsletter from the Grassland Society of NSW Inc., this Society is described as 'a unique blend of people with a common interest in developing our most important resource – our Grasslands'. The NSW Society is larger (563 members) than CSGS or SWSGS and covers a vastly greater area - over 300,000 sq miles (800,000 sq km). Much of this area has low rainfall except the coastal strip. The membership profile is similar – 75% farmers, with advisers, scientists and commercial staff. However the aims are much more research orientated – 'to advance the investigation of problems affecting grassland husbandry and to encourage the adoption into practice of the results of research and practical experience'. Most of the Newsletter contains short papers giving the results of trials and projects. The Annual Conference has a similar content. *Acknowledgements to the NSW Grassland Society and to Will Taylor for a copy of their Newsletter.*

Secure Block Tyre Recovery Service

A low cost, environmentally friendly solution for recycling waste car tyres on farm.

The service uses a mobile tyre blocker to compress up to 120 tyres into a Secure Block measuring 60"X50"X30" and weighing 1 tonne. The service is fast and efficient, producing 4-5 blocks per hour.

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MILK PRODUCTION IN THE DESERT

Andrew T Leggate, SAC Farm Business Services, Ayr

A trip during September 2006 to the United Arab Emirates (UAE) on a SAC contract to look at milk production and milk processing revealed similarities and differences in milk production between the UK and the Middle East. One of the main differences is that the cows have no access to fresh grass or silage of any type. All feed is bought in, with baled alfalfa imported from USA or Spain providing the forage component of the diet, though minimum quantities are fed, as obviously transport costs are high. A problem that some producers are finding is that the fibre content of the alfalfa hay is declining as American growers are cutting the crop earlier in the season. The concentrate component of the diet is similar to UK diets though the main cereal is ground maize which is fed with wheat, soya, maize gluten, cottonseed and other straights. The only home grown crop is poor quality hay made from uncultivated Rhodes Grass (*Chloris gayana)*, a sub-tropical grass growing in rough areas. It is of very low feed value but provides valuable fibre for low producing stock. D value is lower than barley straw. Average summer temperatures are in excess of 45°C and the cows will only milk to potential if they are kept indoors under a system of sprinkler fans which deliver a fine mist of water. I enjoyed standing under them myself to cool down in this hot climate! There are large loafing areas available to the cows out doors but during my visit the cows only went outside to travel from their housing and feeding shed to the milking parlour. A major limitation is water supply. Water is pumped from wells but the ground water level is dropping. The main source of water is from seawater *via* desalination plants. There was once widespread cropping but irrigation has now ceased and very little land is being cropped. Desert accounts for 90% of the total land area. Other big advantages this desert country has over the UK are the systems of housing and in particular of slurry handling. The cows lie on a deep litter system of sand under the sprinklers. The slurry from the feeding passages is scraped out daily and mixed with sand before being composted and sold for around £12 per tonne collected, for gardens. Droppings are also collected by hand from the surrounding outdoor areas.

The cows on many of the farms are milked 4 times a day by workers of a range of nationalities including Egyptians, Indians, Pakistanis, Sudanese, Somalis and Philippinos. The frequency of milking is difficult to justify with average annual herd yields ranging from 4,500 to just over 10,000 litres per cow. Labour costs are low and the milkers are paid less than £1,000 per annum. All the farms have one or more full time vets with salaries ranging from £2,000 to £10,000 per year depending on their experience and level of responsibility.

Milk Marketing and pricing is not unlike the UK, with around 6 dairy processors who buy the milk from farms under contract. Current price is 29p litre^{-1} dependent on composition and hygiene. Somatic cell count is not measured for payment purposes. Milk supply and demand is also an issue. Production declines during the hot summer months when demand increases. There is a peak demand during the month of Ramadan (October/November) when demand for milk increases by up to 20%. While fasting takes place during the daylight hours there are no restrictions in the hours of darkness. The milk companies have started looking at bonus payments to match supply and demand. The country is self sufficient in liquid milk though some is imported from neighbouring Saudi Arabia. Exporting of milk products is relatively new but is increasing.

An interesting feature of the two-week trip was seeing the herds of camels being milked. The number of camels is increasing as camel milk sales increase and new products are being manufactured. Camel milk ice cream and chocolate are now proving attractive to the increasing numbers of western tourists in Dubai and the capital, Abu Dhabi. The composition of camel milk is very similar to cows' milk and is very drinkable and refreshing. Watch out for it in our supermarkets! I was keen to try camel meat but failed to find any in my two weeks in the desert!

UAE dairy camel herd with dairyman and vet

SUSTAINABLE GRASSLAND PRODUCTIVITY

John Frame

The 21st General Meeting of the European Grassland Federation (EGF), 2-6 April 2006, Badajoz, Spain

Naturally, given the location, southern European grassland featured strongly but not exclusively in this Meeting and research and development reports covered the full range of European grassland. Over 300 delegates from 30 countries participated in a comprehensive programme of invited plenary papers, offered papers and posters, all complemented by periods of discussion. However, this article will concentrate mainly on presentations pertinent to northern European grassland. There were 5 major sessions: 1) Overcoming Seasonal Constraints to forage production; 2) Role and Potential of Legumes; 3) Production and Quality aspects of different animal feeds; 4) Changes in Animal Production Systems to meet CAP reforms; 5) Grassland and Climate Change.

1 Seasonal constraints

A team of four, including a Northern Irish colleague and myself, summarised the solutions (many familiar to SWSGS and CSGS members), namely: conserving silage and hay in summer to feed in winter; nitrogen fertilisation to extend the grazing season at both ends; selection of appropriate grass species and varieties; use of alternative feeds such as cereals, maize and brassicas; management systems including adjustment of stocking rates and manipulating stock reproduction cycles. Maybe in future if our climate becomes hotter and drier, as is forecast, we will need to learn from our southern European colleagues about the pros and cons of irrigation, the use of drought resistant plant species, alternative crops, and even fodder trees and shrubs. An additional constraint is the minimizing of adverse environmental impacts such as the control of nitrogen inputs, whether from fertiliser or slurry, in response to official policies.

2 Legumes

The management for a balanced and persistent grass and white clover sward was now well understood though the newer clover varieties were more aggressive and persistent than the older varieties. The yield potential of red clover was high but persistence remained a problem, mainly related to disease. Nevertheless, red clover sown alone or with hybrid, Italian or intermediate perennial ryegrass, could give substantial yields of forage annually for up to three years or longer in pest and disease-free locations. Novel species with potential include birdsfoot trefoil which is non-bloating because of its tannin content, and nutritionally advantageous since these tannins protect plant proteins in the rumen from degradation. The protein is then utilised more efficiently in the small intestine: a reduction in internal parasite burdens has also been recorded and overall, excellent individual animal performance has been obtained. The snag is its low

yield in the UK but breeders are working on it and it is one to be aware of for the future. The advantages of legumes or grass/legume mixtures are well known and with restrictions on nitrogen applications to swards, for example in extensification programmes or in nitrate vulnerable zones, legumes are likely to play an increasingly important role.

3 Milk quality

In the session on "Production and Quality Aspects of Different Animal Feeds", a noteworthy paper from The Netherlands analysed dairy product supply chains emphasising milk quality in relation to feed. Milk from cows on fresh green forage, especially grazed grass, had a higher unsaturated:saturated fat ratio and higher contents of poly-unsaturated fatty acids (PFA) (beneficial against heart disease) and conjugated linoleic acid (CLA) (possible anti-cancer effects) than milk from silage-fed cows. The Fatty Acid content of milk has become lower than previously because of different feeding practices, and low-fat dairy products mean that consumption of PFA has declined even further. Some Netherlands dairy farmers now receive a premium on milk from grazed grass. Ironically there has been a trend to keep cows indoors year-round mainly to control the use of animal wastes in response to the strict Dutch legislation on nitrogen and phosphorus applications to soils.

4 Effects of CAP reforms

The main speaker, from the European Commission in Brussels, described the factors that determined the evolution of CAP and outlined the implications for the future of grazing animal production systems. Essentially there had been a gradual transition from initial price support to a policy of coupled (production-linked support) in the 1990s through to the decoupled regime introduced by the 2003 CAP reform, which followed EU enlargement from 12 to 15 countries and preparation for the further expansion to 25 member States. The Commission's projections for 2005-2012 indicate that real farm income has a moderately positive outlook, with particularly high income gains in the new Member States. It foresees: an increase in domestic demand for cheese and other value-added dairy products and a decrease for bulk products such as butter and skimmed milk powder; prospects for beef production were more negative due to declining cattle numbers in the dairy sector, the effects of decoupling of direct payments and the residual impact of market disruptions following the BSE crisis; prospects for the sheep sector were limited due to a slack demand in contrast to stronger trends in pork and poultry. Farmers were becoming more receptive to market indicators and there was a development of better marketing strategies, for example, Quality Assurance schemes and premiums for regional products; maintaining farm profitability through reconnection with consumers *via* the food supply chains. An economic benefit of decoupling was the 'freedom to farm', which allows changes in stocking rates for cost reduction without loss of subsidy

income. Decoupling and cross-compliance allowed the implementation of agri-environmental, animal welfare standards and animal health programmes.

Environmental dairying

Another major paper in this session, "Towards Sustainable Intensive Dairy Farming in Europe", focused on the need to reduce the considerable environmental costs associated with increased output from grassland, namely, loss of biodiversity, wildlife habitats and landscapes. Nitrogen surpluses and losses are now a major topic in northern European countries. Results from an experimental farm in The Netherlands and a simulated dairy farm in Germany identified environmental shortcomings in the production systems. On the Dutch farm, making efficient use of nitrogen from slurry, clover nitrogen and ploughed-up grass sward reduced fertiliser nitrogen requirements and resulted in a 70% reduction in the nitrogen surplus. The German simulation model compared measured data and information from actual production systems. A major cause of nitrogen surplus was the excessive import and use of fertiliser nitrogen. Enclosed slurry storage and application by injection reduced nitrogen volatilisation but conversely, increased nitrate leaching and soil denitrification. Reduced supplementary feed also decreased nitrogen surplus. The authors noted that ploughing and reseeding grassland is being challenged by the increasing demands of legislation and society to reduce nutrient losses, conserve biotic diversity, protect against erosion and to improve carbon storage.

5 Climate change

A major paper from the Institute of Grassland and Environmental Research, Devon, discussed the impacts, adaptation and mitigation options for grassland. Increased temperatures and carbon dioxide concentrations have the potential to increase herbage growth and to favour legumes more than grasses. However, changes in seasonal rainfall would reduce these benefits especially in areas with low summer rainfall. There would also be problems arising from abnormal weather such as increased frequency of drought and storms. Suggested farm scale adaptive responses could include increased use of conserved feed, maize, legumes, drought resistant plant species, stored manure, and irrigation. Grassland management would need adjustment to control the emission of the greenhouse gases: methane and nitrous oxide. The former is emitted by livestock and manures and the latter by soils and manures (see page 38). Thus an integrated approach to minimising the adverse effects is called for, with trade-offs required when control of one emission is offset by an increase in another; in this respect, modelling and subsequent practical validation have important roles to play.

Farm Tour in the *Dehesa*

Badajoz is located in the Region of Extremadura, 400km SW of Madrid, and 6km from the Spanish-Portuguese border. It is in the heart of the *Dehesa*, a pastoral ecosystem that is the result of a long plant-animal interaction controlled by farmers, developed mainly on acidic light soils under a Mediterranean semi - arid climate. The *Dehesa* is an area of dispersed trees of *Quercus ilex* ssp. *ballota* and *Quercus suber* with a well developed herbaceous layer of annual grasses and legumes, where the shrub layer has been eliminated to a great extent. The management objective of the *Dehesa* is to preserve the native resources while producing high quality animal products. **A well managed *Dehesa* is one of the best examples of integration between grassland productivity and environmental sustainability.** Its area in western Spain is 4 million hectares of mixed flat and hilly land of low fertility, being particularly calcium- and phosphorus-deficient. Hot, dry summers and cold winters are features of its typical Mediterraean climate.

The *dehesa* is a savannah-like open woodland with mainly natural pastures below the tree layer. The trees, which are chiefly evergreen oaks, produce browse, acorns, cork and fuelwood. A major problem is the lack of natural regeneration of the tree layer. The natural pastures are mainly annual self-regenerating species which are the primary source of fodder for the livestock though there are some areas with mixed annual and perennial species including legumes. In line with the rainfall pattern herbage production is best in spring and autumn. To fill in the feed gaps, cereals and cereal/vetch mixtures are grown on some of the more fertile, cultivable land as are sown pastures based on auto-reseeding annual legumes such as subterranean clover. Hay is conserved for summer and winter feeding. Animal production comes from cattle, sheep, pigs and goats. The main domestic grazers on the *Dehesa* are local breeds of cattle ("Avileña", "Morucha" and "Retinta") and Merino sheep. During the autumn acorn season the grass-grazing Iberian breed of pigs supplement their diet with the fallen acorns and this produces a special type of regional ham which commands a substantial premium. Hunting has recently become a major economic activity, involving such species as red, roe and fallow deer, wild boar, rabbits and red legged partridge. Conversely there are projects to conserve other species such as the Iberian lynx, imperial eagle and black stork.

This report of the 21st EGF Meeting was one of the last articles written by John Frame. It typifies his contribution and commitment to grassland, and desire to promote its benefits internationally.

A VISIT TO CANADA, 5-12 NOVEMBER 2006

George Borland, Mossbog, Tarbolton, Ayrshire

An opportunity arose to visit the 2006 Toronto Winter Fair and to see something of Canadian farming with a group organised by Semex UK (Graham Kirby). There were 20 in the group and we spent 3 nights in Guelph, which is about 50 miles west of Toronto, one in Peterborough, 100 miles north east of Toronto, and finally 3 nights in the Royal York Hotel, Toronto. Touring in two mini buses, 4 days were spent visiting local dairy farms in the Guelph and Peterborough areas and 2 days at the Royal Agricultural Winter Fair.

Toronto is situated on the western shore of Lake Ontario, approximately 44°N. The farms were located inland at around 200-350m above sea level. The climate is classified as 'warm summers with cold winters', though the 2006 winter began unusually mild, similar to that in UK. Rainfall is well distributed throughout the year, 2-3 inches (50-75 mm) per month, total around 1100 mm, similar to the drier parts of south west Scotland.

The programme included 12 dairy farms selected for their breeding stock together with brief stops at the other farms. The enterprises seen were mainly specialised stockbreeders producing embryo transplants and pedigree stock. Sales of cattle genetics took precedence over sales of milk, though in the past, many of the farms exported stock before BSE. At present embryos are sent to UK and to countries all over the world. For example, the first farm visited had a very good line with a daughter recently sold in Carlisle for 7,500 guineas. Typical farms were mostly family farms with 50-60 cows in traditional cow sheds. The cows were yoked in single stalls and fed from a forage barrow. As milk sold at 32-35p per litre, a living could be made. There were also much larger more modern steadings with state of the art facilities, eg: automatic curtains to control temperatures inside the building, and feeding by feed wagons. The cows were kept indoors, some for the whole year; others went out at night in the summer. Fans were necessary to keep the buildings cool on hot days. Manure was collected dry by elevator for later spreading. Data ranges of farms visited: Size 100-400 ha (average 195 ha), mostly owned. Cow Nos: 60-500 (176) Milk yields: 9,300-13,000 l (10,600 l). Butterfat %: 3.6-4.3 (3.95). Milk protein %: 3.2-3.5 (3.3).

The Toronto Winter Fair was a huge event with a very large number of stands and a great display of cattle, especially Holsteins, Ayrshires and Jerseys. This was an excellent trip and all participants wish to thank the Canadian farm hosts for their very warm hospitality.

CHASING GRASS!

Hilary Henderson, 3rd Year Agriculture Course, SAC Auchincruive
SWSGS Prizewinner 2005 and 2006

Coming from a primarily beef unit in South West Scotland, comprised of 2000 fattening heifers and 400 cows, it has become evident that farming (as one of my classmates said) is in essence **chasing grass**. You chase the grass to grow in the spring by fertiliser application, you chase it into the pit during the summer and you chase it back into the ground by grazing until you can get all the cattle housed in the autumn. Then you chase it back out of the pit and into the cattle before chasing it back onto the fields in the form of slurry and dung - as and when you can. This step of the chasing game is becoming ever more difficult given the weather we are experiencing, which we are led to believe is not a bad winter but a warning of years to come. There is now the increased push for stricter NVZ rules, with the NFU briefing this year warning of SEERAD's new proposals, including doubling the closed period, reducing the nitrogen allowance from 250 kg ha^{-1} to 170 kg ha^{-1} and applying the spreading restrictions to all soils not just shallow and sandy loams. Regardless of the tightening of rules the chasing game continues, and once the silage pits are nearly empty the fertiliser spreading begins once again and the cattle are back out and so the process begins again. Chasing Grass!

SWSGS PRIZES 2005

The SWSGS **Vice President's Prize** for the best Grassland Student in the 1st year Agriculture course at SAC Auchincruive was won by **Hilary Henderson**, Carswadda, Lochanhead, Dumfries, who received her award from SAC Principal, Bill McKelvie, at the November Prizegiving ceremony held in Oswald Hall, Auchincruive. The SWSGS prize is given in recognition of excellence in the grassland courses at SAC Auchincruive. The Society congratulates Hilary and wishes her success in her future studies at Auchincruive.

The **Malcolm Castle Memorial Prize** in the form of a cash token plus trophy was awarded to **Ian Houston** for the best dissertation on grassland/livestock in the Honours Degree course at SAC Auchincruive.

MAIZE 2006 – NOTES FROM CRICHTON ROYAL FARM

Jennifer Bell and Hugh McClymont, Crichton Royal Farm, Dumfries

Maize fields at Crichton Royal Farm were Bungalow (12.5 ha), Netherwood Cottage (5ha) Rosebank (6.2ha) and 11-Acre (4.5ha), using the varieties: Nancis, Apostroff, Bowling, Revolver, Camelot, Pride, Baltis (for grain) and a few varieties under development. A cut of grass silage was taken from 2 fields before applying slurry, ploughing and sowing: Rosebank with plastic, Netherwood Cottage (var. Pride) without. Dairy cattle slurry at 75m^3 ha^{-1} in two dressings was applied during the spring, then ploughed and power harrowed in April. The weather in May was cold, similar to 2005, giving plants a stressed appearance after emergence and slow growth, before air and soil temperatures rose as the season progressed (see Table 1).

Table 1. Monthly mean air temperature and 30cm soil temperature: 2005 and 2006.

	Air temperature (°C)		30cm soil temperature (°C)	
	2005	2006	2005	2006
March	10.5	7.4	6.7	4.5
April	12.2	11.8	9.6	9.1
May	13.3	14.4	12.5	12.1
June	18.0	19.0	15.8	15.7
July	19.9	21.9	17.9	16.8
August	19.8	19.3	16.5	16.9
September	17.9	18.4	14.9	15.9

June to September was predominantly warm and dry, with high numbers of sunshine hours and heat units, conditions ideal for fast growth of the crop; sporadic rain fell in August which allowed it to stay green. The forage maize was harvested between 12th September and 24th October. Apostroff , sown 18th April and grown under plastic was harvested first, at an average yield of 17.2 tonnes acre^{-1} (42.8 t ha^{-1}) and 27% DM. The two fields that had been harvested for grass silage before sowing maize, yielded 4tDM ha^{-1} grass, with respective maize yields of Apostroff (plastic) 13.9t DM ha^{-1} and Pride (non plastic) 10.5t DM ha^{-1}, harvested on 24th October. These fields received only 75kgN ha^{-1} artificial fertiliser applied to the grass in March and slurry for the maize. Approximately 7.4 ha of Baltis grown under plastic for grain was harvested on 2nd November, using a combine harvester and an adapted header to harvest the cobs. Estimated fresh yield of grain was 4 t acre^{-1} (9.8 t ha^{-1}) at approximately 70% DM, an increase over last year's 3t acre^{-1}. The maize grain was crimped and used in a milking ration at Acrehead to provide starch and slow-release energy. The analysis was 67.3% DM, 8.25% (of DM) crude protein, starch 69.2%, ME 14.1 MJ kg^{-1} DM.

MICROCLOVER – A New White Clover
DLF Trifolium

A new type of white clover with a very small leaf has been developed, in the first instance for use in amenity situations.

In lawns, the normal white clover can easily spread and dominate the grass components and is often looked upon as a weed. Microclover combines well and spreads evenly in a lawn and does not over-shadow the grasses. It can be cut short, produces few flowers and is drought resistant. Its main attribute is the provision of nitrogen to the grass resulting in a dark green colour which lasts throughout the year. Less fertiliser or weed killers are required. It is possible to overseed existing swards with Microclover seed.

Though extensively tested for amenity purposes, such as parks, lawns, fairways, football pitches and landscaping, it has not been tried under sheep grazing eg: in permanent pastures or on the hill.

Microclover was developed in Denmark by DLF Trifolium and is available through HF Seeds.

EXTREMELY HIGH LEATHERJACKET RISK
Davy McCracken, Senior Agricultural Ecologist
SAC Auchincruive

SAC Auchincruive has found extremely high leatherjackets populations in many grassland fields surveyed in south-west and central Scotland over winter 2006/2007. Hence permanent grassland and spring crops out of grassland could be at risk of damage and loss of yields in the spring. However, grub populations can vary markedly from farm to farm and field to field. It is therefore prudent that an assessment of leatherjacket levels be conducted prior to deciding whether an insecticide application is necessary on any fields. Assessment of leatherjacket infestations in individual fields can be undertaken by SAC. .Contact the local SAC Farm Business Office or visit the SAC website (**www.sac.ac.uk/consultancy/fbs/contacts/officelocations/**). Or contact : Davy. McCracken @sac.co.uk ,telephone 01292 525299.

GRASSLAND MEETINGS IN 2007

AT CRICHTON ROYAL FARM, DUMFRIES

28 February 2007 – Practical Dairying – 'For People Who Milk Cows'. Popular herdsman's day 11.00 am – lunch, giving practical information on: mastitis prevention, dairy replacement rearing, feeding and calving management. Supported by **Dumfries & Galloway Agricultural Forum**.

15 May 2007 - SCOTGRASS. The triannual Scottish grassland event which is a showcase for all types of machinery and products associated with grassland. The event includes working demonstrations. Not to be missed!

BRITISH GRASSLAND SOCIETY MEETINGS

High Value Grassland – 17-19 April 2007 at the **University of Keele, Stafford**. A 3-day conference aiming to show how the needs of cross-compliance and agri-environmental schemes can be reconciled with profitable meat and milk production. The three days will highlight: 1. What the public wants. 2. What farmers can deliver. 3. How to deliver and grasp opportunities.

Summer Meeting 2007 – 8-12 July 2007 in **South East Wales: Brecon, Glamorgan and Monmouth**. A good mix of dairy, beef, sheep and arable farms, including Glasnant Morgan's farm which won the 2005 National Grassland Management Competition. Reed-beds, goat cheese production, haylage, lapwing habitat and other diversification will be featured. An interesting Alternative Programme complements the 3-day farm tour. SWSGS grants will be available to support the attendance of young delegates.

WEATHER DATA FOR 2005
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	8.5	2.4	4.6	135.6	19	41.6
February	7.1	1.7	3.7	64.7	16	80.0
March	10.5	3.8	5.7	52.2	15	107.3
April	12.4	4.2	7.7	56.9	16	151.1
May	13.9	5.8	10.7	73.9	19	199.9
June	18.0	10.5	15.2	69.4	20	140.3
July	19.1	12.5	16.3	29.9	10	155.5
August	18.5	10.3	14.9	64.8	15	160.1
September	17.3	10.8	13.2	88.3	22	110.0
October	14.4	9.1	10.9	149.3	21	51.2
November	10.0	3.0	5.8	60.8	19	74.9
December	8.2	2.3	4.2	41.8	17	43.8
Means/ Totals	**13.2**	**6.4**	**9.4**	**887.6**	**209**	**1315.7**

Max air temperature: 26.4^0 on 4 September. Min air temperature: -5.0^0 on 23 January. Last frost: 10 May 2005. First frost: 13 November 2005.

* RNAS Prestwick.

WEATHER DATA FOR 2004
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	8.4	3.3	5.5	143.5	21	54.1
February	7.2	2.3	4.9	47.4	8	82.7
March	10.4	4.0	6.6	54.0	11	82.3
April	12.2	4.6	9.5	89.4	20	158.9
May	13.2	6.5	12.4	83.0	18	193.0
June	17.9	10.1	15.7	38.3	15	140.4
July	19.9	11.7	17.9	31.0	9	150.9
August	19.7	10.7	16.4	49.6	15	179.4
September	17.8	10.3	14.9	72.0	15	125.6
October	14.3	8.7	12.3	238.1	21	55.4
November	8.8	2.3	8.4	102.0	18	79.2
December	7.5	1.5	5.1	55.0	14	51.8
Means/ Totals	**13.1**	**6.3**	**10.8**	**1003.3**	**185**	**1353.7**

Max air temperature: 28.6° on 12 July. Min air temperature: -6.9° on 29 December. Last frost: 14 March 2005. First frost: 17 November 2005.

2005 was a year of frequently changing weather between bright and dull, rainy conditions and with very few and short settled spells. The year began mild with gales and rain turning to blizzards and hard frosts at the end of January. This sequence was repeated in February. March and April saw sharp changes from cold to occasionally warm days. There was a late frost in May then largely dull and cool with rain, before warming in mid-July and August though still with frequent rainy days. Early September was unusually hot before returning to wind and rain, a dull calm spell, then remaining mild and wet before becoming cold and frosty in late November, this alternate sequence repeated again in December.

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

SPONSORS

The South West Scotland and Central Scotland Grassland Societies wish to gratefully acknowledge and thank the several sponsors who have supported their activities during the 2005-2006 season:

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