GREENSWARD

Journal of the South West and Central Scotland Grassland Societies

No. 47

2005

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Front Cover Photograph:
Lifting Silage at Dalfibble, Parkgate, Dumfries – John Mackie, Scottish Regional Silage Champion 2005

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John Mackie receives the Scottish Silage Champion Trophy from John Vipond, President of the British Grassland Society 2004-2005 with Chairman Adam Gray (left), at SWSGS Farm Visit to Mouswald Grange (R Kirkwood), May 2005.
(Photo: Bob Geddes)

FOREWORD

The Grassland Societies of Central and South West Scotland feel especially privileged to be able to enjoy very close links with all sectors of the agricultural industry, through the medium of that most important resource in the west of Scotland, **Grassland.** The fruits of these close contacts are evident in the articles published in the present issue of Greensward, which largely documents activities that have taken place in the last two seasons.

The theme of an ever-strengthening trend away from production agriculture to greater emphasis on the environment, animal welfare, reduced pollution and potential for recreation, recurs throughout this issue. Depressed markets particularly for milk, have generated harsh conditions, especially for the smaller farmers. Increasing globablisation with easily available and relatively cheap transport, both at home and overseas, are major factors contributing to these problems. However, fuel costs are set to rise and availability decrease which could prompt a return to a degree of self-sufficiency in both food and fuel. Might there be a potential for producing energy from our abundant grassland and forest areas? The Societies are particularly grateful to all contributors and advertisers for their willing help and enthusiasm in participating in the compilation of the Journal. Above all, grateful thanks are due to farmers who extend the hospitality of their farms for farm walks and also to those attending meetings and entering competitions. Acknowledgement is also made to representatives of commerce who continue to demonstrate enterprise and ingenuity in meeting the challenge of changes in farming; to scientists, advisers and others who can still devote skills and expertise in order to support technical progress in grassland and stock management.

As always, the Editor owes a tremendous debt of gratitude to Lorraine Reid, SAC Farm Business Services, Ayr for her tireless work in the typing and preparation of this Journal with unswerving dedication and efficiency. The help of SAC staff from the Advisory Offices and in the Environmental Group at Auchincruive is also acknowledged. For excellent layout, printing and publishing work, the staff at Walker & Connell are gratefully thanked.

G E D TILEY - Journal Editor

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MEMORIES ARE MADE OF THIS

Will Taylor, Glastry Farm, Kircubbin, Newtonwards, Co. Down, Northern Ireland

President of the British Grassland Society 2003-2004

Botanists try to breed improved cultivars of it, researchers deliberate over it, engineers attempt to develop machinery to harvest it, educationalists teach it, farmers make a living from it, and the public rely on the produce of it for their staple diet. From the savannahs of South America and East Africa to the Russian steppes, from the prairies of North America to the veldt of South Africa and to the Pampas of Argentina there is a common factor. Ladies in the South Pacific make skirts from it, some in the United Kingdom smoke it, and many police forces have them as informers, its called **grass**.

This resumé of the importance of the topic that unites this planet makes me feel particularly privileged that I had the opportunity to lead one of the most prestigious grassland forums, the British Grassland Society in 2003-2004. To be inaugurated to the position of President and receive the chain of office at the Annual General Meeting in south-west Scotland was indeed most appropriate, since I can see the Mull of Galloway most mornings from the other side of the North Channel, on the Ards Peninsula of County Down. To meet some of the most successful exponents of grassland production in this most favoured of grass growing regions, to take in the glorious scenery, and be part of a memorable finale, the British Grassland Society's dinner in the Brig'O Doon House Hotel, Ayr was indeed an honour. I had the good fortune to take office at a point when many local grassland societies were reaching their 40th Anniversary. On these occasions it was appropriate that a commemorative dinner drew together past and present members. Cynthia and I represented the "parent" Society in places as far apart as Cornwall and Fermanagh, Surrey and Monmouth. We met the people who really matter in producing safe, wholesome food at affordable prices. This was being done in systems that are compatible with the good stewardship of our heritage, the countryside, and with due regard for the well-being of the animals we care for.

A year in a high profile position obviously colours my outlook on the future of the industry, the people I have met, the places I have visited, the problems I have encountered. It would be appropriate that I share some of those findings in a journal that has such an influential readership. I write this article on an island that is about to be designated a Nitrate Vulnerable Zone! *viz.* Ireland. No other land area in the Western world has achieved such a status under the EU Nitrates Directive 1991. With this designation come completely new parameters for

agriculture in general, and grassland production in particular. Alongside this change in emphasis for a grass based industry is the implementation of the Common Agricultural Policy reform. For farming within the European Union, it is no longer about maximising production, about growing "two blades of grass where one grew before". It is about creating a diverse landscape, about less pollution, about greater recreational opportunities, about sustainability, about the protection of flora and fauna in the countryside **and** producing food!

For the first time in our history, we as grassland farmers and livestock producers will be paid for our multifunctionality at the end of 2005. This change in emphasis brings immense challenges for me as an intensive dairy farmer. How can I react to a 170 kg N ha^{-1} ceiling on my grassland enterprises? How do I manage a system that produces vast quantities of waste with a four-month slurry-spreading ban? How do I manage phosphorus inputs on my farm to reduce eutrophication within our eco-system? How do I maintain a competitive farm business that is sustainable both economically and environmentally within an increasingly global marketplace? Can I adapt my grass-based system to be both nutrient efficient, input efficient and profitable? Can I cope with legislation in the pipeline on air emissions in a business where ammonia and methane are produced in large quantities?

A survey of research projects at centres throughout the British Isles would suggest that much previous and current research is serving yesterday's industry! There are few answers to my list of concerns about how I can shape my business to meet current and future legislation on water and air quality. Much of the current research effort falls into three main groupings: i) about production and reducing the cost of that production; ii) about land management options that lessen the impact of current farming systems on the landscape; iii) seeking to add value to the current farm outputs. These strands of research are far from the integration I require immediately. Because of the lack of cohesion they do not enhance sustainability, but, in the main, identify problems rather than offering solutions.

Sir George Stapledon had a vision when he brought the British Grassland Society into existence in 1945, namely to bring farmers and researchers into a forum for mutual benefit in the task of filling the food deficit of post-war Britain. This concept of the Society remains sound 60 years later. However, the goalposts have shifted dramatically in a way that Stapledon could not have envisaged! I am certain that all parts of the knowledge chain in south-west Scotland will accept the challenge ahead and provide the solutions that my colleagues and I require.

JAN CRICHTON 1957-2005

Steve Peel, DEFRA, Leeds

Jan Crichton was at the heart of the BGS for 18 years. More than anyone else, she earned it the reputation of being the most open, friendly and welcoming of societies, as well as one of the most efficient and effective. As Administrative Officer hers was the smiling voice on the 'phone, the laughter on the show stand; she was the one to turn to at meetings when something went wrong. For the last four years as Chief Executive Officer she had built stronger links with the University of Reading and kindred societies like the Maize Growers Association; she won more advertisers for Grass Farmer and substantially turned around its profitability, and she was commended by the Charities Commission for the high standard of the Society's administration. At a time when many agricultural organisations were rapidly shrinking, BGS remained relatively stable – this was a tribute to her ability to recruit and retain members.

Born Janine Mary Lewis she was a 'rhesus baby' and had to have an immediate transfusion. So she said that her life was a bonus. She was brought up in Watford and became head girl at school. She had the ability for university but wanted to go out and work, which she did first in the labs at the local hospital, then leaving home and moving to the Botany Department at GRI Hurley. It was here that she met her husband Charlie. She worked for several years with Tony Parsons on internationally-recognised research that laid the basis of our understanding on the grazed sward. But though an able scientist she was essentially a 'people person' and in 1987 she took the opportunity to become full-time Admin Officer of BGS under the part-time secretaries: Jim Corrall and later Mike Helps. When Mike retired in 2001 she was appointed to the new full-time post of Chief Executive Officer.

She loved the work and built up an encyclopaedic knowledge of the membership and of local societies, many of whose members she got to know at summer meetings. And people loved her. She had great personality and charm, and a warmth immediately recognised as genuine. She was always considerate and patient, and had time for a personal word about business or family, helped by her (as she put it) 'memory like an elephant'. What fewer members saw was her ability, organisation and hard work in the office. She had excellent skills with words and with figures, and worked closely for the whole of her BGS career with Hon Treasurer Charles Crichton; the Charity Commissioners found this suspicious until they were assured they were not related. She also worked closely with a new president each year, a relationship crucial to the society. Every president will attest to her sound judgement in guiding and supporting

them, and to her thoroughness in preparing and briefing them before, and during, long meetings.

Through the 1990s and since, running societies like BGS has become increasingly difficult. The economic downturn in agriculture has magnified the wider trend for people's lives to get busier and busier, so that fewer and fewer people are able to commit time to work on committees, organise meetings, look after finances, recruit new members. This means that more and more work falls on the secretariat. Jan worked extremely hard, often putting in much more than her official hours, to maintain the high standards to which she was committed. This dedication was founded on a strong belief and pride in the society's objectives: to promote and share knowledge for the good of all.

Outside work Jan was very active, and kept fit in the gym and occasionally by running for charity. She and Charlie completed several long-distance walks, and had regular skiing holidays in Canada. They both had an affinity with children and though they had none of their own they loved to spend time with their nephews and nieces, and the children of their many friends. Jan was also a committed Christian and taught at Sunday school at her Catholic church. In quiet moments she was a keen gardener and a prodigious maker of knitwear, which she sold at craft fairs.

Many, many people around the world will remember Jan as a vivacious, completely natural and unpretentious person, at ease in any company, preferably with a pint in hand. BGS members will remember her as one of the society's greatest assets; closer friends and colleagues as a woman of integrity, great fun to be with but totally reliable and trustworthy. We were unprepared to lose her, but so glad that we knew her.

The South West and Central Scotland Grassland Societies are grateful to Steve Peel for this tribute to Jan Crichton, who died of pneumonia on 1 May 2005. Jan enjoyed contact with all the local grassland societies, but had a particular affinity with SWSGS and south west Scotland, strengthened by family links. All Members were deeply saddened by her untimely loss

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CENTRAL SCOTLAND GRASSLAND SOCIETY
FARM VISITS 2004
D Harvey, Secretary CSGS

18 February 2004 – Hallhill, Crossford, Lanark (*Courtesy: J J Fleming*). The winter farm visit to Jim Fleming's dairy enterprise after winning the CSGS Silage Competition. Hallhill extends to 82 ha at around 200m altitude. 120 Holsteins averaged 7,000 litres and fed a TMR ration with a very small amount in the parlour. Of the 75 ha ploughable, there were 40 ha for first cut silage and 24-32 ha for second cut. Jim, son William plus one full-time employee run the unit. 110 pedigree Suffolk sheep are also kept.

13 May 2004. Two farms were visited in the Duns area of Berwickshire. **Kelloe Mains, Duns** (*Courtesy: R MacDonald*), a mostly arable farm of 1,000 ha situated at about 40m above sea level. A herd of 460 Holstein cows averaging 9,200 litres were permanently housed, split into 3 management groups and fed a complete diet of home produced feed. The areas required to produce this feed were 72 ha wheat for crimping, 80 ha wholecrop and 48 ha silage.

In the afternoon, the Beef/Sheep unit at **Wedderlie, Westruther, Duns** was visited (*Courtesy: J Tilson*). Wedderlie was purchased in 1942 and has been farmed for 3 generations. Total area is 1040 ha, with altitude ranging from 220 to 370m. The Aberdeen Angus herd of 200 cows is the largest and third oldest in the country, and is divided 50/50 into spring and autumn calving. The best young bulls are carefully selected for sale for breeding. Those failing to reach the required high standards are castrated and finished for beef. There are 1800 Blackface and greyfaced ewes plus 110 pedigree Texels.

8 July 2004. **Park Farm, East Kilbride** (*Courtesy: H Neilson*). On this summer evening visit the CSGS saw a 250-cow Holstein herd which averaged just over 10,000 litres. These are fed by mixer wagon. Bull calves were being sold at about 2 weeks old; all heifers were reared on the farm. The total farm area was 132 ha with 72 ha grass for first cut silage, 48 ha for second cut, together with 16 ha cereals for wholecrop. Labour was Mr Neilson and his father plus one dairyman.

CENTRAL SCOTLAND GRASSLAND SOCIETY
SILAGE COMPETITION 2004

CSGS Silage Competition Evening, Newhouse Hotel, Newhouse, 17 February 2005

Silage Judge: Willie Lambie, Letham, Newton Mearns. The Silage Judge gave a brief review of the farms he had visited. The winners were:

HF Seeds Cup & 1st Prize	J Warnock, Eastfield of Coulter, Biggar
2nd Prize	J Brown, Gaindykehead, By Airdrie
3rd Prize	W Millar, Newlands
Hamilton Reco Salver for Best Beef & Sheep Silage:	J Bannatyne, Drumalbin
2nd Prize:	R Mackie, Goodockhill, Newhouse
Big Bale Prize:	G Millar, Gallamuir, Plean

Guest speaker for the evening was Wallace Hendrie, who gave an overview of the family farming and cattle dealing business, Hendrie Brothers (Millands) Ltd, Millands Farm, Galston.

QUESTION TIME

G E D Tiley

Meeting of SWSGS in the Douglas Arms Hotel, Castle Douglas on 19 February 2004. This meeting was sponsored by ***John Watson Seeds Ltd***

The Panel consisted of two guests: **Alex Fergusson**, MSP for Galloway and Upper Nithsdale. **Roger Lindsay**, dairy farmer and a director of First Milk from Blackford, Carlisle, together with two members of SWSGS: **Donald McColm**, Cairngarroch, Drummore, Wigtown and **Scott Henderson**, Carswadda, Dumfries.

Alex Fergusson, originally from Wigtownshire, was farming 1972-1999 with hill sheep and beef near Girvan before entering the Scottish Parliament. He was a past president of the Scottish Blackface Sheep Breeders Association, and convenor of the Rural Development Committee at Holyrood. Interests include curling, rugby and folk music.

Roger Lindsay is a native of Lanarkshire and now runs a 250-cow dairy in Cumbria with his brother. A local director of First Milk, he is also involved with AI. Interests include classical music. Roger is directly related to Sir Alexander Fleming, discoverer of penicillin.

Donald McColm was South West Scotland 2004 Silage Champion, and is well known for his regular contributions to 'Dairy Farmer'. Donald runs a high yielding herd on the southernmost dairy farm in Scotland and produces early potatoes. Interests are golf and curling as well as being a keen supporter of local interests in the South Rhins Development Association.

Scott Henderson has developed a high-producing beef/sheep unit at Carswadda finishing quality beef and early lambs. Interests include shooting. Scott once shared a boat with Steve Redgrave in his younger days.

The audience was invited to put questions to the Panel members on any topic of interest. One of the first questions was whether the present marketing of milk was working effectively. In hindsight, at the time of the dissolution of the Milk Marketing Board, producers should have stuck more closely together. After 15 years it was now apparent that this will be necessary to counter fragmentation and political pressures. Processing capacity must be kept up-to-date, investment made to develop new markets and we must focus on the marketing of our product. No one was putting the case for the primary producer in the face of supermarket monopolies.

It was felt that education should begin with the politicians who often had a limited appreciation of practicality and on-the-ground costs. For example, milk quotas which had been introduced should be removed across Europe. It would be beneficial if those with business experience could be attracted into Parliament.

Farm businesses were progressively increasing in size in order to get the best prices, particularly in beef marketing. It was felt that the live auction mart still had an important role. The producer could choose when to sell and thus maintain prices. The beef industry could survive without subsidies since Scottish beef had a very good name, though quality marketing would be required. Beef carcases should be allowed sufficient time (30 days) for hanging to develop flavour which was often lacking in supermarket meat where there was an accelerated throughput. However, farm produce must be attractive to the consumer and there was a real need to educate, beginning at school level, but not forgetting the politicians. Due to a depression in farming, agricultural education was being reduced in favour of other subjects for economic reasons, as seen within SAC. This was in spite of the fact that the site at Auchincruive was generally agreed to be ideal for a rural educational centre.

The development of GM crops was seen as an extreme in plant breeding with a potential to feed the Third World. However, the option of keeping Scotland GM-free might be worth taking. In animal breeding some aspects of genetics had gone too far, eg: the North American Holstein could be regarded as extreme. There was now a trend to the shorter, fleshier Friesian type which could look after themselves, a trend which arose from reduced labour availability. A balance should therefore be maintained in breeding policies. If winter applications of N were abolished, less milk would be produced and staff may have to be reduced, but the value of FYM would increase.

At the end of the evening, the possible effects of new CAP reforms were discussed. These could allow farmers to farm the way they wanted according to market dictates, but there wasn't a hope of any reduction in bureaucracy or paperwork. However, the tremendous spirit among grass and livestock farmers in south west Scotland would ensure "that they made the best of it and **farming would survive**".

SWSGS SPRING FARM VISIT IN WIGTOWN, 2004

G E D Tiley

Visit by SWSGS to Dourie Farm, Port William, Wigtown on 18 March 2004

(By Invitation: R Christie & Family)

Visit sponsored by **McGill & Smith (Seeds) Ltd**

On a cold, very wet, windy day, the South West Society was privileged with a visit to Dourie Farm, Port William. The main reason for this early Spring visit was to see Early Grazing of cows in the Extended Grazing System being practised. Dourie is a member of the Wigtown Grazing Group which has been meeting to discuss and take forward some aspects of the Extended Grazing of grass widely advocated in New Zealand. Quoting from a very informative handout prepared for the visit, the Dourie Farming Company had been initiated by Mr Henry Burns Christie in 1954. Under his firm and inspiring leadership it had developed to a current total of 931 ha (2,300 acres) carrying 560 dairy cows in three units: Dourie with 270 cows, South Barsalloch with 150 and Monreith Mains with 140 cows. In addition, there was a 350-beef heifer finishing enterprise, an 800-sow breeding and finishing unit, a contract pullet rearing unit plus a Christmas tree production enterprise. Robin Christie, Managing Director and sons Rory and Gregor currently run the Company, with the stated aim of "staying in business and returning to profitable farming".

Within the dairy enterprise the aim had always been to maximise the efficient use of "our abundantly available grass". In an era of falling milk prices and increasing costs it was decided that drastic action would be needed. It was therefore decided to try and develop grazing and breeding policies (and thus a cost structure) that would loosely follow the 'New Zealand system'. "**The Key to achieving this was an open mind and a willingness to accept the unacceptable**!" The main change that allows the system to work is the conversion to spring calving. The heifers are programmed to calve on 1st February, the cows on 21 February aiming to complete calving by the end of April. AI is used for 6 weeks using New Zealand Friesian bull semen from Livestock Improvement New Zealand. Bulls are selected to provide good feet, udders and milk quality. Jerseys are used on the heifers for ease of calving. The Jersey X cows are well suited to the grass system, being hardy with lower body weight, higher appetite and better milk quality, if lower yielding. Spring calving leads to the maximum number of cows grazing grass when its quality and yields are highest. **Grass is the cheapest and best feed to counter low milk prices**.

The fields are divided into 2.5 ha (5 acre) paddocks, each with a 1,400 litre water trough for 200 cows. The provision of tracks was essential to allow cows access with minimal soil damage, particularly at the beginning and end of the extended grazing season. Tracks were 4m wide with a central crown for water run off and a drain either side. Dourie was able to use its own supply of rotten rock in construction of the tracks. The combination of roads and paddocks has increased grass quantity and quality. In 2003, the milking cows were out from 10 February until 22 December. Dry cows are kept out for the whole year as far as possible. Grass growth is monitored every 10 days, using an Ashworth plate meter aiming for 18 kg DM cow^{-1} day^{-1} and ensuring that sufficient residual grass (1600 kg ha^{-1}) remains for regrowth. The grazing cycle of 21 days extends to 40 days at either end of the season. A 2 kg home mix supplement is fed in-parlour during the calving season. Urea (50 kg ha^{-1}) is applied early January and February, followed by regular umbilical application of pig slurry throughout the year. Calf rearing is streamlined beginning with 3 litres milk each twice a day, graduating to 5 litres once a day with grass and concentrates. A Calfateria system feeds batches of 40 at a time. The first 100 bull calves are raised entire as cereal beef, the remainder castrated and reared with the heifers at grass. Flies were removed from the cows coming in for milking by a screen of water mist. The long term aim was to increase cow numbers, ultimately perhaps to 1000, rather than increase milk yields. A new parlour involving capital outlay would be required with an increasing usage of the New Zealand system.

The Grassland Society wishes to express thanks to the Christie family and New Zealand stockman, Mark, for demonstrating their grass and stock management and for the hospitality of the farm visit.

Winter 2005 Update. Since the Grassland Society visit in March 2004 significant capital investment has been made to the Dourie milking unit. Construction of a new 44-point DeLaval Rotary milk parlour was started in November 2004 and completed in February 2005. Another 2 km of tracks were laid and a further 80 ha of land divided into 2 ha paddocks. 180 heifers were calved in the spring taking the herd to 340 head, with plans to increase the herd to approximately 500 cows by Spring 2006. Further tracks and paddocks are currently being developed to allow the expansion to be completed. In the future less reliance will be placed on annual Italian ryegrass and more permanent pasture used. An Aitchison direct drill will be purchased to help with this.

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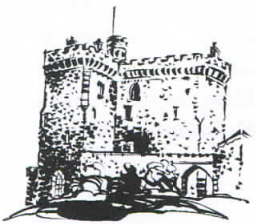

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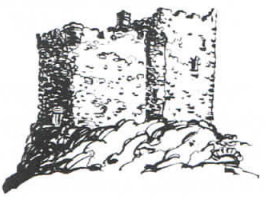

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SCOTGRASS 2004

G E D Tiley

Held at Roberthill Farm, Lockerbie, 20 May 2004
Hosts: Robin & Ian Spence and family

Scotgrass is held bi-annually in Scotland, rotating around the regions. It gives the opportunity for farmers to see the latest in grassland machinery and to make contact with local and national commercial firms dealing in livestock and grassland farming products.

The 2004 event was held on the Spence family farm near Lockerbie on a 40 ha area of level grassland, under good management for dairying. The day was fine with a large turnout of visitors. There were 24 working exhibits of machinery – silage cutting, conditioning, chopping, lifting, baling and wrapping; and over 50 static exhibits promoting seeds, feeds, equipment and business. Scotgrass is organised by SAC and the Agricultural Engineers Association (AEA), with major sponsors The Scottish Farmer and Kemira GrowHow, together with Farmers Guardian. A programme booklet was produced with informative short articles and up-to-date advice on grass and silage.

FORAGE LEGUME BOOK by John Frame

Forage Legumes for Temperate Grasslands, *Published 2005 by the Food and Agriculture Organisation of the United Nations, Rome and Science Publications, Enfield, USA. 309 pages £35*

Farmers have long realised the importance of legumes as a source of free N supplies in grassland for the benefit of companion grasses and as a high value forage for stock. While the greater use of legumes is often held back by their relative unpredictability compared with bag fertiliser N, the ever-increasing costs of raw materials (oil) and current trends to more ecological, perhaps often completely organic systems have given a greater impetus to a much wider use of legumes. The first part of John Frame's book offers an up-to-date guide to the most recent information on the establishment, management, nutritive and economic value of legumes. In the second part there are detailed profiles of 35 legumes, with particular attention to those, such as white clover, most important in Scotland and the rest of UK. This is a thoroughly researched, very readable and attractively illustrated account of these most important components of grassland. It is highly recommended as a source of immediate information for anyone considering making greater use of clover or other legumes, and for farmers becoming more extensive or going organic. It would also make a very acceptable present!

G E D Tiley

LAND USE SYSTEMS IN GRASSLAND DOMINATED REGIONS

G E D Tiley

The 20th General Meeting of the European Grassland Federation (EGF), 21-24 June 2004, Luzern, Switzerland

The 20th General Meeting of the EGF was held in Switzerland, in the heart of Europe, but not in the European Union. The theme of the meeting was geared not only to Switzerland but also to all European regions where grassland is dominant. As grassland is the fundamental basis for agricultural production, landscape and nature conservation in these regions, any changes can have dramatic effects. The Meeting was hosted by the Swiss Grassland Society and attended by over 500 delegates from 40 countries. All aspects of grassland were covered in the 440 scientific contributions. Recurring themes throughout the meeting were: how to maintain economic production with trends to greater intensiveness, while at the same time taking increased care for the environment; trying to keep or enhance wild flora and fauna; heightened awareness of the need to reduce pollution and to make more careful budgeting of nutrients; the ever-increasing public demand for safe and wholesome food with the challenge for farmers to seek better ways of marketing this.

The main topics were:

1 **Balancing environmental and production demands**.

2 **Benefits and hazards of grassland to society**
a) climate change; b) protection of biodiversity; c) maintaining alpine and sub-alpine grassland; d) soil pollution and gaseous emissions.

3 **Efficient use of natural resources in grassland systems** – to optimise grass growth and minimise environmental impacts.
a) Genetic resources and breeding; b) Legumes and mixed swards; c) Renovation and rotational grassland; d) Extensive and intensive grazing systems; e) Nutrient budgeting on grassland; f) Improving plant characteristics for better grassland; g) Adaption of grassland systems to regional needs.

4 **From forage to food quality**
a) forage quality; b) animal performance from forage; c) food quality.

5 **Interdisciplinary research and knowledge transfer**

Pre- and mid-Congress tours gave delegates the opportunity to visit examples of some of the rich grasslands in Switzerland, both cultivated and natural. The Pre-conference tour passed through Simmental, the centre of origin of this popular beef breed, and Saanen (goat breed origin).

The agricultural population in Switzerland is around 4% of the 7 million population, a decline of more than half in 40 years. Number of farm units in 2004 stood at 76,000, one third part time. Of the 1 million ha of fertile agricultural land; one quarter is arable, mainly cereals plus sugarbeet, vegetables and potatoes; 16% is under pasture and fodders, including maize, the remaining two thirds are rough grazings. Nearly half of Swiss farms are situated in the mountains. The herb-rich alpine pastures are used in summer for grazing or traditional hay making. Retention of traditional management of these is important as the basis for production of world famous cheeses, such as Emmentaler and Gruyère. Some are on very steep land among forests and require cutting by hand or with special machines. Overhead cable lines are sometimes used to bring the hay down to the steading. The cows producing milk for branded cheeses must be fed hay from the herb rich meadows in winter and cannot be fed silage. Many of the hill farmers have diversified into tourism and provision of winter sports (skiing).

The most important animal production is from cattle and milk, followed by pigs and poultry. As in the UK, market support after the war has now given way to encouraging attention to ecological and animal welfare requirements. The Swiss consumer pays particular regard to the quality and purity of food products. There are 5 federal research stations (Agroscope) supported by the Swiss Federal Bureau for Agriculture, and conducting mainly applied research into: arable crops, animal production, natural resources, fruit and vines, economics and engineering.

Sample bales of meadow hay flanked the speakers on the platform of the Meeting hall. To be in time for the conference these had to be barn dried as cutting meadows is not permitted before 15 June. Bouquets of wildflowers also decorated the Conference dinner tables, emphasising the importance of floral diversity in Switzerland.

The 20th EGF Meeting was predictably very well organised, with warm hospitality and entertainment, whilst technically catering for the diverse interests of the participants. As always, it fulfilled the aim of promoting contacts and exchange of grassland knowledge and experience. Details of all papers are published in Volume 9 of Grassland Science in Europe and summarised in the Book of Abstracts.

OPPORTUNITIES FOR MUTUAL BENEFIT IN AGRI-FOOD BETWEEN THE UK AND NEW COUNTRIES IN THE EU

Will Taylor, Glastry Farm, Kircubbin, Newtonwards, Co. Down, Northern Ireland

Ten new countries became Full Members of the European Union on 1 May 2004. These were Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia from Central Europe and Cyprus and Malta from the Mediterranean. This brought the EU population to 470 millions (20% increase), with a 5% increase in economic production, a 30% increase in agricultural land and 50% increase in the farm workforce. Membership of the European Parliament increased by 162 seats to 732.

A number of the original 15 EU countries together with the USA have already invested within the new countries of Central Europe and are thus well placed to take advantage of the rapid growth which is likely to occur. Low labour costs, abundant skilled labour, EU structure funding, economic and political stability favour this. The **agri-food** industry is generally dominated by outside investment from our EU15 colleagues with a minimal presence from the UK. Many interests in the UK were little aware of opportunities but were more concerned with potential threats of accession of the new countries. A reluctance to learn other languages was a distinct stumbling block.

In the **agricultural** field the cost of land was low though multiple ownership could be a complication. Purchase of land is usually only possible after 7 years. In the **food** industry there was already a negative trade balance between the UK and Central European countries. This is likely to increase due to the removal of tariffs, improved standards to create more exportable goods, a wide range of foods which appeal to the UK consumer and the expansion of major retailers such as Tesco. UK support for agri-food exporting appears to be at a disadvantage compared with other member states. There is less cohesion and co-ordination, fewer resources to penetrate emerging markets, lower financial backing from industry and very few products officially protected from imitation.

Conclusions were that the agri-food industry would be dependent on exporting in 10 years time, and we need to update the structures to adapt to the global industry of tomorrow. There should be a single body: **FOOD FROM BRITAIN** to co-ordinate the export of food and food products, taking into account the variety of sectoral interests. Finance and supervision for the effective standards required should come from Industry. There should be a greater representation of public and commercial staff with agri-food expertise within the embassies and commerce of overseas countries. Economics, climate,

low land values and scale present opportunities for trained and motivated agriculturalists to meet the challenge of farming in Central Europe. There are clear prospects for significant capital growth in land and property values over the next decade.

Grateful acknowledgement is made to Will Taylor and the Nuffield Farming Scholarship Trust for this extract from the Report of his tenure of the Frank Arden Award.

MAKING GRASS PROFITABLE – 'GRASSRIGHT'

Dr GeorgeFisher, Kemira GrowHow

Grass is universally acknowledged to be the cheapest source of energy for ruminant livestock. Its use as forage – whether grazed or ensiled - contributes directly to the profitability of the livestock enterprise. It therefore follows that any steps taken to improve the productivity of grassland further, through efficient, effective management and use of inputs, will also further improve farm profitability.

Yet the profitability of a piece of grassland is determined not by one management factor but by many. These include: grazing system, ground cultivation, re-seeding frequency, choice of seed mixture and its suitability for the intended purpose. Also, the appropriate choice and timely application of fertilisers and herbicides for best results at least cost, as well as cutting dates for silage, clamp management and appropriate use of silage additives. Nor should any one of these factors be considered in isolation; they are all inter-related.

So how can farmers follow 'best practice' and ensure that grassland is managed 'right' for profit? The answer is an initiative called '**grass*right***' in which free information and advice will be made available for farmers to help ensure that the full profit potential of their grass is realised. This initiative is supported by a group of four companies, each with knowledge and expertise in specific areas of grassland management. They are: **Advanta Seeds, Dow AgroSciences, Kemira GrowHow** and **Opico**. The **grass*right*** group will also be working with farmers, through practical on-farm trials, to assess the financial returns from adopting an integrated approach to grassland management.

grass right

BRASS FROM GRASS

G E D Tiley

The Summer Meeting of the British Grassland Society in Yorkshire, 11-15 July 2004

The BGS Summer visit in 2004 was to the largest county in England at the invitation of 5 grassland societies and a dairy discussion group in Yorkshire. The visit was based at the Askham Bryan College of Agriculture on the outskirts of York. The programme included the usual three full days of farm visits with an interesting Alternative programme of visits to tourist attractions in the area. Host Vice-President was Terry Hodgson, Whitby, North Yorkshire and Secretary Trees Fewster from West Yorkshire. With such a large area (1.5 million ha farmland – 1.05m acres, one sixth that in Scotland) there is inevitably a wide diversity of farming. It ranges from moorland in the wetter west (1500 mm rainfall) to the fertile arable land of the drier east (625mm rainfall). The scenic beauty of the county is recognised in the existence of three National Parks. Grassland amounts to 32% of the farm area, varying from very intensive to extensive enterprises. Independence and acumen characteristic of the local farmers were no less evident in the Organising Committee who are to be congratulated on a well-chosen and successful programme.

Joe Johnson, a former President of the BGS, presented an overall picture of 'Farming in Yorkshire' on the first evening of the Visit. Salient points were: Farm types: 15% dairy, 22% cattle and sheep, 5% pigs and poultry, 13% mixed, 26% cereals and 19% mixed crops/horticulture. There has always been an interdependence between livestock and arable; cattle summer in the hills, sheep winter in lowlands, hay and straw moves up into the Dales. Fodder roots important; sugar beet grown. Numbers of dairy farms fell by over 1,000 from 1992 to 2002 and herd size increased from 56 to 70 cows. Sheep numbers have also fallen; traditional breeds are Swaledale and Dalesbred.

Attempts were being made to make good the losses of cattle from the hills purely as a grazing management tool. Area of forage maize had risen to about 3000 ha, and wholecrop wheat is increasingly popular, helped on by availability of reliable contractors. Little hay made except on conservation haymeadows in the Dales. In the future continued emphasis would be on environmental issues; many farmers looking for opportunities in diversification, with an eye on the tourism industry.

Jerseys and Pigs on the Urban Fringe - Tyers Farm, Ardsley *(J & E Dickinson)* The first farm visit was to this large (438 ha) dairy/pig/arable unit in the environs of Barnsley. Formerly a mining area, there are now no more collieries and opencast workings have been reinstated. Manager Joe Dickinson began at Holmfirth in 1975 with 150 Jersey cows. He now milks 550, producing up to 9,000 litres of milk with high butterfat (6.4% in July) and 4% protein with a 44/44 parlour. The milk is processed (attracting 27.5p l^{-1}) in a business at Holmfirth managed by Joe's son. Cream, yoghurt, cottage cheese, ice cream and a full range of dairy products are sold throughout UK and exported worldwide. By-products help to produce bacon off 750 sows. Soils are light sandy and rainfall low, so that irrigation from the nearby river and from a 5 million gallon (22.5 million litre) reservoir is required.

28ha are reseeded annually after winter wheat using mixtures with a high clover content of the new Aber varieties. Reseeds always gave a yield increase over old leys. Slurry is applied by umbilical pipe at up to 70t day^{-1}. No inorganic fertilisers are used. Liaison is maintained with the local council before slurry applications near to the adjacent village. The farm is also in an NVZ. Problems arise from local residents exercising dogs: fences are cut (34 in one year) and gates must be locked, though up to one third of the locks are stolen annually. Fodder beet (15 ha) has a good potential with surplus going to the pigs. In spite of the high production, Joe Dickinson was a keen conservationist, with many planted hedges and paths created.

Old Farming Family Goes Modern with Deer – Round Green Farm, Worsburgh *(Richard & Jenny Elmhirst)* The Elmhirst family dates back to 1345 in this area and Round Green has been farmed since the 17th Century. Richard's ancestor was fined 4p for allowing a horse to stray! Originally in dairying, the farm introduced 10 female deer in the 1980s as a trial. The cows and quota were sold to finance further development. There are now 92 breeding females with calves, 86 yearlings and 5 stags. A high welfare abattoir approved by Tesco and Waitrose is the only one in Europe for farm-reared deer. It processes animals from Round Green and from outside farms, totalling 2000 animals a year. A specially designed race is bounded by 8 feet high boards with spaces. These allow the deer to look through as though they were in a forest. 25ha of long term leys with clover are fenced for the deer. An Oxy-generator is being tried to break up soil compaction and allow better growth of clover. A Countryside Stewardship Scheme has encouraged extensive planting of trees and hedgerows and also helped with the high costs of deer fencing. The venison is marketed through a farm shop, retail outlets, farmers' markets and restaurants. Other diversification is willow coppice chopped in 2004 using an Australian sugar

cane harvester, plus a mobile catering unit. Barbecued venison steaks were on the menu for the BGS lunch!

A Maize Maze and Hard Work to Supplement Dairy Income – Jowett House, Cawthorne *(Jim & Sarah Williams)* Coming from Hereford and starting with nothing 11 years ago, Jim & Sarah now run a successful medium sized (82 ha) dairy farm on the west outskirts of Barnsley with 126 cows yielding 9,000 litres, together with a highly profitable public attraction as a sideline in the school summer holidays. The farm was runner-up in the 2000 BGS National Silage competition and Northern winner of the Maize Growers 2001 Silage Competition. Soils are derived from coal measures, including some restored opencast, leading to mineral imbalances. The area is dry and there is a high dependence on conserved forage: 1000t grass and 600t maize silage are made annually plus wholecrop winter wheat. Lupins (10 ha) and winter beans (4.5 ha) were also being tried. Milk is sold to Arla Foods. Taking advantage of a large public car park and toilets across the road from the farm, Jim had the idea of developing a maize maze and a safe children's play park. The facility attracted 17,000 people in 2003. Entry was £3 per adult, £2 per child, £12 per family. Once inside visitors are briefed about maize and farming and told not to damage the maize because it's the cow's Christmas dinner! There are add-on leaflets and quizzes and everyone is hungry for information. To avoid night time trouble, Jim sleeps in the playground during the main season. A novel innovation was the use of goldfish in the drinking troughs to keep the water clean.

Mega Investment and High Tech on a Mega Farm – Washfold Farm, Leyburn *(Metcalfe Farms, David Metcalfe & Family Partnership)* The second day visited farms north of York, beginning with this large dairy farm, running 550 cows, 450 youngstock and 700 mule sheep. The partnership has 4 farms totalling 660 ha (1617 acres) and currently holds the Yorkshire Agricultural Society award for the best farm over 1000 acres. The 200 ha arable area includes 50 ha wholecrop wheat and 65 ha maize. 330 ha are in LFA including rough grazing and heather. Cows average 9,400 litres with 3 times daily milking; milk was recorded at each milking and the cows fitted with pedometers to aid heat detection and herd management. TMR (grass, maize and wholecrop) was fed throughout the year with little reliance on grazing. Some of the land is NVZ and manure handling is carefully controlled. A new slurry separator and holding tank have been erected in the yard plus a 9 million litre lagoon excavated in the middle of silage ground. Solid manure goes on maize land, the liquid stored for dispersal in Spring. The liquid has a fertiliser value of £85 ha^{-1}. Extensive conservation measures includes 6m field margins on all arable and maize land, hedge planting and dry stone walling.

Profitability with Simplicity à la New Zealand – Nether Silton, Thirsk *(Les & Christine Scaife)*. The next farm was in complete contrast to Washfold, aiming for low investment, low labour costs and a more attractive life style. There is a high reliance on grazing with the emphasis on profitability with simplicity. A high input-high output system with 170 cows and 'no time to think' was cut short by Foot and Mouth Disease in 2001. The farm was restocked in 2002 and most of the farm reseeded with long term leys. Now, 140 cows are milked, averaging 5,400 litres on 300kg concentrate. Having joined the local grazing discussion group, maximum use is made of grazed grass, block calving in spring, grazing the grass rotationally until November. The cows are down to once-daily milking in October and dried off at end of November until calving in mid-February to April. The farm is all grass, 69ha tenanted, with another 14 ha 1.5 miles (2 km) away. 300 kg ha^{-1} N and up to 100 kg ha^{-1} potash are used. Breeding policy is based on New Zealand genetics. The Scaifes now have "a sustainable system that is a pleasure to run".

High Quality Beef from Easy Care Red Cows – Elm House Farm, Green Hammerton *(Tom & Mike Powley)*. The next visit was to a medium size family farm in the Vale of York between Harrogate and York. The family partnership was set up in 1987 and now has a spring calving suckler herd producing quality finished beef together with an arable enterprise. Sugar beet (20 ha) and cereals (51 ha) are grown with 20 ha of 5-year leys in rotation. A further 22 ha permanent grass make up the total of 113 ha. For consistency of top quality, rapid economic growth rates and easy management, a herd of 'Red Cows' – South Devon x Limousin is being developed, with Belgian Blue terminal AI. The South Devon is docile, prolific, with good milk production and a voracious grazer. The Powleys work closely with their customers and feel "the cross is perfect to produce the meat wanted by the consumer". Daily liveweight gains were 1.5-1.7 kg, achieving high grades. In 2003 carcass weight averaged 415 kg at 442 days old, killing out at 62%. Rainfall is low and fertiliser use restricted in late summer, averaging 150 kg N ha^{-1}.

Low Cost Beef Production with Stabilisers on Chalk – JSR Farms, Givendale *(Richard Fuller, manager)*. The third day began in dense mist (Yorkshire Fog!) at 150-200m in the Yorkshire Wolds, where the soils are thin over chalk limestone. Richard Fuller is Manager and Livestock Specialist for JSR Farms and also a Director of Beef Improvement Group Ltd. He thinks that the way forward is with the Stabiliser breed, a composite of British Red Angus, Hereford, Simmental and Gelbvich, using embryo transfer to increase offspring. Richard spoke at the BGS visit to Auchenbainzie (David Kirkpatrick) in 2003. He received the 2004 Royal Agricultural Society's Award for Excellence in Practical Farming. Givendale is a 488 ha mixed farm, with winter wheat and

barley, spring barley, vining peas, temporary and permanent grass. Some of the 150 Stabiliser sucklers and 700 Lleyn X ewes were seen on steep chalk grassland. The Stabilisers were docile, good on feet and with good body condition, bred to eat and perform on grass. Wintering was on ammonia-treated straw and silage, producing high quality meat. Much of the farm was under a Rural Stewardship Scheme – arable field margins, hedge management (cut to 2.6m every 3 years in rotation) and extensive grass management.

Practical Farming and Research on a Thriving College Farm – Bishop Burton College, Beverly *(Manager: Paul Robinson)*. The college farm of 360 ha was in an NVZ with 670 mm rainfall on soils varying from boulder clay to free draining calcareous loams. Arable crops included sugar beet, oilseed rape, wheat, peas, spring barley and maize, all receiving slurry by an umbilical system. Stock were 150 Holstein/Friesians, 90 beef cattle, 80 horses, 250 pigs, 100 Suffolk X and 250 Lleyn sheep. Cows milked thrice daily, yield 9,500 litres, fed maize, wholecrop, grass silages and grazing dictated by horse trials. Some 40 ha of arable is under a Countryside Stewardship Scheme, including headlands and winter stubble. The headlands were infested with docks and thistles. All fields had to be mapped to determine the correct areas for spraying. The farm had to 'stand on its own feet' commercially and Paul Robinson admitted it was difficult to combine commercial farming and College teaching. There were however 1500 full-time and 500 part-time students, mainly in non-agricultural courses such as equine and countryside courses. The Kingsley Farming Trust ran maize and red clover trials on the farm, and there were extensive new buildings. On loan (£4,500 per year) was a high-tech Nitrogen sensor on a tractor cab. This sensed the colour and biomass of the crop allowing a variable application of fertiliser, with a potential for considerable savings.

Four-fold Diversification within the Family – Carr House Farm, Allerton, Pickering *(Chris Stockdale & family)*. The final visit was in the Vale of Pickering, near Scarborough. This was a lake in prehistoric times with good land but difficult if cultivated at the wrong time. Chris was 3rd generation at Carr House, his grandfather having taken a 60 ha tenancy in 1953 with no water supply or other amenities. The farm now was 134 ha, 69 ha grass, 53 ha arable, 6 ha set aside, 6 ha caravan park. The caravan park had required high investment (£180,000) but now contained 100 pitches and luxury sites, with associated shop, sewage works and 2 wardens. A winter licence for use at Christmas/New Year had been applied for. Following construction work at the caravan site, brother John had developed his own self-taught business, employing 5 men for draining, concreting, paving, etc. The third diversification was run by Chris' father, supplying up to 18,000 eggs daily to shops, hotels and local outlets. 5-6,000 pullets were kept in summer when the sheds were empty

and 50 cases were bought in every day of the year. The dairy handled 130 cows on a high input/high output system, yielding 8,400 litres, paddock grazed, with buffer feeding silage and kale in July when grass was short due to low rainfall. In 2004 Maris Kestrel Kale had been drilled on 2 May after slurry application. Drilled Italian ryegrass also featured in the rotation.

Alternative Programme

A varied Alternative 3-day programme was arranged running in parallel with the farm visits. This included visits via Otley to Saltaire where there was a guided tour of a Model Village built by Sir Titus Salt 1851-1876, now a World Heritage site; an RHS bi-centenary garden at Harlow Carr; Robert Thompson's Furniture workshop with Museum, original workshop of 'Mousey' Thompson. A carved mouse became the trademark of oak furniture made by Thompsons from 1921 onwards. James Herriot Museum in Thirsk; farm diversification enterprise 'Ample Bosom', selling outsize underwear through the internet by return of post using a converted pighouse as a bra warehouse. This was followed by a whole day touring York, including a guided tour.

SWSGS EVENING FARM VISIT 2004, KIRKCUDBRIGHT

G E D Tiley

Visit to Crofthead, Crocketford, Dumfries on 18 August 2004
(By Invitation: Mark Callander & Family)
Visit sponsored by **Mathers Ltd** and **DeLaval**

The South West Society's second farm visit this year was to another large dairy unit, with modern developments. Crofthead is part of a 2-dairy business managed by Mark and his brother David, East Glenarm. Total area is 1000 acres (400 ha), all grass apart from 34 ha of wholecrop barley. The Crofthead herd consists of 500 Ayrshires, with a further 200 Ayrshires at East Glenarm. Total cattle are 1,350 including heifers, stirks and calves. In 11 years the herd has expanded from 200 cows yielding 1.5 million litres to the present numbers yielding 5.5 million litres, sold to R Wiseman. A particular feature in a very neat and tidy group of buildings was a new DeLaval 40-point Rotary Parlour and 20,000 litre tank. The parlour runs on roller bearings in an oil bath and is scheduled to last for 20-30 years without major maintenance. One revolution takes 10 minutes, 15 seconds being required to put the unit on. Slow milkers are identified, a light comes on and a chain attached to allow a second revolution. The cows regard each stall as their own and heifers enter without difficulty, there being automated feeding. Jets of water keep the platform clean and the unit damp. Milking is carried out by one person, a second attending to bedding etc. Cows enter aided by a backing gate with a warning bell. A shedding gate is required at the end of milking. In 2004 the cows were paddock grazed by day and set stocked at night, and the Society saw 230 Ayrshires, all in calf, grazing in a 6 ha night field. This has now evolved into complete paddock grazing for more effective use of the grass. Cow tracks have been laid using rotten rock from excavations for the new dairy. The tracks are as straight as possible avoiding tight corners which cause the cows to halt. Grazing fields receive regular 250 kg ha^{-1} dressings of 27/5/5 NPK. The silage fields get slurry plus 110 kg N ha^{-1} for 1st cut, 80 kg for 2nd cut and 67 kg for 3rd cut. In 2004 144 ha were cut 15-17 May and 12-13 July, with 80 ha awaiting 3rd cut. Two self propelled machines were used, cutting 80 ha day^{-1}. Slurry was spread using an umbilical system which could reach practically the whole farm. Field boundaries were excellent with immaculate stone dykes. Asked about the future, Mark thought he could improve by getting more out of grass.

The Society thanks Mark, his parents and family for this visit and warm hospitality, and also to tractor driver Martin for his skilled transport of the visitors around the farm.

SAC DAIRY RESEARCH CENTRE
David Roberts, Head, Dairy Research Centre, Crichton Royal Farm, Dumfries

SAC has focused its dairy research activity around the Dairy Research Centre at Crichton Royal Farm to provide a world-class research centre for Scotland's dairy industry, and to provide a platform for collaboration with other major players. Our aim is to answer research questions that have a direct bearing on dairy farming. SAC's primary function is to ensure the practical development of basic and strategic information through research, and then to help implement these strategies by working with the industry, developing R&D programmes to meet industry needs and disseminating results through specialist consultants. SAC research focuses on improving profitability and thus sustainability, improving cow health and welfare, developing integrated farm management and improving production of milk for different market niches. Education and dissemination of research findings are integral to the work carried out and our links with associated institutes and universities, in Scotland and beyond, are vital in this respect. Visits to the farm by a variety of organisations are an important aspect of our knowledge transfer work and industry needs. Since 2002 Crichton Royal Farm has been an innovation site for LEAF (Linking Environment and Farming).

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e-mail: dave.roberts@sac.ac.uk

In addition to the Dairy Research Centre SAC has the following other offices in the south of Scotland:

Dairy Select Consultancy	Midpark House, Dumfries. DG1 4SZ	01387 263961
Farm Business Services Consultancy	Midpark House, Dumfries. DG1 4SZ	01387 261172
Farm Business Services Consultancy	99 George Street, Stranraer. Wigtownshire. DG9 7JP	01776 702649
Farm Business Services Consultancy & Veterinary Investigation Laboratory	Greycrook, St Boswells, Roxburghshire. TD6 OEU	Consultancy: 01835 823322 Vet Centre: 01835 822456
Veterinary Investigation Laboratory	St Mary's Industrial Estate, Dumfries. DG1 1DX	01387 267260

SWSGS SILAGE COMPETITION 2004
Competition Evening of SWSGS, held in Douglas Arms Hotel, Castle Douglas on 20 January 2005
G E D Tiley

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

Silage Judge: Tom Craig, Carsehall, Ballykelly, Co. Londonderry, Ulster

Following a short AGM of the Society, the Chairman Adam Gray welcomed Members of the Society on a wet windy evening, and introduced the Silage Judge, Tom Craig from Northern Ireland. Tom is a keen member of the Ulster Grassland Society who had represented that Society during a recent visit by SWSGS to Northern Ireland (see p50). Alongside a successfully managed dairy enterprise, Carsehall has progressive farm conservation measures for which they won their local Ulster Grassland Society's environmental competition in 2004. Tom writes for the Holstein Journal and is involved with Global Genetics.

Silage Quality 2004 – David Mowat, SAC Farm Business Services, Dumfries. Reviewing Silage Quality in 2004 (Table 1) compared with previous years, David Mowat noted that quality had been extremely consistent over the past 4 years. This reflected an ability to make good silage even under poor conditions. Analytical techniques had changed from 10 years ago and now depended more on cow performance. Quality of fermentation had improved, as indicated by the Intake Factor and Ammonia levels. A notable feature was the large variation in protein contents which would have to be taken into account when making up rations. Also, due to high qualities, cow consumption would be high with a risk of silage running out. Beef/sheep silage DM was higher this year, but ME lower; big bales were better than pit silage on average.

Silage Judge's Comment

Tom Craig had looked forward to seeing and judging farms in south west Scotland, and thanked the Society for the invitation, and farmer entrants for the opportunity of judging their farms. There was a very wide range of farms and he had tried to focus on the forage. He was surprised at the number of outdoor pits and also at the number of farmers still spreading slurry, bearing in mind the wet conditions. He felt more pits should be roofed as 1 metre of rainfall on a silage pit equated to 0.5 million litres water. On beef farms, grouping of animals made for ease of management. Table 3 details all the Competition winners announced by the Judge.

Table 1 - SILAGE COMPETITION 2004 - ANALYSES MEANS

Overall Means - Grass Silages

Group (Number)	DM (%)	D (%)	CP (%)	ITF (C)	ME	NH_3 (% total N)
All Dairy (67)	27.9	70.3	14.6	106.4	11.2	7.2
Beef/Sheep (16)	31.0	67.3	11.9	109.5	10.7	8.6
Big Bale (7)	49.3	68.4	12.2	117.0	10.9	7.8
Dairy						
Ayr (21)	30.4	72.1	15.0	110.7	11.5	7.0
Dumfries (20)	24.7	72.0	15.1	102.7	11.5	8.4
Kirkcudbright (11)	28.9	70.3	14.2	110.1	11.2	5.9
Wigtown (14)	28.3	69.8	14.2	110.6	11.2	6.8

Wholecrop, Maize and Alkalage Silages

Group (Number)	DM (%)	pH	D	CP	Starch	ME
Wholecrop (8)	40.3	4.0	66	10.8	26.5	10.6
Alkalage (5)	73.8	8.0	71	13.6	36.1	11.3

Table 2 - FREQUENCY DISTRIBUTIONS (%) 2004

					Dairy		
	Bale	Beef/ Sheep	A	D	K	W	All
No of Entries	7	17	21	21	11	14	67
D-Value							
>75	28	0	14	10	0	0	8
70-75	14	23	67	76	73	50	67
65-70	29	65	14	14	27	43	22
60-65	29	12	5	0	0	7	3

Table 2 - FREQUENCY DISTRIBUTIONS (%) 2004 cont.

	Bale	Beef/ Sheep	*Dairy* A	D	K	W	All
DM							
>40	100	18	10	0	0	0	3
30-40	0	18	43	10	36	36	30
25-30	0	46	28	38	36	36	34
23-25	0	6	19	14	19	21	18
20-23	0	12	0	28	0	7	10
<20	0	0	0	10	19	0	5
CP							
>18	14	0	5	10	0	0	5
16-18	0	0	14	33	9	21	21
14-16	28	12	62	24	54	50	46
12-14	14	46	5	24	19	22	16
10-12	0	29	14	9	18	7	12
<10	40	13	0	0	0	0	0
ITF (C)							
>125	28	12	14	5	18	7	10
120-125	14	12	14	0	0	0	5
110-120	40	17	19	24	27	50	28
100-110	14	41	38	28	27	36	33
90-100	0	12	15	33	19	7	19
<90	0	6	0	10	9	0	5
Ammonia-N							
<4	0	6	0	5	9	7	5
4-7	29	35	38	33	73	43	43
7-10	57	41	52	38	9	43	39
10-15	14	12	10	19	9	7	12
>20	0	6	0	5	0	0	1
ME							
>12	29	0	14	10	0	0	7
11.5-12.0	0	12	48	57	27	36	45
11.0-11.5	14	12	28	19	54	36	31
10.5-11.0	29	59	5	9	19	21	12
10.0-10.5	14	11	5	5	0	7	5
<10.0	14	6	0	0	0	0	0

Table 3 – 2004 Silage Competition – Short Leet Entrants

Prizes		Marks *Analyses (35)*	*Inspection (65)*	*Total (100)*
	Dairy Class			
1st & SWSGS Rosebowl	J Mackie, Dalfibble, Parkgate	32.1	55.5	87.6
2nd	D Finlay, Rainton, Gatehouse	26.9	52.0	78.9
3rd	W&A Hogarth, Knockrivoch, Saltcoats	29.8	49.0	78.8
Best New Entrant	M & J G Dunlop, Bishopton, Kirkcudbright	28.4	49.0	77.4
	M Howat, Stevenston, Auchinleck	30.8	46.5	77.3
Michael Milligan Prize	J Hockin, Barony College, Parkgate	29.0	48.0	77.0
	H M Parker, Inchparks, Stranraer	27.1	49.0	76.1
	A Hogarth, Curragh, Girvan	29.6	46.0	75.6
	A D Marshall, West Kirkland, Newton Stewart	27.4	41.0	68.4
	Beef/Sheep Class			
1st & BP Trophy	H R & C Dalrymple, Crailoch, Ballantrae	23.3	54.0	77.3
	J Prentice, Hermitage, Castle Douglas	25.0	50.0	75.0
	A Nelson, Cogarth, Parton	24.6	50.0	74.6
	A Crichton, Killymingan, Kirkgunzeon	27.3	47.0	74.3
	Big Bale Class (on analysis)			
1st	A Allison, Macnairston, Ayr	34.0		
				Analyses (35)
	Best Silage in County (on analysis)			
Ayrshire	A Allison, Macnairston, Ayr			34.0
Dumfries	J Mackie, Dalfibble, Parkgate			32.1
Kirkcudbright	M & J G Dunlop, Bishopton, Kirkcudbright			28.4
Wigtown	M Forster, Challoch, Leswalt			28.4
	Best Wholecrop Silage (on analysis)			
Biotal Prize	Hoddom & Kinmount Estate, Carrutherstown			77.6%
	Best Alkalage Silage (on analysis)			
Volac Prize	H McClymont, SAC Crichton Royal Farm, Dumfries			58.0%

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***

Silage Winner's Comments

John Mackie, Dalfibble was pleased to win the Dairy Silage section after 25 years of trying! But he had benefited by going around other good farms with the Grassland Society. As to date of cutting, he "watched the neighbours and went the day before"! In 2004 he decided to cut 1 week earlier than normal. This gave 25% less yield but this was more than made up at the second cut. As John was away on a Nuffield Scholarship (p52) the quality silage had been made by his staff.

Robert Dalrymple, Crailoch also stressed the importance of his staff in achieving good outputs. He had 220 suckler cows on 3 units and 1300 breeding ewes. Last year lambs sold had been 175%. Due to droughty soils there was a sequence of silage cutting from the shore to fields further inland. The aftermath was grazed by lambs until mid-July. Sales of finished lambs then made way for the suckler calves. Most livestock were housed in winter to avoid damage to the grass.

Judge's Farm – Carsehall, Ballykelly (Messrs Jim Craig & Sons)
Carsehall is situated on the northern shores of Ulster just east of Londonderry. It overlooks Lough Foyle on flat land approximately 0.5m above sea level and under threat of flooding. Soil is a silty sandy loam with no stones, but abundant shells which raise the pH from 6.5 of the loam to around 7.8. Rainfall is 1000 mm. Farm size is 176 ha, 50 ha of which are rented. Crops were 54 ha grass, 60 ha cereals for seed, 20 ha wholecrop cereals, 13 ha cereals for crimping, 12 ha lucerne, 14 ha set aside. Stock was 130 cows, 60 in-calf heifers, 90 followers plus 25 breeding bulls. Current milk yields are 10,400 litres having increased from 7,400 litres from 60 cows when the farm was purchased in 1995. Bulls are selected aiming for longevity and milk solids content.

Tom is in partnership with brother Robert, who copes with the fieldwork, and father Jim. Farming objectives were to develop high output in parallel with environmental care, all to increase Net Worth. However a good standard of living was desired through increased mechanisation, keeping machinery well maintained to reduce hold ups.

Forage peas and lucerne were being tried as break crops which also yielded high protein and left an N residue in the soil. This reduced bought-in N for NVZ requirements. The high soil pH could lead to mineral imbalances such as molybdenum toxicity. A cationic balanced ration is fed 3 weeks before calving to eliminate milk fever and retained cleanings at calving. The cows are split into fresh calvers, high yielder and low yielder groups for winter feeding. Grazing is

in paddocks 100m wide which facilitates calculation of the area for cow requirements. All grass is less than 10 years old and contains high yielding recommended varieties sown with 1.2kg ha^{-1} white clover.

Conservation. Extensive conservation measures earned the Craig's their Environmental prize. There are large ponds which have been designated as Areas of Special Scientific Interest (= SSSI in Scotland) due to a wealth of breeding birds. Hedges totalling 560m per year are being planted; there is cereal stubble, beetle banks, headland buffer strips in cereals and grassland and tree replanting. Emphasis on home grown cereals reduces the need for transport; old silage covers are being used as a weed control mulch around trees and hedges; plate cooling water is recycled for the cows to drink; and a new system has been installed to recycle parlour and bulk tank washings for cleaning the milking parlour; **all office waste paper is shredded for bedding**!

2005 Update. A heat exchanger has been installed to utilise the cooling gas from the milk to heat water to 60°C for washing out the bulk tank. Carsehall is a finalist in the Ulster Grassland Society silage competition. SWSGS wishes them luck in February 2006 when the results will be announced.

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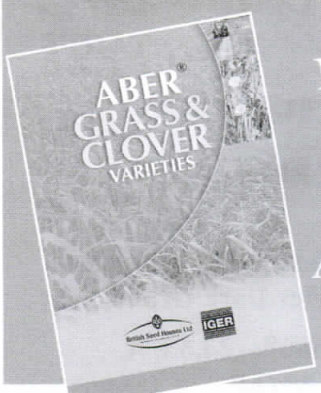

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SCOTTISH SILAGE COMPETITION 2005

R D Harkess OBE, Perth
Scottish Silage Judge

After winning the South West Scotland Silage Competition, John Mackie, Dalfibble, Parkgate, Dumfries went on to win the 2005 Scottish Silage Trophy. Runner-up was J Warnock, Eastfield, Coulter from the Central Scotland Grassland Society. All entrants demonstrated very high standards of silage quality, utilisation and stock management and it was very difficult to separate them in the judging. Marks are awarded on SAC Analytical Services silage analyses, using Dry Matter content, ME value, Crude Protein level and Silage Intake Factor. On-farm visits assessed the overall efficiency of production and utilisation of the silage. Final 2005 results were: 1. J Mackie, Dalfibble (78 points); 2. J Warnock, Eastfield (77 points); 3. A & A Willis, Glasgoforest, Blackburn, Aberdeen (74 points).

The South West, Central, North and East Scotland Grassland Societies, which continue to sponsor the Scottish Competition and Trophy, wish to express their gratitude to Dr Ron Harkess for his continued commitment and enthusiasm in judging this Competition.

SWSGS PRIZES 2004

In 2004, the Vice-President's Prize for the best Grassland Student in the Higher National Diploma in Agriculture course at SAC Auchincruive was awarded to: **Iain Muirhead** from Wester Arngibbon, Stirling. The award was presented at the Prizegiving ceremony held at Oswald Hall, Auchincruive in November. It takes the form of a cash award which the recipient may use to travel or promote further study in grassland. The prize is sponsored by the South West Scotland Grassland Society to promote and recognise excellence in grassland courses at SAC Auchincruive. The Society congratulates Iain Muirhead and wishes him success in his future career.

Wester Arngibbon – Iain Muirhead

Wester Arngibbon is a 120 ha (300 acre) beef and sheep farm in rural Stirlingshire. The farm is predominantly grassland with 15 ha of spring cereals. Soils are variable, which affects grassland management. On the heavy carse ground, timothy hay is grown and there is some rough grazing. The rest of the farm (80 ha) is sown to rotational leys of 5 to 8 years. Arable silage and spring barley are the main break crops.

AGROS DOMINATOR – A NEW GENERATION SILAGE ADDITIVE

Phil Jones, Volac International, Royston, Herts

A new generation of concentrated biological inoculant, called **Agros Dominator**, has been launched by Volac International. It is specifically designed to reduce forage losses and improve nutritional performance of high dry matter grass silages.

The product delivers twice the concentration of bacteria present in conventional silage additives and has proved to out-compete the higher levels of spoilage organisms present on wilted grass within 24 hours. The additive contains a stimulant to prime the lactic acid bacteria before application, thus achieving a faster drop in clamp pH and a quicker domination of the inefficient natural populations of bacteria found on grass. Wilting grass for 12 hours or more has become standard practice to reach the high dry matter levels of 20% to 30% DM required to maximize modern dairy cows' potential. This results in the increased growth of spoilage organisms and loss of valuable nutrients.

Agros Dominator was compared in five large scale trials on UK dairy farms in 2004. Domination of potential spoilage organisms in the clamp by lactic acid bacteria 17 hours after clamping 30% DM silage was 83% by Agros Dominator compared with 55% by the traditional additive.

Agros Dominator is available in a 1.1 kg pack to treat 100t of grass silage.

FORAGE MANAGEMENT GUIDE

Volac International Ltd

This is a concise and up-to-date summary of the principles behind conserving the different types of forages. The most important management guidelines, feed value and advantages/disadvantages are highlighted, before giving details of Volac products. The Guide is available free from Volac – Freephone 0800 919808.

NOTES FROM THE ISLE OF MAN 2004
Caroline L Perry, Secretary, Manx Grassland Society

The Manx Society's new Chairman, Juan Hargreaves, was elected during the **2 March 2004** farm visits (last year's 'Notes' in Greensward). At 23, Juan was one of the youngest and keenest members of the Society.

6 May 2004. Evening walk around **Ballakilmartin, White Bridge Road, Onchan**. A small farm of 32 ha, all ploughable, which has always been traditionally farmed. Since 1966 Harvey Briggs milked 30 cows, growing kale for winter feed and never silage. The land is now let for sheep grazing. Some areas have been released for footpaths and for enjoyment by the public.

22-23 June 2004. 'Overseas' trip to **Anglesey** led by Harri Evans. Travelling Douglas to Liverpool by Seacat and spending one overnight on Anglesey. Visits were made to a 240 ha farm on the Lleyn peninsula, changing from Beef/Sheep to a 1000 cow Jersey herd; to a farm owned by Chairman of Beef and Sheep Promotion of Wales; and also to Harri Evans' farms, one dairy and the other Beef and Sheep.

June 2004 Grassland Management Competitions. Two judges visited six farms and awarded marks for: grassland and forage policy, grazing and forage management, livestock production and welfare, environmental issues and overall impression. Winners were: **Paul Fargher**, Baldromma, Lonan – Dairy and overall winner – he then reached runner up position in the BGS Northern Region Competition; **Tim Allison**, The Craige, St Judes – Beef and Sheep.

5 September 2004. Guided walk by Des Robinson on the Calf of Man. A talk with slides on wildlife there was given on **8 December 2004**.

7-8 October 2004. Trip to Fullwood Dairy Centre, University of Nottingham to see Robotic milking, 32-point and 60-point rotary parlours, and the Fullwood factory at Ellesmere, Shropshire.

Annual Society Competitions. The presentation of awards for the 2004 Society Competitions was held on **14 January 2005** at the Imperial Hotel, Douglas. The Silage Judge, Stuart Verity, Lancs, from Clitheroe had given a talk on his farm 2 days earlier. Winners of the Silage Competition were **Douglas and Belinda Cook** of Ballamodha Moar, Malew and they received the Ellerslie Trophy. Their dairy/sheep/arable farm of 120 ha had received several awards from the Royal Manx Agricultural Society. In addition to the Silage Competition and

Dairy and Beef/Sheep Management contests, prizes were awarded in 10 other grass, wholecrop, maize, silage, hay and reseed competitions.

8 March 2005. The Manx Society visited the Silage winner's farm, **Ballamodha Moar**. Extended grazing is practised with careful strategic use of winter sheep grazing. In the afternoon, **Friary Farm, Ballabeg** (Noel, Mary and Murray Cringle) was visited: a beef/sheep enterprise on 60 ha, with 12 ha cereal for winter feed. During the AGM at midday, Angela Goody was elected new Chairman. Angela came from Suffolk 4 years ago to run a beef/sheep farm at Lonan.

BGS Summer Visit. This took place on the Isle of Man, **7-11 September 2005**. A description of the visit will appear in next year's Greensward.

BGS NATIONAL GRASSLAND MANAGEMENT COMPETITION 2004

Sponsored by Barclays and Kemira GrowHow

The 2004 winner was Tom Morris, East Lydeard, West Somerset. Tom runs an organic dairy enterprise with 180 cows **profitably** on 123 ha of grass, averaging 6,000 l (5,200 l from forage) per cow. 1 tonne silage is fed per cow plus 400 kg concentrate. Cows are out for all but 2 weeks of the year and graze paddocks in a 3-weekly rotation with backfences. The grass is grazed to soil level – 90% utilisation. Silage is only made as a grassland management tool. Soils are free draining; no bagged nitrogen applied and very little slurry produced, so there is a heavy reliance on white clover. The soils are constantly monitored to ensure the correct nutrient status. No reseeding is practised but clover seed is spread by the cows after grazing a high clover sward. Trees, fenced hedge margins and ponds are environmental features. The judges found the farm "with a highly integrated and sustainable system and a determination to maximise the potential of grass".

Runners up were: Thomas Steele, Kirkcubbin, Co. Down and Eifiona Owen, Bala, Meirionnydd.

Scotland was represented by J Sim, Rorandle, Inverurie.

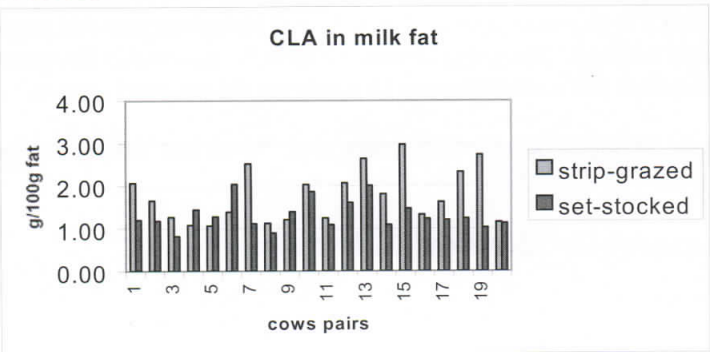
EFFECTS OF GRAZING MANAGEMENT ON MILK CLA LEVELS

Nick W Offer, SAC Auchincruive

CLA (conjugated linoleic acid) is a natural component of milk fat that has been shown to prevent cancer in animals. Some epidemiological studies suggest that this could also be true for man. Concentrations of CLA have been found to be higher in milk fat when cows graze fresh grass compared to conserved herbage. The exact cause of this is not known but it probably relates to changes in the polyunsaturated fatty acids in the leaves of herbage. Therefore cows consuming leafy fresh herbage may possibly secrete milk fat with higher CLA content than animals grazing stemmier material. This hypothesis was tested using 40 Friesian cows paired according to stage of lactation and current milk yield. One member of each pair was randomly assigned to a group that was **continuously grazed**, set-stocked on approximately 3 ha of pasture. The other cow in each pair was assigned to a group that was **strip grazed** on a fresh re-growth of grass following a first silage cut using an electric fence to give the cows fresh leafy grass twice a day. The sward was a mixture of perennial ryegrass (*Lolium perenne*) with white clover (*Trifolium repens*).

Results CLA levels (g/100g fatty acids) from individual cows for samples taken during week three of the experiment were significantly (P=0.005) higher for cows consuming the leafier strip-grazed grass (1.76 and 1.31 for strip-grazed and set-stocked respectively). Individual cows appeared to respond greatly to the strip-grazing system giving very high CLA levels in excess of 2 g/100g fatty acids. (Figure 1).

Figure 1. CLA levels in milk fat from cows grazing swards either strip-grazed or set-stocked.



Over the three weeks of the study, there was little difference in grass height between the two swards but, as intended, the strip-grazed grass was much leafier. (Table 1).

Table 1. Grass characteristics

	Week 1	Week 2	Week 3
Average grass height (cm)			
Set stocked	10.5	8.2	7.4
Strip grazed	8.5	7.8	7.6
Leaf:stem ratio (freshweight basis)			
Set stocked	1.5:1	3:1	2.8:1
Strip grazed	10.8:1	8.2:1	8.5:1

It was concluded that CLA levels in milk can depend on grazing management and that highest levels can be expected from leafier swards.

The above study was carried out at SAC Crichton Royal Dairy Research Centre in Summer 2004 by Auchincruive student, Zoe Thomas. The study was sponsored by the award of a grant of £1,000 from the South West Scotland Grassland Society. The British Grassland Society agreed also to support the training of Zoe Thomas by matching this grant with an additional £1,000. Both Societies targeted their contributions, derived from the profit of the BGS Summer Visit to southwest Scotland in 2003, to provide a potential benefit to dairy farmers. Following this initiative from SWSGS, the BGS have begun to award 2 x £500 awards annually to finance student training in grass/animal studies.

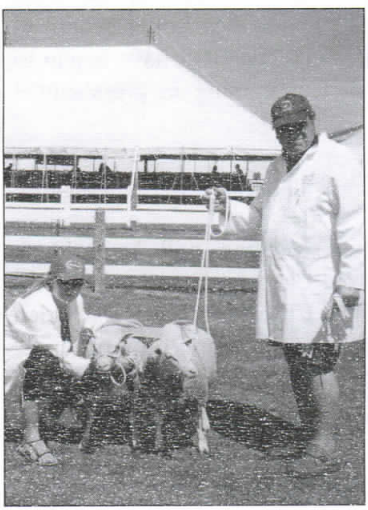
BGS SUMMER MEETING 2006

Next year's British Grassland Society Summer Meeting will be held in **Cheshire**, 9-12 July 2006. It will be hosted by the Cheshire Grassland Society and will be based in Reaseheath College, Nantwich. Cheshire is particularly rich in productive grassland and all but one of the 9 farm visits are to dairy farms, including that of the Genus MOET herd. SWSGS will sponsor 2 young members to this Meeting.

DIVERSIFICATION *PAR EXCELLENCE*
John Frame

In the early 1960s, **David Eglin** studied at the West of Scotland Agricultural College, Auchincruive and obtained the Scottish Diploma in Agriculture followed by the National Diploma. He was then granted a Colin Thomson scholarship to spend a year in the Grassland Husbandry Department at Auchincruive with the grassland gurus of those days, namely Idris Hunt, John Frame and Ronald Harkess. The first two were former secretaries of the SWSGS, and the first and third, former editors of Greensward. Apart from assisting in the Department's grassland research, David was responsible for a specific trial on the effect of muriate of potash on the growth and mineral status of Italian ryegrass. He honed his managerial skills by getting involved in student activities, not least being in charge of their annual Charities efforts in 1962.

He then returned to the family farm, Bramcote Mains, Wolvey Road, Bulkington, Bedworth CV12 9JX, Warwickshire. In effect the farmland there was the site of a wartime aerodrome and so required some judicious subdivision and building of sheds to turn the land into an 80 ha (200 acre) stock farm with sheep and pigs. The huge 2000-pig enterprise became uneconomic and was terminated in 1980. He also dabbled in organic fruit and vegetables in the 80's and even became an SDP candidate in the 1987 election!



Today, David trades under the name of R M Eglin & Son Ltd, and shrewdly runs the highly diversified company with his wife Sue, one farm labourer and a part-time accounts keeper. His two daughters, Sarah and Rachel, help from time to time, for example, at shows and at lambing, but both are carving out successful independent careers associated with farming. Sarah produces Country File (the English equivalent of Scotland's Landward) for BBC TV while Rachel is a senior administrator at the Veterinary Laboratory Agency where she is project manager and leader of the scrapie epidemiology group. However, his son Ian, like many other farmers' sons, decided that a brighter future lay outside farming with a career in the glass industry, and is currently managing glass construction at the new London Heathrow terminal.

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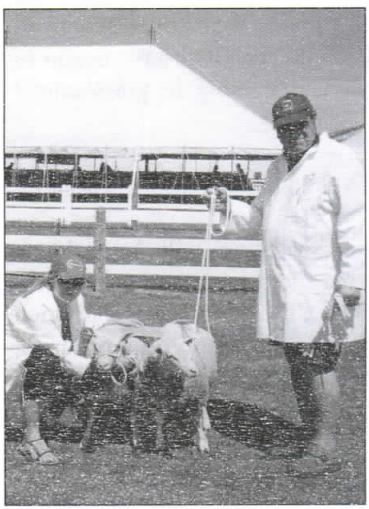

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The main farm enterprise is the production of quality standard lamb, cut and vacuum packed for the deep freeze under David's personal supervision. Customers are thus assured that, as his advertising says, "the lamb in this box comes from Warwickshire's green meadows and was home bred from our own award-winning pedigree and crossbred flock". He proudly states "full traceability from field to plate". The success of this enterprise rests on the fact that his pedigree breeds are capable of year-round breeding, being Polled Dorsets, Charmoise and Bleu de Maine, with an occasional Charollais ram. All rams are Signet Sire Reference and genotype Class I and the mark of Farm Assured Food Standards appears on advertising material. There is close contact with sheep breeders in France to maintain quality stock. The sheep have always been eartagged after seeing this at Auchincruive, but now Electronic ID is used.

On the non-farming side, David has several irons in the fire. Outdoor storage of **tourer caravans** is a major enterprise and owners have independent access to a secure well-fenced site and option of a fitted GPS security alarm system. He could double the size of his site if the local authorities would allow it. Owning a number of tourer caravans himself, David hires these to some of the big agricultural shows as bases for stockmen, not least to the Royal Show at Stoneleigh, just 'down the road' from Bramcote Mains. Then there is his series of **fishponds** where fishermen can catch carp, albeit they have to return the fish to the ponds. Having an area of hillocks and depressions, **4 x 4 enthusiasts** can bring their vehicles and have a go; it helps that soldier drivers from the local army bases also gain experience of roughland driving there. A closely mown cross in one of the sheep-grazed fields turned out to be runways for **model aeroplanes** where local aero enthusiasts can enjoy their hobby; a storage hut houses a mower for keeping the narrow runways closely cut. David also lets out a small spare building to a local children's **theatrical company**. Last but not least, he has recently attended a **facilitator's course** which enables him to bring parties of urbanites or children to the farm and acquaint them with modern-day farming and rural stewardship. He has plans for a custom-built classroom and, in line with government policies, is upgrading the environmentally beneficial aspects of the farm. Tree planting along the banks of his fields next to a motorway is one of the priorities.

Clearly, Auchincruive can be proud of one of its 'products' and I am certain David's fertile mind is planning his next diversification project. His talents are in demand for various committees and the local village benefits from his counsel and also the local cricket team when needed. He is currently the Vice-Chairman of Warwickshire National Farmers' Union, the Farming Wildlife Advisory Group and the Town and Country Organisation.

RESEARCH, TEACHING AND PRACTICE FOR MILK PRODUCTION

G E D Tiley

A Visit of SWSGS to Northern Ireland, 6-7 October 2004

A group of 12 SWSGS members made a 2-day visit to Northern Ireland to look at recent developments in dairy farming on the other side of the Irish Sea. Travel was by ferry then hired mini-bus to visit the Agricultural Research Institute of Northern Ireland at Hillsborough, Co. Down, Greenmount Agricultural College, Co. Antrim and David Wallace's farm at Ashdale, Co. Antrim. There were high yields of milk at all three places, with a range of diets based on grass and silage.

At **Hillsborough** the feeding and management of high genetic merit cows was being studied, using high/medium quality silages, different concentrate levels and lax/tight summer grazing. The different systems had little effect on milk output or herd fertility, but stocking rates differed, so affecting management inputs and N outputs. Norwegian Dairy Cattle were being compared with Holstein-Friesians; their fertility records were better but 1st lactation milk yields lower. There was also research into the reduction of P and N levels in ground water from dairy farms.

Greenmount Agricultural College is funded by the Department of Agriculture and Rural Development (DARD) in Northern Ireland and gave the impression of a vibrant and progressive institution. Long-term feeding trials were in progress, aiming to improve milk composition and thus enhance quality premiums. Emphasis on milk composition is because over 80% milk in Northern Ireland goes for processing. The 3 main trials were: **Cream Herd** with 30 high genetic merit cows in a closed herd targeting 11,000 litres, calving index 420 days and feeding 3.5t concentrates cow^{-1}; **High Forage Herd** maximising production from grass and silage, with herd average (80 cows) of 7,500 litres, 4,500 litres from forage; **Premium Milk Herd**, 70 cows managed to improve milk composition to targets of 3.5% protein, 4.1% butterfat and average yield 7,500 litres. All three herds provided practical management participation and training for college students.

Ashdale Farm. Seeing the superbly managed pastures at Ashdale was undoubtedly the highlight of the tour. David and Gloria Wallace were winners of the BGS UK National Grassland Management Competition in 2003. Although the land was heavy and wet, careful and sympathetic management of 175 high-yielding Holsteins had produced an extremely even and vigorous grass sward. High quality silage was a must so the grass was always cut early. Average milk yields were currently 8,700 litres from 105 ha and 1.7t concentrate

cow^{-1}. Small areas of triticale and wholecrop wheat were grown to allow reseeding. The soil is regularly tested and slurry nutrition budgeted.

Members of the SWSGS group wish to express their grateful thanks to the Northern Ireland hosts for their enthusiastic welcome, the time devoted to the visit and for the very warm hospitality. The tour was stimulating and a challenge to consider new ways of maintaining profitability.

SPEND LESS ON WATER AND WASTE

Adrian Jones, Environmental and Waste Management Engineer, SAC Auchincruive

Most farms spend money on buying water and handling waste. However, immediate and significant savings can often be made on both Dairy and Beef Farms. Furthermore, saving on one can usually result in a saving on the other. Typical cost of water purchased from the mains is 75p/m^3 (or £3.40 per 1000 gal). A mains tap switched on can cost £3/hour to run, equating to more than £1,000 a year for using a mains fed hose for 1 hour a day! **But** most of us use a volume wash pump supplying twice that flow rate. Using this for 1 hour a day would result in an annual cost exceeding **£2,000**.

After using this the washings are not drained away for free (or shouldn't be!), but are usually added into the slurry system. To buy slurry storage capacity for 4 months this water can typically cost **£20,000**. Having paid for it in the first place, then paid to store it, this water then costs another £720 to spread 4 months' worth onto land - a further annual cost of over **£2,000**.

Save by considering your system and practices. The use of pre-cleaning areas such as collecting yards, can cut wash time and water consumption by over 30%. Pre cleaning a collecting area leaves less solids to be moved by water and can make water use more efficient. Using a pressure washer cuts water use by 50% compared to using a volume wash hose. (Flow rate is actually 25% but the job takes a little longer). Consider a private water supply to service stock drinking and surface washing and, if roof areas are large, a roof water recovery system. Water re-circulation (using water twice for different purposes) can significantly reduce the amount of water discharged into the slurry system. Payback periods for these systems can be typically 1 to 2 years. Thereafter, annual savings on dairy farms can often be £2,000-4,000 per year. This is in addition to any capital saving if you are having to purchase slurry storage.

In summary – **SAVE WATER TO SAVE WASTE TO SAVE MONEY!**

DAIRY FARMING ASSURANCE WORLD WIDE

John Mackie, Dalfibble, Parkgate, Dumfries

Resumé of a Nuffield Scholarship Travel Award

Having received an HSBC Food Chain Award under the Nuffield Scholarship Award Scheme, John undertook a 10-week study tour to look at **Dairy Farming Assurance in the Food Chain – Making it Pay.**

Initially, 3 weeks were spent looking at the industry in the UK and visiting supermarkets, factories and farms. Farm Assurance assessors were shadowed as they carried out their audits to select areas that had to be studied. The internet was then surfed to scan Assurance Schemes around the world. As a result, it was decided to concentrate the study in Australia (5 weeks) and Canada (2 weeks). In Australia visits were to dairy farms mainly in Victoria and New South Wales plus factories and supermarkets. In Canada, these were in Quebec and Ontario. As a Nuffield Scholar, John found himself always well received with unstinted help from his hosts.

Dairying in **Australia** was very impressive, with milk sold at 12p l^{-1} and making money. Feeding regimes were surprisingly similar to UK, ie: trying to maximise the use of grass. However this disappeared in summer when reliance was placed on plenty of grass and maize silage – fed at the same time of year as in UK but for different reasons! However there were no housing costs as feeding was on concreted areas. In **Canada**, dairymen found life difficult as they received 25p l^{-1} and were **not** making a profit. Here stock was mostly housed year round and fed on conserved forages.

In brief, John's main conclusions from the study tour were:

1. Throughout the world consumers expect safe food but do not understand the intricacies involved.
2. Basic farm assurance will not gain a premium, whereas enhanced standards of welfare, environment, quality and traceability ('Gold Plating') will.
3. Assurance standards around the world were converging with globalisation. Adoption of HACCP principles (Hazard Analysis Critical Control Points), applicable at any level in the food chain, is today's dominant approach.
4. Harmonisation of schemes in the UK and around the world should be encouraged. Any differences in safety programmes should be agreed internationally to reduce trade distortion.

On-farm recommendations advocated:

a) Adoption of HACCP based schemes.
b) Use of technology to simplify processes and recording.
c) Use records to improve management in addition to obligatory requirements.
d) Use bureau type services to organise record keeping.
e) Scheme owners should help and train farmers to meet compliance.
f) Consider licensing farmers to reduce auditing costs, encouraging them to attend short courses specific to a licence.

"Being recognised as professionals would be a positive outcome for farmers and farming".

CHECKING OUT CARE OF THE SOIL
G E D Tiley

In the days before TV an old West Country wag used to say on the radio "Oi think the answer lies in the soil". The farmer, above all members of society, has always appreciated the paramount value of the soil for his crop and animal production and indeed ultimately for survival. In Scotland, in particular, a free draining field of easily worked fertile loam is priceless. In an age when gigantic heavy machinery and activities of the vast population of mankind can in no time cause irreparable damage and irreversible changes in the soil, it is timely that the Scottish Executive have highlighted the need to protect and intelligently care for this most precious resource.

The **Farm Soils Plan** has therefore been launched as a joint initiative from key official and voluntary bodies in Scotland. The Plan reminds farmers, crofters, contractors and others dealing with soil of the factors which can maintain **soil quality** and **sustainability**; eg: identifying poor soil conditions, maintaining soil structure, reducing erosion, preventing pollution and managing nutrient inputs. These can all have a bearing on scores for Good Agricultural and Environmental Condition (GAEC) which figures in the Single Farm Payment.

The **Farm Soils Plan** (FSP) is being widely circulated and, as with the previous **Prevention of Pollution Code** and **4 Point Plan, i**s available free from local SEERAD offices. Enquiries to: Rebecca Audsley, SAC Auchincruive – Rebecca.Audsley@sac.co.uk.

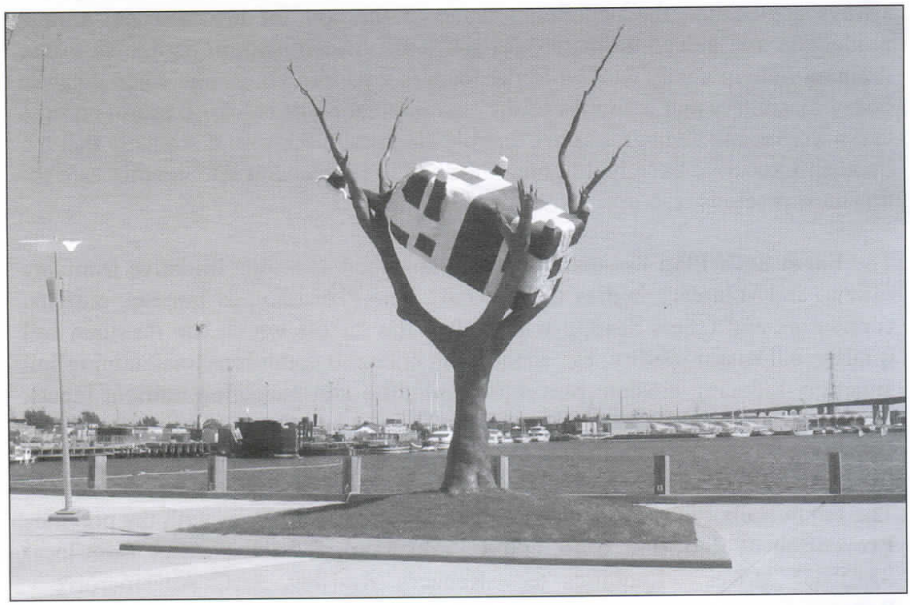
TRAINING COURSE TO IMPROVE THE DAIRY BUSINESS

John Mackie, Dalfibble, Parkgate, Dumfries

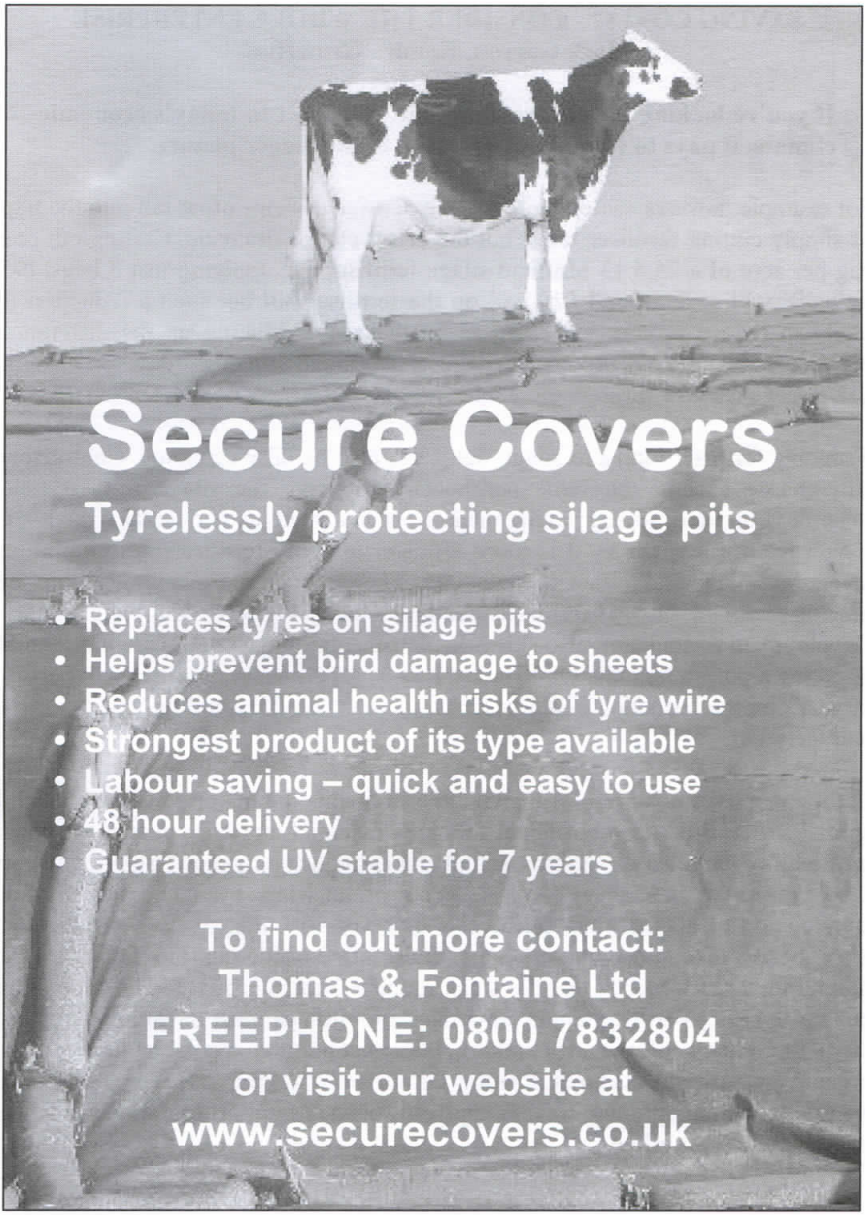
As a result of his visit to Australia, John has been involved with the introduction and development of a 3-day training course to benefit dairy businesses. This is being developed by a team of Australian consultants together with the Milk Development Council, and the Crichton Royal Dairy Centre (Jimmy Goldie).

The initiative originated from an invitation to attend a dairy management course being presented by a group of independent consultants in 'The Fishy Pub' in a small town south of Melbourne in Victoria. They looked at forward planning, both physical and financial, based on a computer model program. At 12p l^{-1} the Australians were making money by a very focused and business-like approach to costs – looking to the market for a return, not to government support, as did the Canadians.

MDC hopes to launch this course, duly adapted to UK conditions, by early summer 2006.



Cow in a Tree, Melbourne Harbour (best appreciated after visiting 'The Fishy Pub' or similar hostelry)



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SAVING COSTS? - CONSIDER THE WHOLE ENTERPRISE

Mark Garrett, Kemira GrowHow

If you're looking for cost savings, and who isn't in today's economic climate, it pays to stand back and take in the bigger picture.

For example, farmers switching to more extensive systems often fall into the trap of simply cutting fertiliser rates, but the effect can be dramatic. Cutting out one bag per acre of a 25.4.13 Multicut silage fertiliser and applying just 3 bags, (95 kg ha^{-1}), will save around £20 ha^{-1} on the fertiliser bill but such a reduction is likely to reduce protein levels by as much as 4%. Making up the difference between 11% and 15% protein in silage costs around 10p cow^{-1} day^{-1} on cake or £18 to get each cow through the winter.

Reducing fertiliser inputs to silage fields can also be false economy. Contractors will charge exactly the same per hectare to make the silage from a field regardless of yield, so any saving made from lower inputs is quickly wiped out. If you require less silage, it is more efficient to apply fertiliser up to optimum levels for silage and reduce the area cut. There is then more land available for grazing with a lower fertiliser requirement. Figures from the Potash Development Association also show the detrimental impact on low K index soils of taking a potash holiday. On K index 1 soils, severe yield penalties will occur - in year one the reduction could be 13%, in year two 25% and by year 3 nearly half the yield.

In the main livestock areas of the UK grass remains the major constituent of the animal's diet. Producing sufficient forage is essential, not only in terms of farm profitability, but also for environmental and assurance purposes. Before you can save you must understand the true costs of growing grass and have a full appreciation of all the other farm costs involved for milk, or meat production. This means taking account of staff time and considering the full costs of providing the Dry Matter that the stock require – home grown fodder as well as bought-in cake. Fertiliser application rates and timings must be targeted to meet the requirements of the crop taking into account the available nutrients in organic slurries and manures. Kemira GrowHow's T-Sum 200 is a good guide for predicting the optimum time to apply Nitrogen at the start of the season when ground conditions allow.

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DAIRY FARMING EAST OF BERLIN

Dr George Fisher, Offerings Director (Cattle), Kemira GrowHow
President, British Grassland Society, 2005-2006

Twelve months ago I was lucky enough to take on a new role in Kemira GrowHow, developing products and services for dairy farmers in the Baltic countries (Estonia, Lithuania, Latvia, north Poland, southern Finland). In the UK, GrowHow make and sell fertilisers, but out east, we offer feed acids and preservatives, crop protection, seeds, harvesting and feed processing, as well as fertilisers. It has been a fascinating education to work with dairy farmers in these countries, which apart from Finland are recent entrants to the EU.

In answer to the question: what is dairy farming like out there, depends on where you are. The countries are all very different, more so than the different countries of the UK. Large herds of over 300 cows are common in Estonia and parts of Latvia, but herds are small in Lithuania and Finland, where the average number of cows on a farm is 25. In countries like Poland, Latvia and Lithuania, much of the milk production goes directly into family or community use, without going through a third party milk buyer or processor. The answer to the question: should we be worried about competition in dairy markets from eastern Europe, is "No". Out there winters are harsh, summers are hot, farming systems are still inefficient and their markets are expanding further east into Russia and the Ukraine, not west. Costs of production in the east will always be relatively high compared to the UK for one basic reason; we can grow cheap grass, which will always give our systems an advantage. The climate in these eastern countries will not grow cheap grass and so feeding costs are higher. I would be more worried if I were a dairy farmer in Germany, where production costs are also rising and perishable dairy products can be more easily and cheaply transported from east to west by road.

As an example we are working with a farm near Tallin, the capital of Estonia. There are 1000 ha (2,500 acres) with Friesian cows housed all year in old sheds. Staff are 24, most with shares in the business which is an old state farm from the communist era. The parlour is an old 6-by-6 which keeps breaking down, so they milk for 20 hours a day; the cows are yielding 7,500 litres on 2 t of cake, and forage is mainly timothy / meadow fescue haylage and maize silage. Milk price was equivalent to 7 p l^{-1} before they joined the EU, 22 p l^{-1} after joining and has settled to a more sensible 17 p l^{-1}. Costs are rising fast, land will be lost to a road development and Tesco have started building a supermarket a few miles down the road. There are new slurry storage facilities on the farm and the farm manager is constantly pestered by new environmental and safety legislation and bank reps. selling loans for expansion.

This farm really sums up the situation - large potential and big challenges. Thankfully for us, the growing markets are at home in Estonia and to the east. Progress is being made, but it will take time. When the systems have modernised and geared up to the local conditions and market needs, the long term challenge will be to maintain profitability, just like it is here!

MAIZE 2005
Notes from Crichton Royal Farm
Jenni Bell, Dairy Research Centre, Crichton Royal Farm, Dumfries

Maize was grown in three fields (Bungalow, Stonehouse Wood and Netherwood Steading) at Crichton Royal Farm in 2005. The varieties grown were:Apostrof, Baltis, Bowling, Nancis and Scimitar. Baltis was grown specifically to harvest as grain.

Cultural details were as follows: Bungalow field. Variety Baltis, 8 ha sown under plastic at 40,000 seeds ha^{-1} with Stomp and Atrazine pre-emergent herbicide. Also in Bungalow field varieties Apostrof and Nancis (4.5 ha) were sown at 45,000 seeds ha^{-1}. In Stonehouse Wood 6.4 ha Bowling were sown at 40,000 seeds ha^{-1}. All the above received the post emergence herbicides: Jester 0.4 kg ha^{-1} + Kinetic wetter and Atrazine 1.5 kg ha^{-1} in June. In Netherwood Steading field, 5 ha variety Scimitar were sown at 42,000 seeds ha^{-1}, receiving post-emergence Callisto 0.75 kg ha^{-1} and Samson 1 kg ha^{-1} in May. The spring seedbed preparation consisted of applying 75m^3 ha^{-1} of dairy cattle slurry, in two dressings, during the spring, then ploughing and power harrowing in April.

The weather in May and June was cold and then wet, resulting in plants that appeared stressed after emergence and which grew slowly. As the season progressed both air and soil temperatures rose, with near-drought conditions through July and August, and good sunshine and Heat Unit accumulation. Growth and maturity of the crop made up for the poor start in May. More rain fell in September which allowed the crop to stay green. The non-plastic maize was harvested on 14 October, at an average yield of 17.1 tonnes/acre (42.8 t/ha). The maize under plastic was harvested on 15 November, using a combine harvester with an adapted header to harvest the cobs. The estimated fresh yield of grain was 7.5 t ha^{-1} at approximately 75% dry matter.

GRASSLAND 2005
A visit to Stoneleigh, 18-19 May 2005
Hugh McClymont, Farm Manager, Crichton Royal Dairy Centre, Dumfries

Attending the first day of this 2-day event in exceptionally fine weather, I was immediately impressed by the excellence of presentation and layout, requiring tremendous forward planning by the partnership hosts, Kemira GrowHow, in association with RASE and Farmers Weekly. The event featured all aspects of grass production and management, and also combined with MUCK '05 in featuring slurry handling and management, bearing in mind new regulations in the pipeline.

Noteworthy **grass** exhibits included: a new dock control product for clover swards; new varieties of High Sugar grasses and of red and white clover; traditional grass toppers but very few simple basic machines for this purpose; a range of grassland improvers, harrows, aerators, some with an added facility for sowing seeds in pasture rejuvenation; field displays of grassland equipment targeted mainly to contractors due to the size and costs of these machines, eg: large high output mowers for cutting and spreading in one operation; changed emphasis to self loading wagons, fashionable some years ago, perhaps now because chop length is longer and for cost reasons; large display of heavy sheeting to replace use of tyres on clamps.

Slurry handling exhibits were very much geared towards the need for **Nutrient Budgets**. These were emphasised in demonstrations of FYM and slurry application, according to DM content and nutrient analysis. Improved utilisation of slurry, eg: through trailing shoe or injection methods. A possible problem of uneven umbilical application during turning on headlands was highlighted. Fertiliser companies were all focusing on nutrient budgeting for improved utilisation, reduced pollution and better balancing of inputs into grassland. Meters for measuring available N were on display and one was purchased for use at Crichton Royal Farm.

A novel machine from Thomas & Fontaine could be used on the farm for disposal of old tyres by baling into blocks for building roads or filling in gateways (see page 62). 150 tyres compressed to a 1.5t bale and this method of disposal complies with current legislation. The event also contained an auditorium with a programme of speakers. One slot featured Caroline Drummond, LEAF Chief Executive who was encouraging farmers to 'speak out' to the public on countryside matters.

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.

The Secure Block has no associated environmental risk and has many on farm uses:-

- Stock barriers
- Constructing silage clamps
- Replacing aggregate in track and gateway construction
- Building retaining walls

Using this service waste tyres can be turned into an environmentally friendly construction material on farm.

To find out more about this service contact:

Thomas & Fontaine Ltd FREEPHONE: 0800 7832804

or visit our website at www.securecovers.co.uk

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SECURE COVERS – TYRELESSLY COVERING SILAGE PITS

Dr Gerard Thomas, Thomas & Fontaine Ltd, Craven Arms, Shropshire

Covering silage clamps with waste tyres is considered by many farmers to be the most unpopular farm job. Not only is it labour intensive and dirty, it can lead to pericarditis and traumatic reticulitis in cows if wire from the tyres is ingested. Now a cost-effective labour saving alternative is available. Secure Covers, developed by Thomas & Fontaine Ltd, keep the silage sheet in place even in the most exposed locations. The special weave of the net breaks up the wind producing a damping effect. This stops the plastic moving around even on a breezy day. Secure Covers also have the added advantage of protecting the silage sheet from bird damage, especially important with maize and wholecrop clamps. Thomas & Fontaine have found that many farmers often try covering half the pit to begin with, just to see if it works. So far, everyone has come back for more.

RECYCLING WASTE TYRES

Dr Gerard Thomas, Thomas & Fontaine Ltd, Craven Arms, Shropshire

With the introduction of the new Agricultural Waste Regulations, what's going to happen to the estimated 50 million waste tyres on UK farms? Burying and burning tyres on-farm will no longer be permissible. In addition, the cost of off-farm disposal is set to increase dramatically as tyres can no longer be disposed of in landfill sites. In response to this problem, Thomas & Fontaine have developed a new low cost environmentally friendly on-farm service for the disposal of waste tyres.

The service uses a mobile tyre baler that can compress 120 whole car tyres into a Secure Block measuring 30" x 50" x 60" (75cm x 125cm x 150cm) and weighing almost 1 tonne. The service is fast and effective, producing 4-6 bales per hour. The Secure Block produced has no associated environmental risk and has many on-farm uses including:

- Replacing aggregate in track construction
- Replacing stone in gateway construction
- Building retaining walls
- Erosion control
- Constructing silage clamps

This service, approved by the Environment Agency, can now be used to turn waste tyres into an environmentally friendly construction material on-farm.

WEATHER DATA FOR 2004
SAC AUCHINCRUIVE (35°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	7.9	2.6	4.5	178.2	25	28.0
February	8.1	1.5	4.0	44.0	13	97.5
March	9.8	2.5	4.5	71.0	15	109.9
April	12.1	5.7	8.2	73.3	18	115.9
May	14.9	7.2	12.2	42.1	15	185.1
June	17.2	10.5	14.4	78.8	21	129.5
July	18.0	11.1	15.1	57.5	19	152.3
August	19.8	12.5	16.1	172.3	19	151.5
September	16.8	10.3	13.0	120.2	22	108.1
October	12.5	6.6	8.3	130.7	23	72.7
November	10.9	5.7	7.6	76.3	21	36.0
December	8.7	3.2	5.5	123.3	25	27.5
Means/ Totals	**12.4**	**6.6**	**9.5**	**1096.7**	**236**	**1214.0**

Max air temperature: 26.7° on 8 August. Min air temperature: -5.3° on 29 February. Last frost: 17 April 2004. First frost: 19 October 2004.

* 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	4.1	2.1	4.8	107.7	26	41.0
February	8.4	2.1	5.2	81.6	12	103.6
March	9.8	2.5	5.7	74.7	14	106.2
April	12.3	5.7	9.3	79.9	20	118.8
May	16.4	6.8	13.6	36.8	10	211.8
June	18.0	10.3	15.6	83.3	17	134.8
July	18.5	11.1	15.4	58.0	16	145.1
August	20.3	13.0	17.3	204.9	19	165.6
September	16.5	10.0	14.6	115.2	16	119.9
October	12.6	6.7	11.4	146.0	21	85.1
November	10.1	5.0	8.7	36.4	14	50.0
December	8.7	2.8	6.4	102.2	20	49.5
Means/ Totals	**13.0**	**6.5**	**10.7**	**1126.7**	**205**	**1331.4**

Max air temperature: 27.4^0 on 8 August. Min air temperature: -6.6^0 on 25 January. Last frost: 17 April 2004. First frost: 19 November 2004.

2004 weather was characterised by a frequency of dull, moist or wet days, very few sunny days and a very wet autumn. At Auchincruive rain fell on 2 days in every 3. After a mild wet start, spells of cold frosty weather occurred late January onwards. The spring was cool and dull with frequent light rain. Summer had few fine days and, after a hot start, August had heavy rainfall. Dull wet weather with occasional gales persisted until the end of the year before turning to snow on Christmas morning.

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

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