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JOURNAL OF THE SOUTH WEST AND CENTRAL SCOTLAND GRASSLAND SOCIETIES

No. 39

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FOREWORD

During 1996 the South West Scotland Grassland Society, and indeed the whole grassland world, lost one of its most devoted and enthusiastic members - Dr Malcolm E Castle. Malcolm was a Founder Member, possibly the founder member of the local Society when the first meetings were held to consider its formation. Quoting from the No.1 issue of the SWSGS Journal: *"This is how it all began ..... 6th-8th December 1961. At and immediately after the Winter Meeting of the British Grassland Society, Dr Castle and I V Hunt discussed the possibility of forming a Regional Grassland Society in the West of Scotland".* Malcolm was Society Treasurer from that time until his retirement in 1983. Throughout the whole history of the Society, he was conspicuous as one of the most regular and enthusiastic supporters of meetings and farm walks. There are few farmers in the south west, Scotland, UK and even further afield who have not, in some measure, benefited from the research and promotional work carried out by Malcolm. Appreciations by David Reid and Michael Milligan, both fellow Life Members of the Society, appear in this issue of the Journal. A suitable memorial in the form of travel scholarships is being planned by the SWSGS. Another long standing and faithful supporter of the Society - Ronnie Alexander - also died in 1996.

Events commemorating the 50th Anniversary of the British Grassland Society - its summer and winter meetings - are reported in addition to records of meetings, farm walks and competitions held by the Central and South West Scotland Societies. The President of the BGS, commercial colleagues and the Secretary of the Manx Grassland Society have also written short contributions.

The two Societies and Editor wish to thank all contributors, speakers, sponsors and advertisers for their willing support of this Journal and promotion of grassland in Central and South West Scotland. The Editor is very much indebted to SAC Rural Business Unit staff, Lorraine Reid and Linda O'Neil, for their very considerable work in typing and layout of this Journal, and to Printers, Walker & Connell Ltd for its production.

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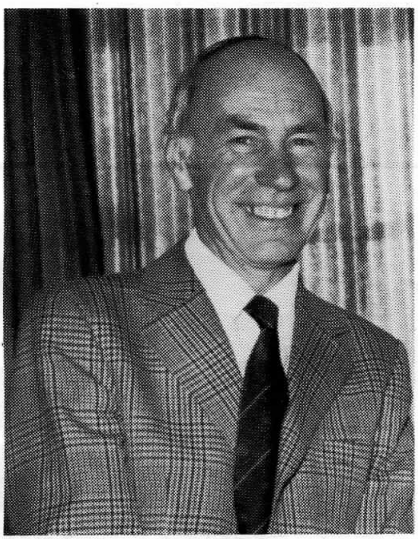

MALCOLM CASTLE - A FARMER'S APPRECIATION

J M L Milligan, Culvennan, Castle Douglas

In October, we as farmers lost a friend with the death of Malcolm Castle. Malcolm was a grass and silage man and in every respect we knew him as an enthusiast.

I had known Malcolm for 25 years and valued him as a friend and advisor. He did so much to advance the cause of grass, and his work with silage was the forerunner of the vast improvements that have been made in this field. He always believed in the potential of grass and silage, and gave so much of his time to develop this belief. He was a founder member of this grassland society, and he helped to develop it to its present position. Above all, it was his enthusiasm that has left its mark on the field of grass farming.

We will all miss him and his cheerful appearance at our meetings. There are not many people like Malcolm about, and his shoes will not be easily filled.

DR MALCOLM E CASTLE
1923-1996

It is with deep regret that the Society reports the death of Malcolm Castle on 22 October 1996. Malcolm was a founder member of the South West Scotland Grassland Society and its Treasurer for 21 years from 1962 to 1983.

Malcolm was born in Yorkshire in 1923, graduated BSc (Agriculture) from the University of Leeds in 1944. He then obtained The National Diploma in Agriculture in 1945 and the National Diploma in Dairying in 1946. His first appointment was with the West Riding of Yorkshire War Agricultural Executive Committee in February 1945, continuing through its transition to NAAS, Ministry of Agriculture in September 1946, before leaving Yorkshire in March 1947. From 1947 to 1952, Malcolm was on the staff of the Department of Dairy Husbandry at the National Institute for Research in Dairying, Shinfield near Reading, conducting experiments on fodder crops, such as kale, maize and fodder beet. Here he began research on the feeding of dairy cows which he pursued for the rest of his working life. He also studied the behaviour of dairy cows both at grazing and indoors, and took part in pioneering work on controlled grazing. Much of this work at NIRD was the basis of a thesis entitled *The evaluation of leys using dairy cows, with special reference to the use of simple seeds mixtures, controlled grazing and manuring*, which he submitted to the University of Reading for the degree of PhD in 1951. From 1952 to 1955, Malcolm was a lecturer in the Animal Husbandry Department of Liverpool University, where he met his wife Betty, a veterinary student there.

In November 1955, Malcolm was appointed Head of the Grass and Dairy Husbandry Department, Hannah Dairy Research Institute, Ayr, in succession to Professor William Holmes. At that time this department was responsible for running the Institute's farm and investigating methods for the production of milk mainly from home-grown feedingstuffs, particularly grasses and legumes, with minimum use of purchased feeds. Malcolm's work included grazing experiments, which demonstrated the importance of increasing stocking rate in achieving high outputs of milk per hectare, and the relatively poor response to feeding concentrates to cows grazing high-quality grass. His studies on the conservation of grass showed the importance of producing high-digestibility silage with a minimum loss. Expansion of these feeding studies on dairy cows was facilitated by new buildings planned by Malcolm and completed in 1964. The new premises provided the facilities for conducting accurately controlled feeding experiments using up to 64 milking cows.

Throughout his career, Malcolm was renowned for the enthusiasm with which he communicated his research findings to fellow scientists and farmers, both during visits to the Institute's farm and informal meetings, and he was a gifted and amusing speaker. He was particularly aware of the importance of applying research results in practice on the Institute's farm, and of conveying these results to grassland farmers at an early date so that they could evaluate them on their farms. With this speedy transfer of research findings in mind, he was one of a group of enthusiasts, including another BGS President, the late I V Hunt, which was instrumental in founding the South West Scotland Grassland Society in 1962. Malcolm was a keen supporter of the Society for the rest of his life and was its Treasurer from 1962 to 1983.

In 1966, Malcolm was awarded a Stapledon Memorial Trust Fellowship to make a 5-month visit to New Zealand where he worked mainly at Ruakura Animal Research Station. He was also able to visit other research institutes and farms in New Zealand and later in Australia. Much of the information he collected on this tour was profitably applied to his work at the Hannah Institute on his return. The Department of Grass and Dairy Husbandry was amalgamated into a new Department of Applied Studies in a reorganisation in 1971, when the Institute was renamed the Hannah Research Institute. Malcolm and his fellow scientists who made up the earlier department were transferred to the Department of Animal Nutrition and Production in a further reorganisation in 1981. He continued his work on the production of high-quality silage from grassland and the use of such silage in low-cost systems of milk production throughout these changes and right up to his retirement in October 1983.

One of Malcolm's greatest gifts was his ability to produce clear and precise written reports of the results of his experiments, and to publish these reports with the minimum delay after completing the experimental work. His numerous papers can be found in many journals including *Grass and Forage Science, Journal of Agricultural Science* and *Animal Production*, from the late 1940s until after his retirement. In addition, he published in association with Paul Watkins the textbook *Modern Milk Production* in 1979. This book became, and remains, a standard text for agriculture students throughout the United Kingdom and abroad.

Of the awards and honours Malcolm received, receipt of the Stapledon Memorial Trust Fellowship in 1966 has already been mentioned. He was awarded the MIBiol in 1972, and was honoured with the 23rd Research Award by the Association of Fish Meal Manufacturers in 1980, the latter emanated from his studies on the feeding of fish meal as a supplement to dairy cows receiving high-quality silage. He was for a time a Governor of the Barony

Agricultural College, near Dumfries. In 1983 he was presented with the BGS Award in recognition of his major contribution to grassland science and practice. The South West Scotland Grassland Society also recognised his work on grassland and his services to the SWSGS by making him an Honorary Vice-President and Life Member in 1984.

His interests were not confined to his professional life. Malcolm was a devoted family man, taking great pride in his daughter and grandchildren. All his life he was an intrepid bird watcher with considerably more than an amateur's knowledge of ornithology. He organised and conducted several surveys of the population of rooks in Ayrshire for the British Trust for Ornithology. On the fields at their home in Ayrshire, Malcolm and his wife Betty bred and reared pedigree Belted Galloway cattle. They also kept and showed Jack Russell terriers and pedigree cats. Daughter Jennifer and son-in-law David received much help at their kennels and cattery from Malcolm during his retirement. Here and at his home, he demonstrated his skills as a handyman. Despite all these interests, Malcolm found time to be active in local politics and to play for several local curling clubs. Altogether, he spent a busy and all too short retirement, during which he continued to attend meetings of the South West Scotland Grassland Society and of the British Grassland Society. He took particular pleasure in attending the 50th Anniversary Winter Meeting of the BGS in December 1995 less than a year before his death, when he joined several other former Presidents in celebrating this landmark in the history of the Society. Malcolm will be greatly missed by colleagues and friends for his cheerful and infectious zeal for his work and for life in general.

Dr David Reid

(From an Appreciation submitted to the BGS Journal, Grass and Forage Science, published by Blackwell Science Ltd, Oxford, UK)

SWSGS SPRING FARM VISIT IN DUMFRIES

A visit to Tibbers and Holestane, Buccleuch Estates Ltd, Thornhill on 11 May 1995 by kind invitation, His Grace the Duke of Buccleuch and Alan Stannett

G E D Tiley

The South West Society was privileged with a visit to the in-hand farms on the Queensberry Estate at Thornhill, owned by the Duke of Buccleuch. This is one of four Estates owned by the Duke of Buccleuch, the other three being in Selkirk, Langholm and Northamptonshire. The Queensbury Estate comprises some 45,000 hectares, including 4,000 hectares of woodland and 1,200 hectares farmed in-hand, the rest being tenanted. Two-thirds of the in-hand land is grass, with 300 hectares of crops. Stocking at the time of the visit was 1500 breeding ewes, 300 suckler cows in two herds, 400 Holstein Friesian dairy cows in two herds, and 600 pigs.

Tibbers Farm

The main interest at Tibbers was the brand new dairy unit built in 1994 on a greenfield site, following a decision to expand the dairy enterprise rather than the beef or sheep enterprises. Capital had become available from the sale of land in England, augmented with a bank loan budgeted for 10 years. Of the total £1.2 million invested, £650,000 was required to purchase quota (1.6 million litres), £400,000 for the new buildings and silage pits, and £150,000 for the cows. Current milk prices would reduce the timespan of the bank loan.

The building had been built to a high standard of workmanship to blend in with the environment and the existing sandstone steading. There were 192 cubicles with Dunlop rubber mats, which extended in a roll the whole length of the building. Near the back of the cubicles a raised metal strip had been fitted as a heel to hold the sawdust and keep the cows' tails in, thus effectively extending the length of the cubicle and keeping the cows clean.

The parlour was of triangular design, with a possible throughput of over 150 cows per hour with two men, should the need arise. The Westfalia parlour featured special manger gates to speed the passage of the cows through the parlour. The stalling and gating equipment in the shed was imported from Brouwers in the Netherlands. Water was self-fed into the storage tank in the roof of the shed from an artesian borehole. Pollock scrapers moved the slurry into a slatted storage channel, which could be emptied periodically using pumps on white meter electricity. The tower was agitated for one hour every night.

Milking was three times a day: 0500, 1300 and 2000. Morning and midday milking and unit management performed by one shift, and the evening milking and stock check by a back- or night-shift. At milking, each cow's number was entered and the cluster attached. An initial fluctuation of vacuum, controlled automatically by the pulsator, stimulated milk let-down. All milk was sold to Nestlé. Current moc was £1,422/cow.

The outside silage pits were designed to permit later roofing if required. A smaller third pit stored maize silage, which comprised 25% of the forage diet. Maize was first grown in 1992 and was now grown under degradable plastic. All the dung and slurry from the livestock sheds could now be cleaned out in spring onto the maize area. At the time of the visit, the 1995 crop had been affected by a late frost, but soon recovered.

A bull beef unit on slats in adapted old sandstone buildings was also seen at Tibbers. The bulls were from both dairy herds, and also from the spring and autumn suckler herds, where oestrus synchronisation and AI had achieved a compact calving pattern. The silage was ferried into these buildings by a three-wheeled truck, with concentrates added on top of the forage. This long-standing system and old buildings contrasted with the adjacent modern dairy. Plans were being examined at the time of the visit to build straw-bedded accommodation to house the finishing cattle, and convert the slatted accommodation into potato stores. Through the Buccleuch Farmers marketing group, it was hoped to develop a market in London for high quality suckler beef.

Holestane Farm

After lunch at Drumlanrig Castle, the visit continued at the nearby unit at Holestane. The steading buildings here were also traditional, dating back to the 19th Century. The Buccleuch family had inherited the Queensberry Estate on the death of the last Duke of Queensberry, after a century of neglect. Most of the farms on the estate had been entirely re-built during the period 1840-1880, with the architect Walter Newall being responsible for many of the farmhouse and steading designs.

Holestane had always been a dairy, originally in byres. The spacious buildings had good access, together with grain storage. An old covered midden had been converted to cubicles. During the modernisation of Holestane dairy in 1990, a Westfalia Trigon parlour, identical to the one now at Tibbers, had replaced the old rotary parlour. During this period the steading was also modernised to meet present-day pollution regulations, with much of the slurry now spread by low-rate irrigation. This, in the initial stages, had been prone to blocking by

sawdust and fibres. To prevent this, a stainless steel screen had been fitted to ensure that only pure liquid entered the mobile irrigators, which were capable of covering a large area. One of the old sandstone livestock buildings had been converted into excellent calf-rearing accommodation by dividing it into four rooms, allowing regular cleaning and "resting" to take place. Ventilation tunnels had also been installed to improve the air quality. The calves were kept in groups of 6, with milk dispensed by teats in Collins Calf-mate system. They were fed twice daily, which ensured that the calves were looked at regularly.

The cows at both farms were set stocked at 5 cows per hectare, although this often had to be modified during drought years. Early dressings with nitrogen began in March, and were later followed at three-weekly intervals with dressings of 25.5.5 fertiliser. In a good growing season total applications could approach 300-350 kg N per hectare. The visit ended at the pig unit, which produced 1200 finished pigs per annum. The shed was originally built to house 500 ewes, which it still did between December and April, but was now fully utilised throughout the year by passing through three batches of pigs. These were liberally bedded with straw and fed through ad-lib hoppers, an extremely simple system.

The Society is deeply grateful to His Grace the Duke of Buccleuch for the opportunity of visiting the farm units, and to Alan Stannett and Lisa Coward for their descriptions of the enterprises seen.

SWSGS GRASSLAND ENVIRONMENTAL COMPETITION

Sponsored by **Dairy Forum**, the environmental competition was run again in 1996. Results were announced at the 1997 competition night and will be reported in the next issue of the Journal.

The 1997 Environmental competition will be run this year on the same lines as previously, but with a new sponsor. The South West Society wishes to thank **Dairy Forum** for their support of this Competition from its original inception and also for donating the **Forum Environmental Trophy** presented each year to the first prize-winner.

THE BGS SUMMER MEETING
Shropshire, July 1995

The Late M E Castle and J Marshall,
South West Scotland Grassland Society

Shropshire was an ideal county in which to host the Summer Meeting for the 50th Anniversary year of the British Grassland Society. The County contains a wide variety of farming types on soils ranging from fertile areas producing sugar beet and potatoes to poor hill land which is classified as a Less Favoured Area. The greater proportion of the County is under grass, and the ten farms which were visited gave the 210 delegates a superb picture of the excellent stock utilising a range of quality grassland.

Drought and Irrigation

Shropshire was clearly being affected by the prolonged drought, and it was most appropriate that the first farm visited used irrigation for grassland, cereals, sugar beet and even maize. The Milner family of Woodside Farm, Shifnal had almost 200 hectares of light stony soil which was particularly prone to drought, and have installed a 72 m deep borehole to feed a 150 mm pipeline across their land. The amount of water applied was calculated from the "Irriguide" supplied by ADAS. The total cost of the irrigation was high, and a major item of farm expenditure. It is now difficult to obtain a licence to extract water. The dairy herd of 115 cows produced an average yield of 6,800 litres at a stocking rate of 2.6 livestock units/hectare, with animals calving all-year round. Because of the irrigation, there was an uninterrupted supply of leafy grass throughout the grazing season with no buffer feeding. However, the major justification for the irrigation system was the effect on the yield of sugar beet, which covered approximately one quarter of the farm area. On an all-grass farm, the economics of irrigation could have been rather different.

Open-cast Coal

The next visit was to Lydebrook farm, on the outskirts of Telford and owned by Sir Steve Roberts, an ex-Chairman of the MMB, but now run by his sons Jim and Richard. This new town is still expanding, with many new roads and new houses near to the farm which had 50% of its total area on reclaimed coal sites! The farm extended to 950 hectares, but each year the area and boundaries changed as land was mined and then reclaimed. The family thrived on the challenges of coal, new roads, new housing estates, dogs and vandals. The system was described as flexible, and this statement was illustrated by a set of farm buildings which were being dismantled and erected elsewhere on the farm!

In spite of all these problems, the average milk yield from 302 cows was 7,563 litres, with a yield from forage of 2,480 litres/cow. Approximately 150 beef cattle were reared per year, plus 1,250 ewes and 1,000 bought-in lambs.

When an area of open-cast coal was filled and the soil replaced, the Roberts family acted as agents for the Ministry of Agriculture, and managed the land. This involved reseeding, grazing, drainage and the application of farmyard manure. Docks were a major problem, but were tackled by spraying twice per year with a suitable weedkiller. In due course, hedges and small plantations were replaced, plus a system of ditches. Few farmers would care to tackle the problems faced each and every day by the Roberts family, who were thriving and smiling at each new challenge.

White Clover

In marked contrast, the next farm illustrated the value of white clover leys for the dairy herd, and its integration with sheep and arable cropping. John and Chris Downes at Longnor, Shrewsbury farmed 228 hectares and were highly enthusiastic about the value of grass and white clover leys. Indeed, the farm was one of a group of five farms in the UK involved in a white clover project organised by the Scottish Agricultural College and the Milk Marketing Board. John Bax from SAC Crichton Royal Farm explained the project, and demonstrated some excellent white clover swards. A typical seeds mixture contained 25.5 kg perennial ryegrass, 5 kg red fescue, and 1.5 kg S184 white clover per hectare, and the clover content was increased by tight grazing with sheep in the winter period. A regular system of liming was used, and care was taken to cut the clover swards fairly early to avoid shading out the clover. The herd of 110 black and white cows were most impressive in size and quality, and were set stocked and tightly grazed to encourage the clover. A little nitrogen fertiliser (57 kg N ha^{-1}) was applied for an early bite, and a 15:15:20 complete fertiliser was used on the silage swards.

The use of fertiliser nitrogen had decreased by over 50% in recent years, yet the output on the low input grass/clover system was most impressive. The average yield of milk was 5,625 litres/cow with 3,378 litres from forage and a concentrate input of 0.20 kg/litre, and a margin over feed and fertiliser of almost £2,400/ha. When the clover leys were ploughed for the wheat crop, there was a residual benefit from the clover nitrogen, and hence only 34 kg N ha^{-1} was applied as fertiliser. This farm clearly showed yet another aspect of "sustainable agriculture", with productive and healthy crops and livestock on a low input system and a balanced rotation of grass/clover leys, cereals, root crops and maize.

Grass in an ESA

The next day started with a thick mist which added an authentic backcloth to Upper House farm, (Nigel and Sue Williams), Hopton Castle, Craven Arms near the Welsh border. The farm has been in the Clum Valley ESA since it was first established in 1988. The ESA scheme is of course voluntary, and its financial incentives encouraged the conservation and restoration of hedges and traditional buildings. The whole farm was involved so that the effects of changes in management could be seen across the whole area. The use of fertiliser was restricted, with rules about mowing grass and field cultivations, so that a grant of £30/ha plus 80% of agreed restoration costs could be received. The 217 hectare farm was stocked with 540 ewes, either pure-bred Cluns or Clun x Bluefaced Leicester, and 80 suckler cows including 20-30 superb pedigree South Devon animals. Grass was the major crop, with some cereals and 2 hectares of fodder beet. All the silage was conserved in big round bales at a dry stage to avoid any trace of effluent, as a stream flowed through the farmyard at the bottom of the farm. The avoidance of pollution, and the maintenance and improvement of the landscape were of considerable importance in every aspect of the management of the farm. The whole valley was a delight to visit, and the Williams' farm showed that economic farming could be allied successfully to a sympathetic treatment of the countryside and buildings.

History and No Silage

Walcot farm, (John and Robert Evans) at Lydbury North, Craven Arms provided a glimpse of history, and was also unique in that no grassland conservation crops were made. The farm of 296 hectares was originally the home farm of the Walcot Estate with its close links with Clive of India. Then, in the pre-war period, the Hall was the home of the Emperor of Ethiopia and his family after the invasion of their country. Finally, the Hall was the secret nerve centre for the planning of the invasion of Europe on D-Day 1944.

Half of the farm area was cropped with cereals, potatoes and forage maize whilst the remaining parkland consisted of old permanent pasture stocked with suckler cows plus ewes in the winter. The 300 Angus-Friesian cows tended to be of small size and were mated to Belgian Blue bulls. One group calved in spring and another group in autumn, and were all block grazed at pasture. The parkland contained many mature trees ideal for shade, and which the Evans family had no wish to remove. The calves were reared indoors on crimped grain, maize silage and a little forage rye, and sold as stores at approximately 350 kg liveweight. Grass silage was not made because of the proximity of a river, and the risk of flash flooding. Indeed, the whole system of cropping and livestock production was geared to the conservation of the scenery and

environment, although the farm was not in an ESA and was not classified as LFA. Our host farmers in Shropshire certainly paid attention to the inherent beauty of their county and its environment.

Success in the Hills

The visit to Kinnerton farm (Jesse Wood), at Rattlinghope in the Shropshire Hills ESA was truly memorable. Jesse came to the 60 hectare hill farm in 1962, and now owns 660 hectares, virtually all within a ring fence. This was supplemented with 280 hectares of summer grass keep enabling 4,300 ewes and 530 suckler cows to be kept. All the land was classed as LFA lying between 250 and 450 m above sea level and was under grass on a thin soil with a cold and windy climate. The suckler cows, mainly Limousin x Friesian, calved January-April and had either Belgian Blue or Limousin calves at foot. The groups of matched, even, and contented cattle were grazing top-quality swards and were a pleasure to see. Most of the calves were sold in the autumn at local markets, and top prices were achieved by selling groups of animals matched for type, sex and weight. The total gross margin per cow was £498 less £67 for forage and summer keep. The sheep flock of Welsh Mules lambed outdoors to Texel and Rouge de la Maine tups and were as impressive as the cattle. Nearly all the lambs were finished off the grass, and were marketed at the local markets. To keep the lambs clean, the silage and hay aftermaths received no fertiliser, but only farmyard manure. The entire farming system met the criteria for the extensification premiums, and was outstanding in the scale of operation of simple grassland and livestock systems.

Milk on a Family Farm

In contrast, the next visit was to a family dairy farm (Boundary farm) of 34 hectares tenanted by the Savil family at Moreton Wood, Whitchurch. This was an extremely tidy farm with 65-70 black & white cattle and no youngstock. The farm was all in grass of different ages, including some 30 year old leys which looked immaculate. There was little reseeding, and set stocking was the normal system of grazing. The approach to fertiliser, grazing, feeding, conservation and all aspects of the farm was simple and uncomplicated; "Savils Simple System" in operation was a pleasure to see, and did produce results. The milk yield was 5,925 litres/cow using 0.20 kg concentrates/litre, with almost 4,000 litres milk from forage. Breeding was by AI using Belgian Blue bulls, and calving was between October and April. Twelve herd replacements were bought each year. A dirty water system with a 18,000 litre tank, pump and sprinkler had been installed recently for a total of £1,000; a typical example of good cash control and up-to-date systems of management on an outstanding family dairy farm.

Farmhouse Cheese-Making

Hawkstone Abbey Farm at Weston-under Redcastle was another family enterprise where the milk from 460 black & white cows was made into Cheshire and Double Gloucester cheeses. The leys, many 30 years old, were managed intensively with set stocking as the main system of grazing. Milking was done in a brand new 32-stall rotary parlour complete with automatic milk recording and concentrate feeding, and an output of 150 cows per hour. The unpasteurised milk was used in a traditional cheesemaking system which had started in 1953. The Appleby family control their own distribution and marketing of their cheeses, which are sold in high-class shops in the UK and abroad. The hand-made cheeses were made under the most strict conditions to ensure a consistent product, and 98% of the cheese was classed as top quality. Members had the opportunity to purchase the various cheese which were truly of superb quality. When seeing the entire process of milk production from grass, and then the making of quality cheese, one wonders why this process is not conducted on many more farms. Without any doubt, the Applebys were running a most successful and profitable business.

Milk from Gravel

Colemere Woods Farm near Ellesmere (120 ha) situated on North Shropshire gravel, was showing signs of the prolonged drought. However, maize which covered 36 hectares was in good order, and normally provided 70% of the winter forage dry matter. Maize was now widely grown in Shropshire and is an important source of feed for cattle. The dairy herd of 220 cows which all calved in September and October, were offered a flat rate of concentrates and were all dry by August. Grazing was on a set stocking system, and no youngstock were kept. The milk yield was 5,876 litres per cow with 3,805 litres from forage at a stocking rate of 2.2 livestock units/hectare. Yet again we learnt that Belgian Blue bulls were the only breed used so that quality calves, sold at about 2 weeks of age, could provide income valued at £40,000/year. The rainfall from April to September averaged only 228 mm (9 inches), yet the crops and farming system had been planned to provide cheap forage for milk production. James Robertson, who is a first generation farmer, had a simple farming policy. Make no capital improvements, produce cheaper milk, market milk efficiently and go on more holidays!

Organic for Forty-Six Years

The final farm visit of the tour was to Lea Hall farm, near Shrewsbury which is farmed by Richard Mayall and his daughter Ginny. This well-known farm was visited by the South West Scotland Grassland Society many years ago, and it was fascinating to see a productive and profitable unit which has been organic for almost half a century. The farm extends to 317 hectares, and produces

organic flour, oats and potatoes with clover-based leys for milk production. Organic milk was produced for many years, but was abandoned due to insufficient price premiums. The Pimhill herd of 140 pedigree Holsteins gave 8,200 litres/cow last year, with three times per day milking and showed a margin over purchased feed of £1,430 per cow. The grassland was all managed without any inorganic fertiliser, but received slurry, and composted farmyard manure. Cubicle divisions were being removed so that the large Holsteins could be bedded in comfort in loose yards and produce manure which is so vital for maintaining soil fertility. Richard Mayall has always been keen to improve the landscape, and has planted many shelterbelts, new hedgerows with a tree every 12 m, and has maintained his old farm buildings including an ancient dove-cote. Pimhill is the name of a local wooded escarpment, once the site of a Roman army camp.

Shropshire, we were told, has no cathedral city, no university and no research stations but gave all delegates a most enjoyable and worthwhile time. The beauty of the county was matched by the excellence and diversity of the farming, and the hospitality of the farmers. Well done Shropshire, and may we soon return again!

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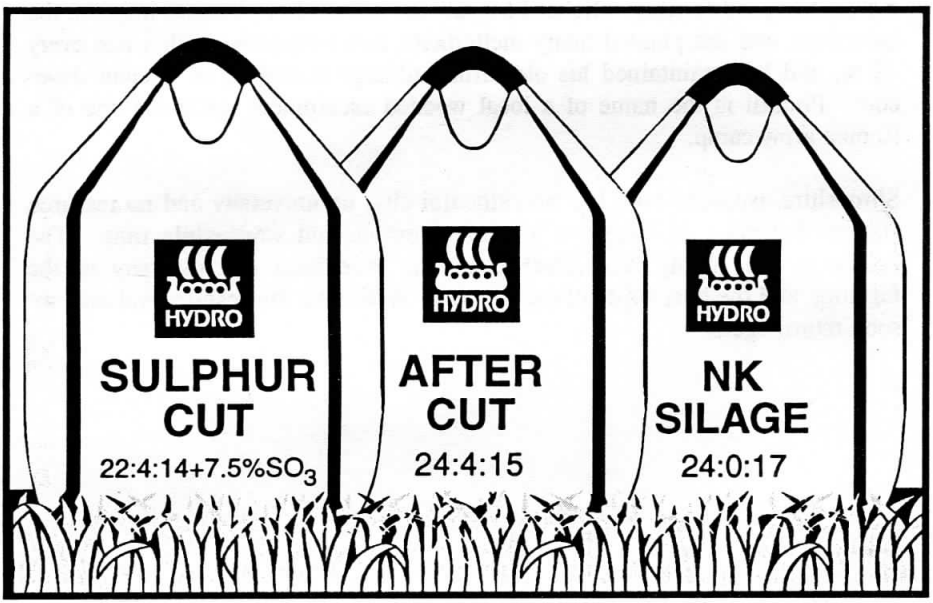

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MEET THE CHAIRMAN

Archie Borland, Chairman, South West Scotland Grassland Society
Altonhill, Kilmarnock

Archie was born in Onthank, Kilmarnock but moved to neighbouring Altonhill in 1952 when Onthank was taken over for development. On leaving school, he attended a 6-month farmers' course at the West of Scotland Agricultural College, Blythswood Square, Glasgow and began farming on his own at the age of 20. He has always valued close links with the College (SAC), particularly the Ayrshire Farmers' Evening Class from the time it started in 1971. In addition to being current Chairman of the South West Scotland Grassland Society, Archie was Chairman of the Scottish Milk Records Association (1979-1980) and a former Chairman of the British Rotbunt Cattle Breed Society.

He has recently been active on behalf of Scottish Pride shareholders Association. Altonhill is now 108 ha, having lost 36 ha to development. 48 ha for silage, 40 ha for grazing and 20 ha for spring barley. Damaged or poached swards are regenerated in the spring by harrowing, overseeding and rolling, rather than reseeding. The rotary parlour and cubicle complex were installed in 1970 and the home-mix plant in 1966 when the moist grain store was built. A new slurry store, built in 1994 to comply with regulations, holds slurry right through the winter. Altonhill, selected to represent Scotland in the Norsk-Hydro (now Hydro-Agri UK) Grassland Farmer of the Year competition, was placed runner-up in 1996.

Outside interests include curling and bowling, but Archie's prime interest is in the agricultural scene. Son Allan is a partner in the business. One daughter is a farmer's wife in Sorn, the youngest has just obtained a position with United Distillers.

SWSGS - EVENING FARM VISITS - SUMMER 1995

G E D Tiley

Dumfries - R Broatch, Thwaite, Ruthwell - 27 July

Society members visiting Thwaite were privileged to see some of the finest summer growths of grass in the whole of SW Scotland during the long hot summer of 1995. The low lying strip of the Solway coast makes for ideal flat fields with high moisture retention in a dry time. Conversely, the grass is difficult to manage during wet spells and the grazing season is short - mid-May to the end of August. Neither maize nor fodder beet can be grown. In the winter, the drains are constantly flowing, but drainage is slow. Ochre is a problem and the drains need flushing out every 3 years. The ditches are cleared annually and the spoil removed.

The farm has been in the Broatch family for 4 generations, and when taken over 24 years ago was a typical Dumfries holding with a byre, bullocks and sheep. There were now 180 cows, 150 bulling heifers on 96 hectares, with an additional 24 ha summer grazing for dry stock. Apart from 1 field of 6 ha spring barley, the farm was all-grass, in 12 ha blocks. Silage was cut on 22 May, 2 July and late August (32 ha), with aftermaths for cow grazing which boosted milk yields. A 12 year old sward, sown to Talbot, Springfield and Meltra perennial ryegrass was seen. Also a 2-year old sow out with Alice white clover and Magella tetraploid ryegrass. Silage was made by contractor and yielded 15t ha $^{-1}$. Ecosyl additive was used. In 1995 DM was low (21%), but quality high - 77D, 12.3 ME. A new silage pit had recently been added of 1200 t capacity, including a guard rail; the two older pits were each of 750t capacity. Slurry and also dirty water and effluent were stored in a new tower, surrounded by a screen of 20 m Scots Pines. Spreading was by an umbilical system, pumped through pipelines which required correct operation - thorough mixing and flush out after spreading, but it allowed full control of disposal in winter.

The buildings included a new shed with 43 cubicles on one side, an older wooden shed and the original byre converted to cubicles. Mats were used for the cubicles and the wooden shed was half-bedded for calving. The calves were fed home mix and silage later. The fields were grazed by wintering sheep until mid-January, after which they suffered damage from migratory geese. In spite of this, the swards were lush and green and produced very good grass if properly managed.

The Society is most grateful to the Broatch family for their hospitality, and for arranging the visit to the green fields of Thwaite.

Kirkcudbright - G & R Sommerville, North Corbelly and Ardwall Mains, New Abbey - 1 August

The neighbouring farms of North Corbelly and Ardwall Mains, farmed by father and son as one unit, were the subject of the Kirkcudbright evening visit.

Ardwall Mains

Bought 9 years ago, Ardwall was used for all the youngstock, including calf rearing and bull beef. All the male calves go onto slats at 7 months and are sold live to Carlisle market at 12 months (Simmental) or 14 months (black and whites). The bulls were reared in batches as they were difficult to draw out from bedded courts. Heifers up to 2 years old were housed in the cubicle end of the shed. The silage pit was a hole in the ground which could be filled quickly and contained enough silage for all the resident stock, together with big bales. 80 hectares were cut twice at both Ardwall and North Corbelly, working in partnership with neighbouring Inglestoneford Farm, using a 2.7m mower and powered forager. Safesile inoculant was always used, even in a good year. The two fields of winter barley were surrounded by stone dykes. Remains of an ancient drove road through the farm were seen - now a repository for huge granite boulders, the land here being classed as LFA. The barley was undersown to a new reseed. Barley grain was fed twice daily to the bulls in a 16% mix (11 ME) with soya, dark grains and beet pulp, made up at a local mill.

North Corbelly

North Corbelly lies on the estuary side of the main road separating the two farms, and comprises 107 ha of rented non-LFA land carrying 130 Friesians averaging 5,800 litres. Silage was taken out by sheargrab and mixer wagon. The sheargrab contained a small tank for molasses fitted inside (see Ideas Competition, page 51). Effluent was stored in a 18,000 litre petrol tank. A new shed and extension had been built by cutting into the hillside, the loose rock being used for the farm roads. The private water supply was kept in storage tanks and fed through the milk cooler. The feeder pipes occasionally became blocked.

Dry cows and low yielders received silage only; the higher yielders were fed a concentrate mix and molasses. A magnesium mix was given *ad lib* to the dry cows. The grazing fields were affected by wintering geese leaving a mess which required harrowing. 250 sheep were also taken until March. The estuary merse, a nature reserve, was grazed May-September with permission from Scottish Natural Heritage. Robert Burns was active as an excise man in this area. The cows were involved with a private AI company trying to raise milk protein. Calves were housed in a former chicken house with ventilation (air

removed) and bedding kept dry to reduce pneumonia. The Nursette feeders were cleaned out every other day. Older calves went to an open shed.

On a pleasant summer evening, the Society enjoyed fine views over the estuary and surrounding land, and extends its thanks to the Sommerville family for their warm hospitality.

Ayrshire - A H Borland, Altonhill, Kilmarnock - 3 August

On the immediate outskirts of Kilmarnock, Altonhill has suffered a number of urban problems, such as damage to fences and gates, dog nuisance and dumped cars. A positive attitude to this has been taken in promoting school visits and local liaison. Some land had been lost recently to housing, but a further 20 hectares had been purchased at Kilmaurs. The farm now extends to 80 ha with a further 28 ha rented. 48 ha are cut twice for silage and 20 ha grown for barley. The remainder is down to long term grass. Some fields are more than 20 years old, others have not been ploughed within living memory. The soil is excellent for grass, but easily poached in wet seasons. Renovation is carried out by chain harrowing a half seed rate of grass and rolling, possibly with a preceding leatherjacket spray. Docks were effectively controlled by regular spot spraying. Up to 100 beef stock were carried and 130 Friesian-Holsteins, averaging 6,400 litres. Limousin bulls are used for the poorer end of the herd, and finished animals sold off by June.

Silage is made by contractor, with wilting and Add-F additive. The silage pit has one side angular due to a nearby gas pipeline. Side sheets are used and effluent is collected in a tank. A new slurry store holds all slurry until it is spread on the silage ground in March. The cows are housed in a 1920 shed which was economically upgraded by fitting a scraper, slats and mats. Maize gluten is fed in the parlour and a home mix twice daily with the silage. The home mix contains soya, fish, beet pulp and molasses with barley, blended in an old mixing unit with motorised blower. The rotary parlour was fitted by Westphalian engineers (as at Tibbers, see Spring Tour page 11) some 20 years ago. The calf house and other buildings were traditional.

Altonhill was runner-up in the 1994 SWSGS Silage Competition, and also in the Hydro-Agri UK Grassland Farmer Competition in 1996. The Society is most grateful to its Chairman and his family for this visit, and for their kind hospitality.

Wigtown - I C Morton, Carsenestock, Newton Stewart and B Will, Coopon Polwhilly, Newton Stewart - 10 August

The two farms used to be managed jointly by Iain Morton until 1985. Polwhilly dairy was sold to the Dutch firm, Pon, and Carsenestock purchased, including all the machinery. At the time of the visit all field operations, including silage making, on both farms were managed from Carsenestock. The dairy and cow management at Polwhilly came under Brian Will.

Carsenestock

From an original store cattle operation a 300-bull beef unit had been built up with direct sales to Carlisle market and based on wholecrop fodder. There were 80 ha of arable land which was too wet for normal grazing, including 14 ha cut for silage and 80 ha of saltings rough grazings. Willow scrub bordered the tidal flats. The soil was heavy alluvial and saturated in winter. The bulls are bought in through an agent at 6-12 months and required 3 weeks to adapt to the slats. The original old buildings had been modified with slurry collected in a lagoon. After the first month on grass silage, wholecrop silage is gradually introduced and supplemented with pot ale, draff and maize gluten. Fermented wholecrop could form a larger part of the diet than if it was urea-treated. Whey from a local yoghurt factory was also fed *ad lib*. Straw was used for bedding in one shed, the animals being shut off for daily scraping out.

The silage fields were long-established HF11 Scotsward and cut 22-25 May and late June, receiving slurry and 63 kgN ha^{-1} only. Grass growth was not early in this area. Oats were being used for wholecrop and timing for harvest was critical. A self-propelled second hand chopper with a wholecrop attachment was used. The land received slurry dressings before and after ploughing. The soil dried 'like concrete', and had to be cultivated at the exact right stage. Large cracks had developed in the top soil at the time of the visit. A slurry contracting service was operated using low ground pressure tyres and long over-the-dyke booms for year-round working.

The land at **Polwhilly** was also heavy alluvial, but had been plastic-drained. However, it was very difficult for the water to penetrate down to the drains, and the fields were under water most of the winter. 500 sheep had grazed the previous winter, though these had proved too many. Geese, which arrived in late-February, were also a problem both for the grass and the wheat crop. Thus wheat was planted close to the steading, but sometimes all day could be spent chasing the geese.

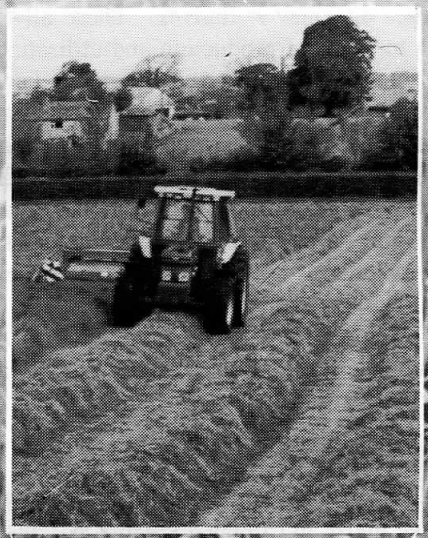
Scotsward with a little Polycrop were grown, producing bulky crops. Timothy did well. Three cuts of silage were taken from 70 ha, with a possible 4th cut in good years, if fertiliser was applied for this. Bioferm was used on all the silage as it had proved better than other alternatives. As with Carsenestock, the land was not suited for grazing. 10 ha was grown for wholecrop wheat. There were 130 Holstein cows averaging over 8,000 litres and margin over purchased feed of £1,484. The animals were part of the breeding programme of the Pon organisation. They were all imported from the Netherlands, and various bull lines were being tried. The high yielding cows spent only 6 hours at grass, as their feeding could be better controlled inside. The lower yielding cows spent longer at grass. The daily grazing was beneficial from a welfare point of view, and exercised the feet. Slurry was collected in a lagoon, which received drainage from the dairy sheds by gravity. A youngstock shed housed heifers for embryo transfer. Calves were being successfully reared all year round in Cosy Hexa Huts, from USA (Indiana). The huts could be washed and disinfected after each calf, and there were no pneumonia problems. The environment was constant, warm in winter, and placed on gravel for proper drainage. The calf stayed 6-8 weeks in the hut, before transferring to an open shed.

The Society wishes to thank Iain Morton and Brian Will for arranging this extensive visit, and for demonstrating the beef and dairy systems in some detail.

SWSGS PHOTOGRAPHIC COMPETITION

Members are invited to bring along photographs of some farming topic to the Competition Evening. These are displayed for anonymous judging by the audience. The 1995 and 1996 Photographic Competitions were both won by John Fergusson, Clune, Tarbolton, Ayrshire.

Grass Seed



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Grass Seed Mixtures

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A comprehensive range of mixtures with twin seed dressing
to promote growth and fight disease

THE BGS IN THE SERVICE OF GRASSLAND

Professor Roger J Wilkins, Institute for Grassland & Environmental Research (IGER), North Wyke, Okehampton, Devon, President of the British Grassland Society, 1995-1996

The Society completed its 50th Anniversary Year in 1995, in good heart with a wide range of activities and new initiatives. These all to fulfil the Society's objects of 'advancing methods of production and utilisation of grass and forage crops for the promotion of agriculture and the public benefit' and 'advancing education and research in grass and forage crop production and utilisation, and the publication of the results of any research'. The Society's programme is still built around the well established Winter Meeting conference, the Summer Meeting, held last year in Shropshire, the National Silage Competition, the publication of the journal: Grass and Forage Science and the magazine Grass Farmer. We are now adding new events and activities to cater for more specialist topics and to contribute more to local and regional events, in particular to facilitate the spread and discussion of new techniques and approaches. We are also continuing the policy of collaborating with other organisations, where appropriate, in joint events.

Recent Highlights

A particular success last year was the joint meeting with the Maize Growers Association on 'Forage maize in extended grazing systems', held with a packed house in Exeter. With papers from farmers and scientists in England, France, Ireland and the Netherlands, there was an in-depth discussion of the ways in which efficient production systems can be built around the two crops, maize and grass. An initiative taken by the President-Elect, Jerry Rider, led to BGS hosting and organising a series of farm discussion groups led by Mark Blackwell, on loan from the New Zealand Dairy Board for a four-month period. Local grassland societies provided the focus for groups of up to 20 farmers with a series of three meetings held at monthly intervals on a single farm to review and discuss the management of the grassland. Initial customer reaction has been very favourable. Of necessity this pilot run has been confined to one part of the country, regrettably some distance from South West and Central Scotland. We much appreciate the assistance and support provided by The Farmers Weekly, Genus, Midland Bank, the Milk Development Council and the New Zealand Dairy Board.

Regional Events

The programme for the coming year includes a wide array of both Regional and National events. BGS is continuing to pilot run a Grassland Management Competition, intended to complement the Silage Competition. It is a real challenge to devise a judging scale to fairly encompass all of the UK, but identical rules are now being used in several BGS regions, including Scotland. We hope to be able to go ahead national within the next two years.

In October BGS combines with three major sponsors of research, MAFF, MDC and MLC, to put on a series of meetings (Roadshows) to promote new research findings which are ready for implementation on farms. We are organising a series of four meetings on the theme 'Profit from Winter Feeding, Progress with Grasses and Forage for Milk, and Beef', each of which will include papers by four prominent speakers. One of this series will be held in Carlisle in October and we would welcome good participation from Scotland. If the response is good, then this roadshow approach will be repeated in other areas. We wish to encourage ideas from local societies and BGS has a fund allocated to support activities involving more than one local society (apply to BGS office), which could be appropriate for events within Scotland.

National Events

No fewer than four specialist conferences are on the stocks. In September we are to combine with Scottish Sustainable Farming to discuss 'Legumes in Sustainable Farming Systems' in Aberdeen. The grasses and legumes that we use are also the focus for the 'Seeds of Progress' conference to be held jointly with the British Society of Plant Breeders, NIAB and SAC at Nottingham in February 1997. The meeting will also include papers from farmers to help point the evaluator and the breeder towards future requirements. This will be followed by a conference on 'Quality Forage for Animals' jointly with the Royal Agricultural College at Cirencester in March. The 1996 Winter Meeting held in Malvern in November was on the theme 'Grasses and Forage for Cattle of high Genetic Merit'. The fifth meeting in the series of 2-yearly Research Conferences will be held at Seale Hayne College on 8-10 September 1997 and a conference discussing 'Grassland Management in ESAs' in Lancaster on 23-25 September 1997.

Details of all these events are available from the BGS office at Reading (Telephone 01734 318189) (and soon to be on the Internet). We hope that any local members who are keen on keeping to the forefront of grassland developments will consider joining the BGS (subscription only £30/annum). We would always appreciate your ideas on what the BGS could do for you, and your local society.

IT PAYS TO ACKNOWLEDGE THE ENERGY GAP

Peter Jefferis, Realistic Marketing, Stafford

We are continually asking more from our dairy cows, and many people have seen that by treating them right they will perform. But we must acknowledge the problems our dairy cows face. One that is now being very much talked about is the energy deficit post-calving. This spans a period of at least six weeks, and is highlighted in a comment made by a veterinary friend of mine, Neil Howie.

"A cow yielding 30 litres a day needs 2,000g of glucose a day. The most she can obtain from food and its resultant metabolism is 1,300g. The balance is drawn from tissue reserves. Glucose is the first component of milk production as supplies are drawn from the blood at the first stage of milk synthesis. Low levels of blood glucose probably cause the brain to release chemicals of stress. These chemicals have been shown to affect liver function, causing fatty liver. **PRODUCERS MUST ACKNOWLEDGE THE RISK THEY RUN BY NEGLECTING THE ENERGY GAP**".

In recent years, many American farmers have tried to address the energy problem by drenching freshly calved cows with mono propylene glycol. This has been a step in the right direction, but this single element does not go as far as we would want. Back in the 1970's Scandinavian vets and nutritionists knew of the problem and a wide study in Sweden and Finland showed that 80% of herds surveyed suffered from sub-clinical Ketosis. It was found that combining sugars from birchwood with other essential ingredients and mono propylene glycol gave excellent control of Ketosis and was shown to improve performance and, in particular, health and fertility.

It is from those experiences that PRO-90 was formulated. The product is available in meal or liquid form, and can also be included into compound feeds. The inclusion into DRYCARE makes it a unique dry cow formulation satisfying three important needs in the two weeks before calving. These are a correct mineral balance, a supply of high quality protein to promote hormone flow and PRO-90 to boost blood glucose and stimulate liver function.

(*See advert on opposite page*)

GRASSLAND - MY WAY

A Meeting of SWSGS on 19 October 1995 at the Royal Hotel, Cumnock

R Weir OBE, Townfoot, Thornhill and J Duncan, Castlehill, Maybole

*Meeting sponsored by **SCOTPHOS Ltd, Ayr***

Robbie Weir, Townfoot

Robbie Weir spoke about his extensive beef and sheep enterprise in the Nith Valley, Dumfriesshire. He had been awarded the OBE in the 1995 New Year's Honours List for services to agriculture within many organisations and agricultural societies.

There are some 1000 ha of hill within a total of 4,500 ha at Townfoot. Permanent grazings cover 1700 ha, silage 350 ha (cut twice) and 20 ha arable silage. Old grassland is ploughed up for fodder rape in the first year, with arable silage the following spring. This was undersown traditionally to long term Castlehill 4 mixture from Sinclair McGill. The mixture now sown is similar with cocksfoot to provide an early bite for the sheep. 500 kg ha^{-1} 25:5:5 fertiliser is applied to the silage crop and 310 kg ha^{-1} 25:5:5 to the grazing ground. The silage fields receive liberal slurry. A February/March application of slurry has also shown a benefit on the grazing ground. There are 560 suckler cows, mainly blue-greys, plus followers, and 4,500 sheep. All cows are in-wintered on slats and 2,500 in-bye ewes are brought in to lamb. Some of the problems of farming land at Townfoot were discussed.

John Duncan, Burton and Castlehill

At the date of the meeting, John Duncan had recently been elected Chairman of Scotmilk. He spoke about farming on the Ayrshire coast south of Ayr at Castlehill and Burton, where beef, sheep and dairying were combined. Castlehill was the farm where the famous grass seeds mixture of that name was first tried out by Sinclair McGill.

Of the total area 86 ha at Burton, 57 ha were ploughable, 9 ha permanent grass, 20 ha hill and cut woodland. The hill area consists of 50% rock outcrops and whin (gorse), the rest being timothy and natural clover, providing grazing for 35 in-calf heifers.

26 ha ryegrass and clover provided grazing for 130 cows set stocked from the end of April. This received 125 kg N ha^{-1} in mid-March and 190 kg ha^{-1} 20:10:10 monthly from May onwards. 26 ha of silage was cut late May - early June and mid-July to yield a target of 1000 tonnes. First cut received 175 kg N, 25 P, 20 K ha^{-1} as 375 kg Nitrogen and 250 kg ha^{-1} 20:10:10 during mid-March. This was repeated for the second cut. 6-8 ha were reseeded each year with a ryegrass-clover mixture after silage or winter wheat.

At Castlehill, there were 10 ha of permanent grass and 80 ha ploughable. Crops were 36 ha early potatoes, 18 ha winter wheat, 8 ha spring barley, 4 ha swedes and 15 ha silage. The silage area consisted of first year Italian ryegrass which was established in July following lifting of the early potatoes. The grass received slurry over winter, then 150 kg N, 38 kg P, 38 kg ha^{-1} in March, and also after first cut (20-24 May). In mid-July 125 kg N ha^{-1} was applied following second cut for the end of August 3rd cut. Stock consisted of 50 first year heifers for grazing, 150 housed bulls and 1050 purchased lambs.

DR DAVID REID - HONORARY LIFE MEMBER, SWSGS

David Reid was a founder member of the South West Scotland Grassland Society and Editor of this Journal, Greensward, from 1987-1995. He was formally elected Honorary Life Member and Vice-President of the SWSGS at a meeting of the Society held at the Royal Hotel, Cumnock on 19 October 1995. As well as being a recent Editor of Greensward, David has always been a keen supporter of grassland society activities from its beginnings in 1962. He had a specialist knowledge on the role and behaviour of white clover in intensively managed swards, having researched this topic for many years. David was presented with the Society's Life Member's Certificate by the Chairman, Archie Borland.

BEEF PRODUCTION FROM THE DAIRY HERD

Annual General Meeting of the CSGS on 8 November 1995 at the Newhouse Hotel

Basil Lowman, SAC Bush Estate, Edinburgh

Beef is one of 3000 foods in supermarkets. By the year 2000, the good times will end with the withdrawal of subsidies. If new members of the EU were all paid the same subsidies, then the EU would go bankrupt almost overnight.

It is more efficient to feed young cattle because less maintenance is required, eg: 350 kg steer requires 35 MJ for a liveweight gain of 0.5 kg/day; 14 MJ is required for maintenance. A large steer requires 32 MJ for maintenance alone. The higher the growth rate the more fat is formed. Big fast growing cattle are not more efficient.

	LWG kg/day	Age	Food Conversion Rates Food/kg LWG
Small	0.9	14.4	5.7
Medium	16.6	6.20	6.2
Large	1.1	18.50	6.6

Beef From Grass

Grass is 60% of total intake; 31% is grazed and 29% silage.

Buffer feeding of dry cows (for efficient UME). Buffer grazing not feeding. Silage is expensive, requiring 275 kg Nha^{-1}. Variable costs £161/ha for 2 cuts, equivalent to £4.73 $tonne^{-1}$.

Fixed costs per upland suckler cow

	£
Labour	51
Machinery	76
Rates	18
General	21
Rent	69
Total	236

To maintain good quality grazing (ie: grass heights), buy treated straw.

Grass Heights (cm)	4	8	12
Cows/acre	1.75	1.3	0.75
Calf Daily lwg	0.85	1.0	1.07
Wt Change/cow	-0.8	+0.5	+0.2

The effect of summer grass availability on calf weight is small, but larger on cow weight. This can have a knock-on effect on milk production and later fertility, ie: Target is 8-10 cm.

On shorter grass a cow's speed of biting is 3600 bites/hour. A maximum working day is around 10 hours, and if the cow is still hungry the result is reduced milk yields.

Profitability

The lowest grass height at which a cow can be maintained for maximum utilisation is 4-6 cm for dry cows, 6-8 cm for store cattle, and 8-10 cm for cows, calves and finishing cattle. In addition to the seasonal growth curve of grass we are all familiar with, there can be a variation between years. Average year 10.5t/ha of DM. A poor year 8t/ha. A good year 14t/ha. A flexible system is therefore required; varying the number of animals and using supplementary feeds, concentrates, straw, etc. The target is 1t of beef per acre. Use an electric fence to control grass and excess strips can be cut and grazed. Apply 12 kgN per 100 kg weight over the summer, eg: 5 dressings:

March 25th, May 20th, June 20th, July 20th, August 15th.

Two months into the pregnancy, the cow is fully committed. The cow will use its own body reserves if feed is short.

BEEF PRODUCTION AND MARKETING

AGM of the CSGS on 8 November 1995

I Galloway, Scotbeef Meat Packers,
Bridge of Allan, Stirling

An association of 56 retail butchers in Glasgow had been formed in 1922, particularly in industrial areas; Springburn Locomotive Works, Partick Shipbuilding. There had been a Buenos Aires meat plant in 1890. 1959-1963 saw the start of the 5-day week which brought about changes. An abattoir was built in 1959 and for export as well as to supply our own shops. Husbands became involved with shopping. 700 cows per week were processed and corned beef was canned. Fewer tins were required nowadays.

Canned work for Marks & Spencer began in 1963, and other supermarkets who have a very good distribution of chilled foods. France can contact British distribution and get delivery the next day. This doesn't happen within France, where meat has to be delivered to a store. Marks & Spencer were the first major distribution; now all 5 chains have distribution systems enabling all shops to handle meat. Choice has greatly increased. Steaks were uncommon in the old days; chicken in 1956 was not sold by butchers but in fishmongers and poulterers. In the days of heavy industry, manual workers required hot meals. Nowadays less protein is required, people eat for pleasure and a high quality is now demanded. The trend away from individual butcher shops towards supermarkets will continue.

Bull beef is not wanted. Germany buys Scottish heifer meat. Vegetarianism is a problem with increased propaganda in schools. Welfare of animals is important for farmings' image and pictures of animals being hit in markets did a great deal of damage to the image. Education of the public and farming image are important. Tidy steadings and beasts in a pleasant environment will improve the farming image. The Scottish reputation for quality beef must continue to be enhanced with young heifers exported to Northern Italy. By ensuring continued quality, Scottish Beef can justify the premium it received over continental beef. There are too many slaughterhouses and, to survive, the quality must be good. At one time, big cattle were going into intervention at a rate of 250t every two weeks.

With supermarkets such as Sainsburys and Marks & Spencer, it is the housewife who decides whether Scottish Beef warrants a premium by buying more. Today, the most desired type of carcass is that of an Aberdeen Angus cross

Limousin and Charolais. Milk is another commodity where a name has proved a useful selling point, eg: Ayrshire milk. In Europe, 95% of cows are Simmental. Of the dairy herd in Britain, Friesians are preferred and there are opportunities to export with hindquarters in particular to France.

New Zealand lamb is imported in Spring. Spring lamb (February-May) obtains the highest price but is of poor eating quality because of weather. When home produced lamb is available, it does not need to be promoted because the consumer is used to New Zealand lamb, ie: starting with New Zealand lamb followed by home produced lamb results in steady lamb consumption.

CENTRAL SCOTLAND GRASSLAND SOCIETY

Farm Visits in 1995

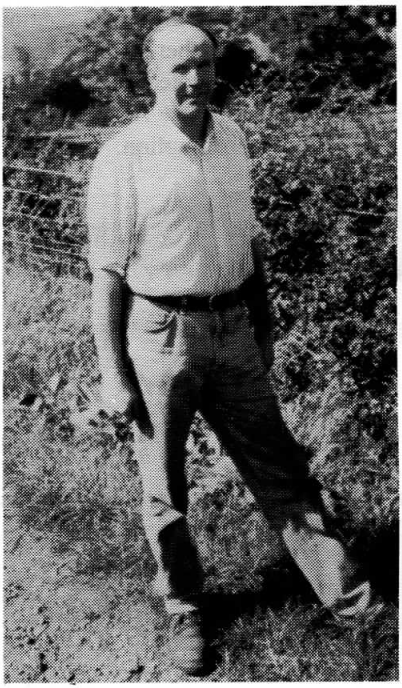
23 May - **Coopon Carse** (Jan Vos) and **Carsewalloch** (G M Campbell), Palnure, Newton Stewart.
The Spring visits were to the well-known dairy unit at Coopon Carse and, in the afternoon, to the Beef/Sheep enterprise at Carsewalloch.

18 July - **Bishopbrae**, Bathgate (T B Wilson).
An all grass dairy farm with 100 Holstein-Friesian cows.

8 November - **Nether Affleck**, Kirkfield Bank, Lanark (J P Baird & Sons).
200 Friesian cows are shared between two steadings, each with a dairy. Some wheat is grown for wholecrop silage within the total area of 160 hectares.

MEET THE CHAIRMAN

Robert Reid, Chairman Central Scotland Grassland Society
Glen Farm, Glen Village, Falkirk



Robert's grandfather came to The Glen in 1916 after farming in Ayrshire and Argyllshire. One of his favourite sayings was, Go East for a farm and West for a wife! At that time, The Glen was 92 ha. In 1968 Robert had the opportunity to rent neighbouring land of 60 ha, plus another 28 ha 5 years ago bringing the unit now to 180 ha of mixed, mainly dairy farming. Spring barley (48 ha) for grain and spring wheat (5 ha) for wholecrop silage in an Agbag are grown. Silage (48 ha first cut, 36 ha second cut) is cut and made with farm labour, commencing at the lower ground (80 m) and working up the hill (to 160 m) where the grass matures 1 week later. In addition to the 100 registered Holstein-Friesians and followers, 80 bullocks are bought as suckler calves in October to sell one year later as stores or finished.

400-500 lambs are bought to fatten on the silage aftermaths and sold off by January. 30-40 pedigree Suffolk ewes are kept as a sideline interest.

Son Alistair, 23 years old, has recently returned home after College and 2 years working away from home, including 10 months milking cows in New Zealand. Robert's wife, Helen, takes a great interest in the farm and their daughter, Elizabeth, a pharmacist is, at present, working in the hospital at Southend on Sea, Essex.

CENTRAL SCOTLAND GRASSLAND SOCIETY

Silage Competition 1995

HF Seeds Prize-Giving Meeting of the CSGS
on 17 January 1996
C M McCombie

Silage Judge: **Russell Kerr, Kirklands, Dunsyre**

The judge had enjoyed his visits to the competitors on the short leet. Fewer farms were visited than usual because of withdrawals from those selected, but all of the finalists were of a high standard so that judging was difficult.

The results were announced by the judge, and the prizes presented by Chris Totten of HF Seeds.

HF Seeds Cup:	1st Prize	A Reid, Plean Farm, Stirling
	2nd Prize	T Brown, Muirhouse Farm, Carnwath
	3rd Prize	G Miller, Gallamuir, Plean
Hamilton Reco Salver for Best Beef & Sheep:		M Lyle, Mid Cambushinne, Dunblane
Best Big Bale Silage by Analysis:		A Dyer Culticheldoch, Muthill

The points awarded were as follows:

	Analysis (35)	Inspection (65)	Total (100)
A Reid, Plean Farm, Stirling	29.70	54.50	84.20
T Brown, Muirhouse, Carnwath	27.50	55.50	83.00
G Miller, Gallamuir, Plean	24.63	53.50	78.13
D M Lyle, Mid Cambushinne, Dunblane	23.94	51.00	74.94

HOW IMPORTANT IS SILAGE DRY MATTER?

Michael Milligan, Culvennan, Castle Douglas

In writing these few words on silage, first let me define:

1 **The objective**: To achieve preservation whilst minimising losses of nutrients and avoiding adverse changes in the chemical composition.

2 **The principles of silage-making:**
Grow the right grass.
Cut it at the right time.
Make it quickly.
Seal it properly.
Use an additive.

If grass silage is to be used as a **production** ration as well as a maintenance ration, these principles must be followed.

Silage is capable of milk production far in excess of generally accepted levels, **but**:

Production depends on **intake**, and intake depends on **quality**,

'D' Value	between 70-80
pH	3.8-4.0
NH_3	below 5
CP	16-18

The quality of silage is far more important than the Dry Matter.

The general practice of trying to achieve high DM itself lowers the quality. As soon as grass is cut, it begins to lose its feed value through breakdown of starch and protein factors. By scattering the grass to achieve higher DM, you incorporate air into the grass which increases pit losses as this oxygen has to be converted to CO_2, taking longer to achieve the correct pH which stabilises the silage.

Nothing should be done to sacrifice quality, and having achieved quality the silage must be allowed to express itself by giving higher intakes and more milk.

Concentrate levels can be significantly reduced to a level where 6,000 litres can be achieved on 0.5t concentrates.

No cow objects to wet grass where the DM is very low, as long as the quality and quantity is there. So why should she perform better on high dry matter silage? The answer is that the quality of the usual low dry matter silage is never good enough to achieve the necessary intake.

The grassland societies are quite wrong to put emphasis on Dry Matter. Advice, and the silage competition, must be based on **what that silage is producing or can produce through its quality**.

Production from forage is the key to the future, and to mark silage on its Dry Matter is giving the wrong signals. If a silage competition can be influenced by either weather conditions or the area of the country rather than silage quality, it is not achieving the improvement in techniques looked for.

Remember, the cow is the final and best judge.

BGS GRASSLAND MANAGEMENT COMPETITION - SCOTTISH REGION 1995

A trial run of a Grassland Management Competition took place during the summer of 1995. A total of 10 farms, 2 per Scottish local grassland Society, were judged by Dr John Frame on behalf of the organisers, the British Grassland Society. In addition to the previous winter's silage, summer grazing management, slurry storage and use, livestock output from forage and overall grassland policy were judged.

The 1995 Scottish winners were Robert and Caroline Dalrymple, Crailoch, Ballantrae, representing the South West Scotland Grassland Society. Sandy Bankier, Fernishaw, Cleland (CSGS) was runner-up. The prize awarded was 2 free places on a BGS Summer Visit. Congratulations to Robert and Caroline for the high quality of grassland management and livestock output.

SWSGS Silage Champion, Hew Chalmers (left) receives the Silver Rosebowl from Bill Scott, Senior Manager, Bank of Scotland, Castle Douglas, with SWSGS Chairman, Archie Borland (second left) and Silage Judge, Walton Slack (second right).

SWSGS SILAGE COMPETITION 1995

A Meeting of the SWSGS held in the Douglas Arms Hotel, Castle Douglas on 18 January 1996

G E D Tiley

Sponsored by ***Bank of Scotland, Castle Douglas***

Silage Judge: Walton Slack, Ryedale, Silloth, Carlisle

The silage judge, Walton Slack, was introduced by Society Chairman Archie Borland, who referred to the wide spread of interests and achievements of this years' judge. Walton was a recent (1993-1994) Past President of the British Grassland Society and a previous runner-up in the UK Silage Competition. Among outside interests he was a past chairman of his local Rotary Club, chairman of the local National Rivers Authority, a board representative of an AI centre, governor of a local Secondary School and also a local magistrate.

Walton Slack thanked the Society for inviting him to judge silage, as most of his interests were connected with farming. He also wished to thank committee members who had chauffeured him around.

The Competition had been very difficult to judge, with 14 farms to visit in 4 counties. Nearly every farm was shaking and rowing up to produce a very dry silage, which was not done in Cumbria. He felt some farms were not getting as much from silage as they thought. Even with high milk yields, the aim should be to get the maximum from silage. All except one farm had double sheeting on the top of the clamp with very good sealing and very little shoulder waste. Effluent control was also very good throughout.

1995 Results

The analysis and inspection marks awarded to the farms judged and final placings are given in the Results Table 1.

First prize in the Dairy Class and overall Silage champion's Silver Rosebowl went to Hew Chalmers, Craigencrosh, Stranraer, with J Forrest, Meinfoot, Ecclefechan, runner-up. Third dairy prizewinner was J Welsh, Arness, Waterside, Fenwick. First Beef/Sheep prize and BP Nutrition Trophy was

Table 1 **1995 SILAGE COMPETITION - SHORT LIST FOR JUDGING** (in order of Analyses Marks)

Prizes		Marks *Analyses (35)*	*Inspection (65)*	*Total (100)*
	Dairy Class			
1st & Rosebowl	H Chalmers, Craigencrosh, Stranraer	30.80	49	79.80
	Barony College, Parkgate, Dumfries	30.10	40	70.10
Best New Entrant	B Will, Coopon Polwhilly, Newton Stewart	29.00	43	72.00
	D McColm, Cairngarroch, Drummore	28.90	41	69.90
2nd	J Forrest, Meinfoot, Ecclefechan	28.70	49	77.70
	R Paton, Torr, Auchencairn	27.00	45	72.00
	W Kerr, Helenton Mains, Symington	27.30	39	66.30
Michael Milligan	D Yates, Meikle Firthhead, Haugh-of-Urr	26.85	44	70.85
	A & I Irving, Largs, Twynholm	25.95	42	67.95
3rd	J Welsh, Arness, Waterside, Fenwick	24.65	46	72.75
	Beef Class			
	A Crichton, Killymingan, Kirkgunzeon	28.25	40	68.25
	J Nelson, Cogarth, Castle Douglas	26.60	51	77.60
	G Fitzsimon, Tregallon, Dumfries	26.40	36	62.40
1st & BP Trophy	J Biggar, Grange, Castle Douglas	25.75	53	78.75
	Big Bale Class			
1st	Barony College, Parkgate, Dumfries	27.35	-	-

awarded to J Biggar, Grange, Castle Douglas; runner-up was J Nelson, Cogarth, Parton, for the second year in succession.

The Best Big Bale silage on analysis was from the Barony College, Dumfries; Best New Entrant prize went to B Will, Polwhilly, Newton Stewart and the Michael Milligan Prize for attention to detail was awarded to D Yates, Meikle Firthhead, Castle Douglas.

Prizes for highest analyses marks within each County were awarded to:

Ayrshire	W Kerr, Helenton Mains, Symington
Dumfries	J McGarva, Horseclose, Ruthwell
Kirkcudbright	J Vos, Coopon Carse, Palnure
Wigtown	H Chalmers, Craigencrosh, Stranraer

Cash tokens from Plasti-Covers Ltd Irvine were awarded to the 1st Prize winners in the Dairy and Beef/Sheep classes.

Comments from Winners

Beef/Sheep Grange had changed to contractor during the last four years to speed up the silage operation, and a new pit recently constructed with a roof.

Dairy Craigencrosh had taken a 4th cut last year as big bales. The 5-day weather forecast was consulted before deciding when to start silage cutting. Hew Chalmers was coach to Scotland's gold medal winning National Curling team in his spare time. Meinfoot wilted for a minimum of 24 hours and used an inoculant additive on all 3 cuts, aiming to get equal quality in each cut. Cutting height was not too low and great care was taken in sheeting. Arness cut and made silage themselves, wilting as much as possible. The silage was self-fed with a home mix.

Silage Quality 1995

Ray Allbrooke, SAC Dumfries

A brief overview of silage analyses largely from Society members in the Competition indicated very few big bale entries - all from Dumfries; generally higher DM than last year; slightly lower D-value; consistently lower crude protein. Average analyses figures sub-divided on a County basis are summarised in Table 2.

Table 2 - SILAGE COMPETITION 1995 - ANALYSES MEANS

	DM (%)	D (%)	CP (%)	Intake Factor (Cattle)	ME (MJ/kg DM)
Ayrshire (29)	26.4	69.7	14.1	108	11.2
Dumfries (46)	25.8	71.7	13.2	110	11.5
Kirkcudbright (37)	25.7	70.9	14.3	107	11.4
Wigtown (32)	30.6	71.2	14.3	116	11.4
Total Dairy (144)	27.0	71.0	13.9	110	11.4
Beef/Sheep (34)	31.1	69.1	13.2	116	11.0
Big Bale (7)	30.3	70.3	14.9	116	11.2

( ) no of silages.

Ryedale, Silloth, Carlisle

Silage Judge, Walton Slack, talked at some length about his farming in Cumbria. He still retained a quarter-share with his wife, in the farm business, having first started in 1955. The farm is on alluvial silt, 2.5 m above sea level. In 1967 a tidal wave submerged the land for 2 days, depositing 7t salt ha^{-1}. Rainfall is 635 mm. The Ayrshire herd is strip grazed, though he felt set stocking was ideal for cows since they never ran short of grass. Sometimes he cut and grazed. The cows were split into two herds and kept separate in both winter and summer, and grazed different areas. Calving of the 180 cows was in July-September and January-March to spread the load.

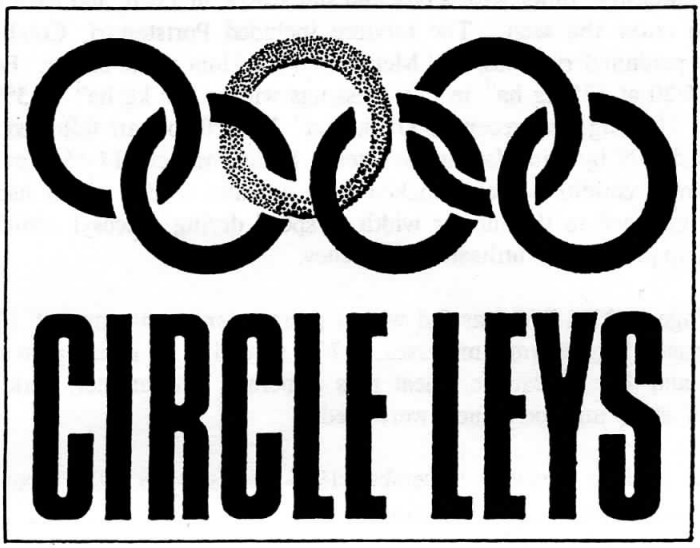
There was a 6-year crop rotation: 4 years silage and 2 years winter barley. The silage mix was sown at 40 kg ha^{-1} in the autumn up to the end of September

using a Cambridge roller with a box and star wheel attached, and bar dragging behind to cover the seed. The mixture included Portstewart, Condesa and Merlinda perennial ryegrass, and Menna and NZ Huia white clover. Fertiliser was 12:15:20 at 375 kg ha^{-1} in two dressings with a 190 kg ha^{-1} 34.5% N top dressing. Grazing land received 310 kg ha^{-1} 12:14:0 to start followed by 190 $kgha^{-1}$ 34.5% N by mid-May at the latest. Silage was cut 14-15 May with a Kuhn mower conditioner and shaken with a Kuhn tedder which had to be correctly matched to the mower width to speed drying. Ecosyl additive was used to help protein and utilisation efficiency.

50 kg silage at 27% DM was fed with a premix for maintenance + 27 litres. Premix was 155 kg caramel molasses, 137 kg soya, 137 kg maize gluten, 60 kg fishmeal and 448 kg caustic wheat plus minerals. In summer, dark grains, sugar beet, straw and soda wheat were used.

Milk was sold to Nestle. December 1995 yields were 19.5 l $cow^{-1}day^{-1}$. Analysis: 4.7 butterfat, 3.19 butterfat.

Calves were reared in calf boxes and received colostrum for 24 hours. By attention to detail and use of an Auchincruive-designed tunnel vent, there were no problems with pneumonia. Wintering sheep kept the grass down, and summer grass was checked for topping if necessary.



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NICKERSON
SEEDS

CRAIGENCROSH - SCOTTISH REGIONAL SILAGE CHAMPIONSHIP WINNERS 1996

G E D Tiley

Following quickly on his success in the local South West Scotland Grassland Silage Competition, Hew Chalmers, Craigencrosh, Stranraer went on to win the Scottish Regional Silage Championship.

The four farms in the Competition were judged by Dr Ron Harkess OBE, for many years a silage specialist with the Grassland Department at SAC Auchincruive and an Honorary Life Member and Vice-President of SWSGS. He was accompanied by John Weddell, Agronomy Department, SAC Aberdeen, representing the British Grassland Society who run the Competition. The judges found high silage standards on all farms, but Craigencrosh had the lead both in silage quality and performance. Appearance and tidiness of management were particularly remarked upon at the winner's farm. The winning silage analysed: 25.8% DM, 77D, 12.2 ME, 15.8% Crude protein, 115 Intake factor (cattle), 4% ammonia (% of total N). It was cut on 15 May, in the afternoon for maximum sugar content and Bioferm additive used. The clamp was quickly and carefully sealed with sandbags at the shoulder, but no side sheet because of self-feeding. The silage provided maintenance + 12 kg of milk. 60 per cent of milk (over 4,000 litres of the total 6,500 litres average) comes from forage.

Hew entered the UK National Silage Championships, run by the British Grassland Society in association with Kemira Fertilisers, ADAS and SAC, with 8 other UK finalists. This year's National winner was Will Taylor, Kircubbin, Newtonards, Co. Down, Northern Ireland. Runner-up was David Davies, Lampeter, Wales.

CSGS and SWSGS SILAGE COMPETITIONS 1996-1997

The local Silage Competitions, 18th CSGS and 24th SWSGS were run again in 1996-1997 with the same rules, marking and prizes as last year. It is the practice now that all silages of Society members are eligible for entry if these have been officially sampled by SAC. This is to ensure a uniform standard of analysis and silage assessment. Results will be reported in the 1997 Journal.

The Competitions will also continue in 1997-1998.

1994 SILAGE COMPETITION - SHORT LIST FOR JUDGING (in order of Analyses Marks)

Prizes		Marks		
		Analyses (35)	*Inspection (65)*	*Total (100)*
	Dairy Class			
1st & Rosebowl	W Knox, Redhills, Torthorwald	31.99	46.5	78.49
Best New Entrant	A Campbell, Cuil, Castle Douglas	31.73	48.0	79.73
	J Forrest, Meinfoot, Ecclefechan	31.61	49.0	80.61
	A Reid, Clauchlands, Lamlash	31.43	50.0	81.43
	R T Sloan & Sons, Darnlaw, Auchinleck	31.38	50.0	81.38
Michael Milligan	I Houston, Torkatrine, Dalbeattie	31.32	48.0	79.32
3rd	T & W McMillan, Drumwall, Gatehouse	31.14	53.0	84.14
1st & Rosebowl	A & W A McWilliam, Colfin, Stranraer	30.86	57.5	88.36
2nd	A H Borland, Altonhill, Kilmarnock	30.69	54.0	84.69
	B Ramage, Several, Drummore	30.36	49.5	79.86
	Beef/Sheep Class			
	J Nelson, Cogarth, Castle Douglas	29.33	50.5	79.83
	G Fitzsimon, Tregallon, Dumfries	28.96	34.0	62.96
1st &BP Trophy	W T McCombe, Trohoughton, Dumfries	28.91	52.0	80.91
	J Prentice, Hermitage, Haugh-of-Urr	28.34	50.0	78.34
	Big Bale Class			
1st	G & T L Clark, Newmains, Kirkbean	30.41	-	-

Due to an oversight, this Table was omitted from the Journal in 1995.

SWSGS GRASSLAND IDEAS COMPETITION 1995

G E D Tiley

The Ideas Competition sponsored by Kemira Fertilisers, received three entries in 1995. Due to the high quality and innovation of these entries, each one was awarded a prize. Entry C was narrowly judged by the Executive Committee to be worthy of the first Prize.

A Liquid Feeds Holder - G R Sommerville, North Corbelly, New Abbey.
This device has been used for four years to solve the problem of how to accurately add molasses to a mixer wagon while using a shear grab. Its greatest advantages are that the molasses can be added at any time during the mix without moving the wagon, and there is no need to disconnect the shear grab and its oil pipes to lift another attachment. The tank has been designed to fit inside the shear grab by driving onto it and closing the blade around it. The tank is then taken to the molasses tank and filled to the required depth. The amount of molasses added is constant and can be measured by use of a marker inside the tank. The molasses can be filled any time before it is needed, and the tank left near the silage clamp. During mixing of the feed, the tank can be again lifted inside the shear grab and raised above the wagon. By tipping the shear grab forward with the blade still closed the molasses will run out into the mix. After being left to drip for a few minutes, the empty tank can be set down without having to leave the tractor seat.

B Mobile Calf Crate - J Prentice, Hermitage, Haugh-of-Urr, Castle Douglas.
The Prentice Calf Care System allows one person to carry out essential husbandry tasks to calves during the first 48 hours of their life. The system includes a calf crate that quickly attaches to the front of an ATV or other suitable vehicle, together with a purpose-made weather-proof box to contain all the necessary equipment, drugs and notebook, for easy transportation to the field or around the steading. The crate allows easy entry of the calf, standing on the ground but restrained by the smooth crate sides, underbody straps and neck yoke, resulting in a contented animal usually with its mother standing close by.

Husbandry tasks such as recording, to comply with 1995 Regulations, de-horning (using a simple new technique with caustic paste), ear tagging, castrating and injecting can be carried out systematically, accurately and cost-effectively with the absolute minimum of stress on the animal and operator. In a matter of minutes, most of the calf's major husbandry requirements are completed in one operation.

Prentice Calf Crate
Light but strong and quickly attached to vehicle or other suitable point. Allows easy handling for: Navel inspection, De-horning, Castrating, Drenching, Injecting, Ear tagging and Information recording.

Equipment Box
Light and durable construction with quick attachment and includes compartments for various equipment, eg: Ear tags and pliers, De-horning paste, Elastrator rings and pliers, Syringes and drugs, Aerosols and markers, Drenching guns and fluids, Note book and pens, Towel or fabric for drying and filling gaps.

System 30 Attachment
Quick attach 'A' frame designed for front mounted carrying uses, eg: Calf Crate. Containers suitable for: Ballast when spraying, etc, Fencing equipment, etc and Workshop tools.

The calf crate is now in commercial production and available from Logic ATV Equipment, Hexham. It received 'Best of Livestock Category for New Equipment' Award at the Royal Show, and at the Royal Welsh Show 1995.

C **Silage Trailer Hopper**, J Nelson, Cogarth, Parton, Castle Douglas
A ladder-sided silage trailer has been adapted to include a hopper each side, by using the spare, solid silage side panels. This enables the trailer to hold 100% more silage feed, and at the same time cuts down on waste. An additional use is for taking ewes and lambs to the field after lambing. The solid hopper sides are then folded down and the ends are stopped up with two sheets of plywood.

SWSGS IDEAS COMPETITION

This is run annually with sponsorship from **Kemira Fertilisers**. Farmers in South West Scotland are invited to enter inventions, modifications or gadgets which they have designed and adapted themselves to make life easier in day-to-day grassland or stock management.

ISLE OF MAN GRASSLAND VISITS

Caroline L Perry
Agricultural Adviser, Knockaloe Farm, Peel, Isle of Man
Secretary of Manx Grassland Society

The Manx Grassland Society had its usual full programme of farm walks, both on the Island and 'overseas' during 1995, all enthusiastically attended.

14 February 1995. The February farm visits were to grassland winners at Andreas in the northern, low rainfall part of the Island. Jean and John Caley, Lheakerrow Farm were 1994 Ellerslie Silage champions, and Northern Region UK Silage winners in 1993 and 1996. Their 74 cow herd averaged 7,166 litres per cow and were set stocked on 14 ha until silaging. Silage was cut on 17 May using Axphast additive. All effluent is fed to the cows with buffer feeding in summer and strip-grazed Typhon stubble turnips.

David and Louise Brew, Ballakinnag won the Best Silage Utilisation Competition in 1994 with their sheep enterprise. 250 tonnes 78D (12.5 ME) silage were made in 1994 to feed 300 crossbred ewes from January to 2 weeks before lambing (mid-March). Cutting began on 16 May using Addsafe additive. Barley, wheat, oats and peas are grown for a high-protein home-mix. Dense ryegrass (including tetraploids) - white clover swards are suitable for both cutting or grazing.

1-3 May 1995. The Society visited 6 farms in the Clitheroe area of south Lancashire and near Skipton, West Yorkshire. These included a dairy farm with cropping, a bull beef enterprise with potato production for local chip shops, and an all-grass dairy farm. In the Skipton area, visits were made to 2 dairy breeding units: the home of the Aireburn British Friesian line and Newton Hall Farm, headquarters of the 'Dairy Daughters' AI centre. A dairy and sheep farm at 340 m and 1700 mm rainfall was also visited.

29 June 1995. The winners of the 1994 Dairy Grassland Management Competition, Raymond and Vivien Teare, Colooneys Farm, Braddan, were visited in June. The 68-Friesian herd averaged 5,428 litres, 3,110 litres from forage. 1994 silage cut from 24 ha was 77 D (12.3 ME), fertilised with 560 kg ha^{-1} 20:10:10. Mixtures are mainly perennial ryegrass with a high proportion of tetraploids. An N.C. Mitchell Irrigation gun is used to irrigate dirty water at the rate of 1 ha per 24 hours. Annual rainfall is around 1600 mm.

In **September**, the results of the Manx Society's annual grassland management competitions were announced. The Dairy Grassland Management prize went to Martin Lambden at Ballamona Hospital Farm, which the Judge found to be "remarkably free of docks and thistles".

The Grass Master Trophy for meat production from grass was won by Graham Crowe, Ballachink, East Baldwin. On land rising to 330m, Graham makes 1000 silage bales and 2500 hay bales from 28 ha, for his 950 ewes and 70 barley beef cattle.

THE USE OF CLOVER ON DAIRY FARMS (1995)

John Bax, SAC Crichton Royal Farm and Ian Brown, Genus Ltd (20 pp). Published by Milk Development Council, 5-7 John Princes Street, London W1M 0AP

This glossy publication is a well-written summary of a MMB-sponsored research project on white clover, undertaken jointly by five dairy farmers and SAC Crichton Royal Farm. The five farms provided a wide range of conditions from sea level to 290 m above sea level, and rainfall from 700-1000 m per year. The potential of white clover in dairying systems is outlined briefly and clearly, plus excellent sections on the establishment and the management of grass/white clover swards. These include the use of fertiliser, grazing techniques, bloat, silage and weed control. The final section gives details of the farms, sward output and the results of the 3-year project. Grass/white clover swards were established with success on all the farms, and were grazed and ensiled with no major problems. Purchased nitrogen fertiliser was reduced by up to 120 kgN ha^{-1}, yet milk production from forage increased by 363 litres/cow. Stocking rate increased also, and thus the mean margin over purchased feed and fertiliser increased by £186 ha^{-1}. Total herd margins rose by an average of 14.5%, and all the farmers intend to expand their area of grass/white clover swards.

The ideas in this excellent report deserve deep study by members of our Grassland Societies.

This Review was written by the late Dr Malcolm Castle.

MR RONALD HUGH ALEXANDER

Chief Analyst, SAC Auchincruive: 1946-1986
Born 7 June 1923: Died 23 July 1996

It is with sadness that we report the loss of one of Auchincruive's well known and long serving members of staff. After a prolonged illness, Ronald Alexander died on 23 July 1996.

Ronald was a native of Kilmarnock. He was educated at Kilmarnock Academy and then at the West College when it was based at Blythswood Square, Glasgow. In 1946 he was appointed to the West College as an Analyst. With the simplest of apparatus, in fact with little more than a mincer, an old fume-cupboard, an oven, some digestion and distillation equipment, and a balance, he started to provide analyses of silage and other feedingstuffs for the Advisory Service.

In 1951 he transferred to Auchincruive to establish laboratories at Gibbsyard. From humble beginnings he rapidly developed a highly sophisticated service to provide analyses of large numbers of samples of a wide range of materials. He was a perfectionist. He drove himself endlessly and tirelessly to develop better ways of doing things, and to achieve ever greater accuracy. He was full of new ideas and had a keen inventive mind. A number of his inventions were patented and are in general use today. Probably his best work and the work for which he will be best remembered, was concerned with forage evaluation. His work on sampling techniques, on design and manufacture of sampling tools, together with his development work on the *in vitro* assessment of digestibility of feedingstuffs had a profound effect on the accuracy of forage evaluation. This work and his experience of running a large scale routine analytical laboratory were recognised in many parts of the world. He spent a considerable time in Uruguay, Argentine, Spain and Iceland advising on the setting up and running of analytical services for the agricultural industry.

For many years, Ronald was Warden at Wilson Hall of Residence. He had a keen interest in young people and many students are indebted to him for the friendship and sound advice freely given. Many overseas students and visitors tended to migrate to Gibbsyard to discuss not only the work on hand, but also a wide range of topics.

But is was not all work, Ronald had many other interests. In his young days he was a keen motor cyclist and took part in Scottish Trials. He loved sports cars and enjoyed golf and skiing. He was well known in yachting circles and, in fact, built two boats. He loved work with his hands and had a workshop at

home that would be the envy of many. He wrote poetry in the Doric and was fluent in French, German and Spanish.

Ronald retired in 1986. Unfortunately, in the last few years, he did not enjoy good health. He will be remembered for his honest friendship and for his professional ability and integrity. He was a founder member of the South West Scotland Grassland Society, and continued membership after retiring. Together with colleague Mary McGowan, he was a keen supporter of the Society and provided all the analyses of the Silage Competition until the new system came in during the late 1980s.

From an Appreciation by SAC

SOUTH WEST SCOTLAND GRASSLAND SOCIETY

Vice Presidents' Prize 1995 and 1996

This prize is awarded annually to the best Grassland student on the Higher National courses in Agriculture and Agricultural Science at SAC Auchincruive. At the award ceremony in October 1995, the Vice Presidents' prize was awarded to **Ainsley Bagnall**. Ainsley is a valued member of the Grassland and Ruminant Science Department at Auchincruive who is studying on a part-time basis for an HND in Agriculture.

The 1996 Vice Presidents' prize was awarded to **William Orr** at the award ceremony in July 1996. William is a farmer's son from Netherton, a dairy/sheep farm in Lanarkshire and currently on the HND Agriculture course at Auchincruive. Both these students were members of the SAC Auchincruive team which, with Archie Borland of Altonhill Farm (our Chairman) achieved 'runner-up' position in the 'Hydro-Agri UK' Grassland Farmer of the Year Competition in 1996.

MECHANICS, FARMERS AND VETS

A Panel Evening of CSGS at the Newhouse Hotel
on 21 February 1996
C M McCombie, Secretary CSGS

Charlie Murray, Clydewest Machinery Ring
Clydewest is one of 14 machinery rings in Scotland. Machinery rings have been running in Europe for 30 years. Attempts to start rings in Scotland in 1976 failed because farmers were too prosperous at that time, but came in the late 80's when farmers were under pressure. The first ring was formed in the Borders in 1987. Machinery rings have an annual growth rate of 15-30%. Rings provide an opportunity to widen the use of machinery and tackle and to use spare labour during quiet periods on members' own farms.

The greatest use of Clydewest Machinery Ring is labour. The use of a data bank containing a list of services available from each member and map co-ordinates enable requested services to be sought from a nearby member. Mobile phones are extremely useful for contacting members. The system is vulnerable at peak periods, eg: when conditions are suitable for dung spreading demands for equipment and labour outstrips supply. Machinery is not normally hired without labour unless clients have a closer relationship.

With less labour and bigger farms, the future looks good for machinery rings.

Dougie Carruthers, Netherton, Auchenheath
Netherton is 200 acres (80 ha) with another 40 acres (16 ha) 3 miles away. There are 135 cows with 115 being milked at present; 10 heifers calve in July while 30 cows are calved mid-end March, with the remainder all calving in September/October. The average milk yield is 5,700 litres, with a calving index of 370 days. Cows start winter feeding on first cut silage, while youngstock eat half of the second cut. 60 tonnes of draff are ensiled with the grass and 240 tonnes of supergrains are kept in a separate pit. Silage is self fed and this years' silage had an analysis as follows:

	DM	D Value	Protein
1st Cut	26	76	15.1
2nd Cut	27	17	15.0

A home concentrate of 1 tonne barley, 100 kg soya, 50 kg fishmeal is used. Some soya is fed to dry cows. Concentrates fed per cow is 0.15 kg/litre. Milk quality is 3.86 per cent protein and 4.18 per cent butterfat. Mixing of feed and milking is done under a white meter electricity tariff, which has led to substantial savings.

The silage face is too high for self-feeding, so the top layer is removed and placed in ring feeders. It is believed a drop of 100 litres in milk production was the result of the cows eating the silage placed in the rings instead of eating the available supergrains.

Cows are set stocked on two blocks each of 35 acres (14 ha). One block is for day, the other for night. Normally fertiliser is applied every three weeks on the grazing block, but the exceptional conditions last year resulted in an apply-when-needed policy. 115-220 acres (46-88 ha) are cut for silage, with three cuts from 50 acres (20 ha) and two cuts from the remainder. Silage receives 135 kg ha^{-1} N first cut. Soil samples are taken regularly and have enabled savings in P and K.

Silage is made through a 4-member forage group formed 23 years ago. Despite there being no grants for groups nowadays, the group is still functioning. Grass is cut with 3 m John Deere with conditioner and swather. It was found the swather did not put the swaths close enough to each other and a Krone rake was tried and has since been purchased. Around 120 acres (48 ha) of grass are ensiled in 2-2.5 days. Grass is wilted for 24-48 hours and under normal conditions no additive is used, though Add Safe is used when necessary.

John Baillie, Hillend

John Baillie graduated as a vet in 1976 and worked around Biggar for 3 years after which he returned to Bogside when his father underwent a hip replacement. Bogside was 120 acres (48 ha) with another 50 acres (20 ha) nearby. Cows at that time were housed in the byre, but they are now in cubicles and fed silage. Quotas caused problems since the cow numbers were being increased. Youngstock were housed on slats and silage made by contractor. Father did the calf rearing and John did the AI. Employed one man but insufficient income for two labour units so returned to veterinary practice again. Starting with six clients enabled him to ease himself from the farm. The vet practice grew with first a part-time assistant, then a full time partner.

In 1994, with the dairyman and his father getting on in years, and the practice becoming busier, the decision was made to put the cows away. Bogside farm was unsuitable for anything else, so Hillend Farm was purchased with 250 acres

(100 ha) plus an additional 50 acres (20 ha). 34 cattle and 150 ewes of his own are on the farm, with the remaining area let. 20 acres (8 ha) are cut for big bale silage and 10 acres (4 ha) for hay. Only 1 hour in the morning and 1-1.5 hours at night is spent on the farm.

Now there are 3 vets in the practice; himself, John and Sarah. 20% of the time is spent on administration. The majority of the work is with farm animals, and only 20% of the work on small animals. Veterinary medicine is changing with disease management and prevention and economic control becoming more important. With ever-increasing knowledge, it is difficult to keep up to date, eg: he had recently attended a 4-day mastitis course of 12 sessions. In the near future, it is probable that vet students will graduate in a specialisms rather than as general practitioners. More equipment is now required, eg: pregnancy scanner, daisy computer, etc.

As a hobby, vintage tractors occupy any spare time, and he can dismantle them easily but reassembly can be difficult.

MAIZE GROWING BOOKLET

Growing Maize. SAC Crichton Royal Staff, Dumfries.

The SAC Maize Information Centre for the North, based at SAC Crichton Royal Farm, Dumfries (Tel: 01387 263961; Fax: 01387 251789) have produced a short booklet which provides an up-to-date guide to maize growing in Scotland and the north of England. It contains information on choice of site, seed bed preparation, varieties, sowing, fertiliser, weed control and harvest. Other topics covered are avoiding nutrient losses in the soil, feed value of maize, performance of maize at Crichton and the benefits of using plastic.

Not so many years ago, maize was ruled out as a suitable crop at Crichton, but the breeding of new, earlier varieties and improved growing techniques and management has made the crop economically viable in selected areas of south west Scotland.

MAXIMISING PROFIT WITH GRASS AND GRASS SILAGE

Sinclair Mayne, Agricultural Research Institute of Northern Ireland, Hillsborough, Co. Down.

A Meeting of the SWSGS at Northwest Castle Hotel, Stranraer, November 1995
*Sponsored by **McGill & Smith (Seeds) Ltd***

The background to current work at Hillsborough was: A perception that grass and grass silage was old-fashioned; grazing management was difficult and there were problems of increasing costs, variable product and effluent with grass silage. Current trends were - high genetic merit cows; feed more concentrates, grain and 'cheap' by-products; alternative forages: maize, wholecrop cereals and fodder beet. Future trends will be CAP and GATT reforms which are likely to put pressure on milk prices and increase cost of inputs. Hence the reason why **Grass and Silage are important**.

Milk Production Systems

Two opposite options for profitable milk production were visualised:

Table 1 Milk Production Systems

	Farm A	**Farm B**
Current System		
Herd yield (litres/cow)	4820	9376
Concentrate input (kg/cow)	476	2000
		1.5t fodder beet
		2.5t wet distillers grains
Target System		
Herd yield (litres/cow)	5000	12000
Concentrate Input (kg/cow	-	2.t+

Breeding strategies were leading to the use of larger bulls and higher grass intakes were needed for high genetic merit cows. Thus 7.5 litres more milk day $^{-1}$ required 19 kg DM. Under ideal grazing conditions in paddocks, intakes were normally 15-17 kg DM day^{-1}. There will thus not be sufficient grass (Table 2). The alternative would be to put in more concentrates.

Table 2 Grass intakes required for High Merit Cows

	Genetic Merit	
$PTAg_5$ (Fat + prot)	5	55
Liveweight (kg)	550	650
Milk yield (kg)	25.0	32.5
Grass intake required (kg DM/day)	15.0	18.7

How can grass intakes be maximised with high producing cows?
It will be necessary to maintain high quality swards throughout the season. To achieve this it would appear essential to move towards seasonal rotational grazing, with the use of topping, alternate grazing and cutting, and of leader/follower grazing. The dairy cow cannot be expected to roam around looking for feed - this must be presented to it as simply as possible. New high intake grass varieties will be needed. Some concentrates of the correct type may be necessary, but the priority is for the cow to eat plenty of grass. This is preferable to being kept inside on 14-15 kg concentrates daily. Research on maximising grass intake has been undertaken since 1992 at Hillsborough with 100 high merit cows (RBI average, 140).

Why extend the grazing season?

1 To reduce reliance on grass silage - because of the increasing cost of silage, and the low intake characteristics of a lot of silage. Could grazed grass be an alternative to silage?
2 To improve cow performance through better milk yields and milk composition.
3 To improve overall grassland management, and
4 To increase profit/litre of milk produced.

The challenges for extending the grazing season are:

1 How do we make grass available in autumn and spring?
2 How can we be best utilise this grass?
3 What is the feeding value of this grass, and effects on animal performance?
4 What are the implications for growth during the 'normal' grazing season?

Making Grass Available in Autumn

1 Because of low grass growth rates from 1st September onwards, it is difficult to accumulate enough grass for autumn grazing.

2 By extending rotation lengths up to 50-60 days, ie: from 1st September to 1st November, it is possible to carry more grass into the autumn. This is the secret - to carry grass rather than trying to grow more grass in the autumn.

3 Aim to extend rotation length from late July onwards by bringing in silage regrowths, removing dry cows, and buffer feeding with silage to extend the rotation until early December.

4 Monitor grass growth/grass availability by regular height measurement.

The rate of response to autumn N application is shown in Table 3.

Table 3 Response (kgDM/kgN) in herbage available on 1 November to N fertiliser applied in autumn

	N application (kg/ha)		
	30	*60*	*90*
Date of N Application:			
30 August	16.6	11.8	9.8
20 September	7.4	8.9	4.9

The August application gave a good growth response even at the highest rate, though from the environmental point of view there could be soil leaching losses. Responses were much lower in September.

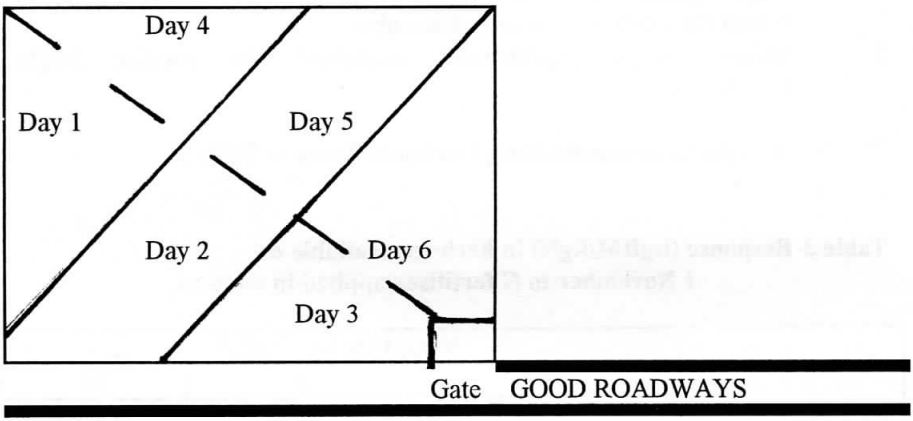
Comparison of grass composition in November and March is shown in Table 4. DM and protein contents were lower in November.

Table 4 Composition of Grass in November and March

	November	**March**
Dry Matter %	15.5	19.2
Composition of DM (%)		
Crude protein	21.0	27.4
Sugars	16.3	11.1
Acid detergent fibre	25.4	20.0

Utilising Autumn/Spring Grass, based on many years of experience in New Zealand. The diagram below shows the grazing rotation during wet conditions, where the most distant paddocks are grazed first.

Wet Grazing Techniques



Utilising Autumn/Spring Grass

1 Good roadways/wide gateways.

2 Short grazing periods, according to weather conditions; remove cows if they stop grazing.

3 Sub-divide paddocks with an electric fence to provide daily allocation of grass.

4 Back fences to prevent re-grazing/sward damage.

5 Cows are keen to eat the grass, resulting in lower concentrate feeding and better appetites for the fresh silage when they come in for the evening. The cows also benefit from being out for a few hours during the day.

Every day the cows can be out saves money, but there is little benefit from continuing beyond the end of November.

Producing early grass in spring can be encouraged by 1) conditioning swards by autumn grazing; 2) applying Nitrogen early; 3) use of early varieties of ryegrass, but note that these early varieties are poorer in mid-summer; 4) possibly grazing silage ground in March.

Table 5 Effects on cow performance

Autumn Grazing (29 October - 26 November 1993)

	Feb/March calvers Silage + 2kg concs day^{-1}		Sept/Oct calvers Silage + 6kg concs day^{-1}	
	Housed	**Grazing 2-3 hrs day^{-1}**	**Housed**	**Grazing 2-3 hrs day^{-1}**
Silage intake (kg DM day^{-1})	10.7	6.7	11.0	6.8
	-37%		-38%	
Milk yield (litres day^{-1})	12.3	14.7	23.1	25.2
Milk composition (%)				
Butterfat	4.18	4.27	4.12	4.00
Protein	3.22	3.46	3.14	3.27
Milk value (£ cow^{-1} day^{-1})	2.85	3.51	5.31	5.78
Benefit from grazing	+£0.66		+£0.47	

Spring Grazing (26 February - 16 April)

Both groups fed silage + 4kg concentrates day^{-1}

	Indoors until 16 April	**2 hrs grazing day^{-1} from 26 February**	**Significance**
Milk yield (kg day^{-1})	21.2	23.4	**
Milk composition (%)			
Butterfat	3.97	4.18	
Protein	2.85	3.05	*
Milk value (£ day^{-1})	4.78	5.47	
Benefit from grazing	+£0.69 cow^{-1} day^{-1}		

Extended Grazing - Summary

1 Extended grazing can improve profit/litre milk produced, but some risks are involved.

2 Always have sufficient silage to cope with a 6-month winter. If necessary, carry silage forward from year to year.

3 Start planning in July; increase rotation length from 1st August onwards.

4 Set target dates for night housing and full housing, and budget grass accordingly from 1st September onwards.

5 Use autumn management and early N application in spring to enable early turnout.

Conclusions

1 Current trend towards high genetic merit dairy cows will continue.

2 CAP and GATT reforms will result in lower milk prices.

3 We need to accommodate high merit cows in grass-based production systems, with maximum use of grazed grass, improved intake and production from grass silage, and use of complementary forages where appropriate.

4 Extending the grazing season in spring and autumn can facilitate improved production from forage.

Points from the discussion included: If the grass was closed up too early, there could be wastage from senescence. In wet conditions there was no damage from grazing for 1-2 hours. Frosted grass could be grazed without harm. On very wet farms, extended grazing should be initiated very cautiously, grazing 2-3 weeks later each year.

Considering the relative economic returns of extra milk and savings in silage compared with sheep grazing, cow grazing should be regarded as the first option and sheep grazing second. Many farms give greater priority to silage than to grazing management. Dr Mayne was convinced that the paddock system was better through the season, and would allow build-up of grass for autumn grazing. Fertiliser use was basically: start with urea in spring and finish with urea in autumn, using compound in mid-season. Total 350-450 kg N ha^{-1}. Two cuts of silage were best, since the third cut was more expensive and often of low quality. Silage was not fed until September at the earliest; more cake would be fed if grass was short.

Considering the role of maize and alternative crops, we should not lose sight of the main crop - grass - or be distracted from using this efficiently. More wilted silage was eaten, but yields did not necessarily increase, though the silo could last longer. However, the costs of extra machinery had to be taken into account.

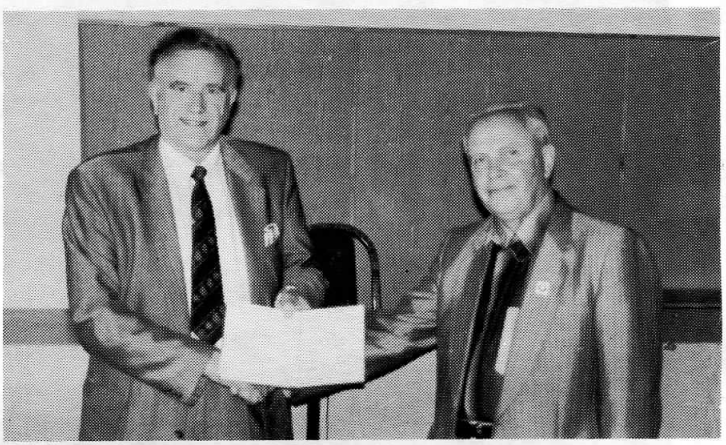
APPENDIX - Current Dairy Research at the Agricultural Research Institute of Northern Ireland

1 Grazing Maximising grass intake with high genetic merit cows; Extending the grazing season.

2 Silage Producing high intake grass silage by a) crop manipulation; b) wilting; c) additive treatment. Complementary feeds for specific silage types.

3 Milk Composition Improving milk protein content and proportion of casein; Altering the fatty acid composition of milk.

4 Genetic Merit/Nutrition Interactions Implications of increasing genetic merit for grass/grass silage - based production systems.



RUSSIAN HONOUR FOR JOHN FRAME

Dr John Frame, Honorary Life Member, Vice-President and former Secretary of the South West Scotland Grassland Society has been honoured by election to Academician and Honorary Member of the Russian Ecological Society. The award was presented by Professor German Blagoveschensky, Head of a Russian delegation at a grassland conference in Banska Bystrica, Slovakia in June 1996. This prestigious award was conferred for services to grassland research and development in Europe. During a distinguished grassland career at SAC Auchincruive, John Frame developed strong links with grassland workers in many countries in both Eastern and Western Europe, and made major contributions at meetings and conferences. From a strong grassland base in south west Scotland, these links have continued in consultancy work after retirement. The Society congratulates John on this honour which has been conferred on him.

Dr Malcolm Castle (second right), judge, presented the Forum Environmental Trophy to the 1995 winner of SWSGS Grassland Environmental Competition, Wallace Welsh (left) during the January 1996 Competition Evening, with Liz Garner, competition judge (right) and SWSGS Chairman, Archie Borland (second left).

GRASSLAND ENVIRONMENTAL COMPETITION

SOUTH WEST SCOTLAND 1995
G E D Tiley

This Competition had been judged in October by Dr Malcolm Castle, Tobergill, Coylton, Ayrshire and Liz Garner, Ayrshire and Arran FWAG Adviser. The results were announced during the Competition Evening at Castle Douglas. Dr Castle had very generously stepped in to replace Henry Murdoch, 1994 winner who had been indisposed due to illness. The winners of the Competition, Wallace and Angela Welsh, Warnockland, Fenwick, were presented with the Forum Environmental Trophy. Runner-up was W Lindsay, Culnaightrie, Auchencairn, who received a copy of the RSPB book: *Farming and Wildlife*. Third prize went to J Marshall, Auchenleck, also of Auchencairn. Judge Malcolm Castle emphasised that Conservation of Wildlife could go hand-in-hand with conservation of grass! He congratulated the Society for trying to encourage this by means of the Environmental Competition. Together with co-Judge, Liz Garner, they had seen high standards of both commercial farming **and** of consideration for wildlife.

Warnockland was chosen as winner because of the impressive commercial dairy farming but with harmonised buildings and a lot of thought into the planting and management of hedges. This added greatly to a rather bleak area and contributed to wildlife. Conservation work seen by the judges at Warnockland included new planting of broad-leaved trees at the steading to gradually replace old and damaged trees; sympathetic renovation of old buildings to modern uses, eg: calf house with chipboard-insulated roof and home-designed facade. A barn owl box was to be installed in the straw shed, and other ways of encouraging owls were to be considered. Roadways around some fields helped to save the grass from compaction damage and served to use the rubble from the disused buildings. Hedges had been regenerated and improved by trimming in an A-shape to encourage thickening and additional bird life. A 40-year old conifer belt on peaty ground provided shelter in an exposed area of the farm. A small rough area was to be fenced to allow natural regeneration, with some planting of willows. Upgraded slurry storage allowed maximum use of nutrients when spread in the spring. Protection of water courses was ensured by ditches around the silage pits and slurry stores. In summary, environmental measures were constantly being considered and planned, whilst conducting day-to-day commercial farming.

GRASSLAND IN THE 21ST CENTURY

The 50th Anniversary Meeting of the British Grassland Society, held at the Cairn Hotel, Harrogate, 4-6 December 1995.

G E D Tiley

This winter meeting of the British Grassland Society was the culmination of its 50th anniversary year. It brought together some 200 delegates; 50 from overseas as far afield as USA and Japan, and included no less than 16 former Presidents of the Society and 4 Founder members. Though mindful of the distinguished and active history of the Society, the theme of the meeting was: **Challenges and Opportunities of the 21st Century**. All of the 25 theatre papers and many of the 49 posters contained an essentially forward looking element. Two keynote special papers reviewed the **History of the BGS 1945-1995** (R A Powell, A J Corrall and Rosemary G Corrall) and **Advances in grassland and technology over the last 50 years** (J Frame, R D Baker and A R Henderson). The meeting was divided into 6 main sections:

1 The Socio-Economic Framework

Grassland was considered from the point of view of the consumer and demand for animal products, leading to public perception of grassland's economic worth. Only 3% of total expenditure went on grassland products, excluding recreation and amenity. The supermarkets now held sway in food marketing; consumers were more capricious and discerning, and grassland was a long way from the food chain. However, the British public were prepared to pay more for ESAs, but could protection of the environment sustain the huge predicted increase in world human population?

2 The Environmental Framework

Pollution of drainage water, especially by nitrogen and phosphorus, and the effects on nutrient-poor vegetation were problems that were very sharply felt in the Netherlands. There were potential environmental benefits from grassland and official policies could encourage these within agricultural support measures. Predicted effects of global climate change on grassland were not clear, though it was thought that effects on weeds, pests and diseases could be critical.

3 Future Technology

Roger Wilkins discussed improvements to production and utilisation efficiency which could occur, eg: by improved varieties, longer growing seasons, greater precision in manuring, higher digestibilities and protein contents of forages, and greater emphasis on grazing. Prof Ted Cocking looked into the future to the possibilities from the 'New Biology' arising from genetic and cell

manipulation to produce entirely new types of plants. Researchers required clear definition of aims and exactly what was wanted to guide their work. Progress had been made with introducing N-fixation into non-legumes. There were possibilities of producing vaccines, medicinal products, fibres and other novel products.

4 Production and Utilisation

Breeding the ideal pasture grass, extended grazing, wilting and cell wall degradability were considered in this section.

5 Sustainable Systems

Organic grassland farming, systems to reduce nitrogen losses and the development of more sustainable systems requiring lower N imports were included in this section.

6 Technology Interaction

The methods of transfer and impacts of new technologies on day-to-day commerce were discussed in relation to the milk industry and Research and Development (R & D) organisations. The Milk Development Council, funded by producer levy, was exploring the development of the industry into the 21st century, emphasising nutritional aspects, welfare, image and production efficiency. R & D was considered from the point of view of the needs of society and the maintenance of rural economies. Research programmes must very much take into account the food processor and retailer. There were exciting technologies emerging from scientific developments at the molecular level and from genetic engineering.

The complete proceedings of the 50th anniversary meeting were published before the conference, and are available from the British Grassland Society. Copies are available on loan from SAC Auchincruive library or SWSGS Secretary.

Grassland into the 21st Century - Challenges and Opportunities. Occasional symposium No.29, British Grassland Society, Harrogate, 1995. Ed. by Pollott, G.E.

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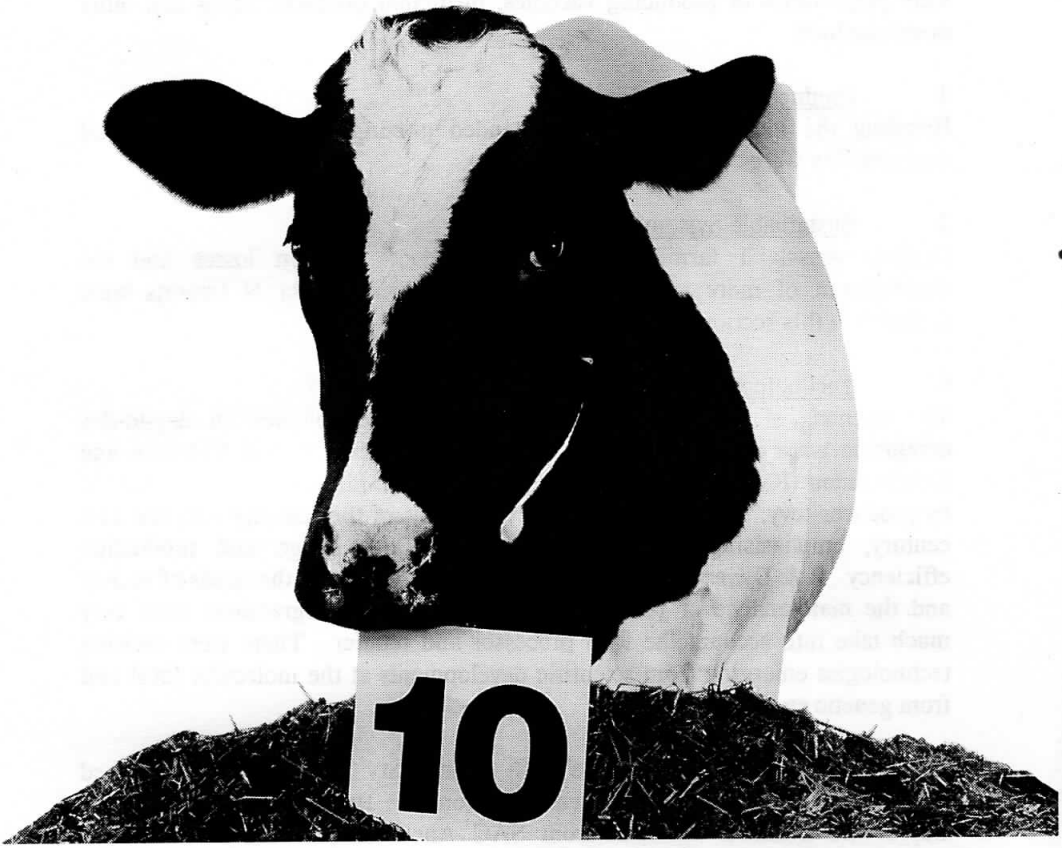

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JUDGING THE UK NATIONAL SILAGE COMPETITION

Roger A Chesher,
Manager, Technical and Corporate Affairs,
Kemira Agro UK Ltd, Ince, Chester

Judging the BGS national silage competition is, without doubt, the highlight of my year. It is both a pleasure and a privilege to meet so many enthusiastic silage makers and frankly I often think we judges learn more from them than they learn from us! Over the six years or so that I have been judging the nine regional winners to determine the overall winner of the Kemira Star Trophy, one can detect the trends, subtle changes and improvements in silage management.

An obvious change has, of course, been the swing towards higher **dry matter in silages**, driven no doubt by the need to keep effluent to a minimum but also by the realisation that higher dry matter is an important factor in maximising intake. The importance of higher dry matter was recognised during the last revision of the rules nearly three years ago. Field losses, once the main argument against higher dry matter, are now much less significant thanks to the use of rapid drying systems. These were pioneered by the continental machinery manufacturers, and are usually available through a contractor albeit at a price. Indeed, the more widespread use of contractors is another change and this has often caused some head scratching amongst the judges when comparing a DIY farmer against one using a contractor. The main factors we take into consideration in this area are the **speed of silage making**, which seems to be a crucial success factor, and the degree of control which the farmer may or may not have over the whole process.

The quality of clamp management seems to get higher every year. At national level very few points are lost for contamination or waste. Waste, when it does occur is usually on the top of the clamp or at the shoulders. The tops of indoor clamps with the uniform pressure of square bales are often completely waste-free. Where waste does occur it is nearly always associated with holes or tears in the plastic. The incorrectly sealed sampling hole causes frequent unnecessary waste, so keep an eye of those sample takers! Outdoor clamps with tyres are less easy to keep completely free of waste, but white plastic seems to help in this area. What, however, is in no doubt is that **consolidation** is the key. A farmer repeatedly working the clamp with narrow wheels on the tractor often does a better job that the swift, once-over of the broad-wheeled contractor. It is possible to have absolutely fault-free shoulders on a clamp. I've seen it three times indoors and twice outside. It is not easy to be perfect and one would

question whether it is necessary in a commercial situation, but if we can learn from the perfectionists to keep shoulder waste to a minimum it must be to our advantage. **Attention to detail** is the key: dishing up the sides with grass and consolidating well with double sheeting and very careful sealing. It sounds easy but it's not. One very effective and simple tip which I hope the finalists won't mind me passing on is simply to run a line of neat formic acid from a watering can along the shoulders. It might work with other additives - worth a try perhaps! Salt spread on the surface and shoulders (as one would do on a maize clamp) is also successful, and cheap. Feeding systems vary greatly on the farms we visit and, as marks are given for efficiency of feeding silage, we take a great interest in this. Often there is quite a difference between finalists both in terms of efficiency of the physical means of feeding and the efficient utilisation of nutrients. Keeping it simple often seems the best policy, with emphasis on keeping ample supplies of forage in front of the stock. Sometimes we are surprised at just how hard it is for the animals to get at their food!

In recent years all the finalists have completely mastered the essentials in environmental terms of correctly collecting, storing and disposing of effluent and slurry. This is a significant positive step forward, and farmers everywhere deserve to be congratulated. The challenge now lies in the efficient utilisation of these wastes, and an understanding of their feed or fertiliser value. As would be expected, the analytical quality of silages at national final level is very high. I am very impressed by those farmers who seem able to custom make different silages for different classes of stock with precision, year after year. This is due to fully understanding grass varieties, heading and cutting dates, fertiliser rates and timing. Despite the recent increase in available information on silage additives, the judges are often surprised that these are not used more strategically. Farmers seem to stick to a favourite rather than using 'horses for courses', or even none at all!

Finally, at a time when the issue of "customer confidence" seems so much to the fore, it is gratifying to see that **standards of safety and welfare** also continue to improve.

If the British Grassland Society National Silage Competition is a true mirror of standards on the farm, I feel members deserve a great deal of credit. Silage management has come a long way in a short time.

QUOTA SALES AND ESTATE TRANSFERS

John M Dale

A meeting of SWSGS at the Cairndale Hotel, Dumfries on 15 February 1996

This meeting was sponsored by RUMENCO LIMITED

John Dale introduced himself as one of the 2 Principal partners of the solicitor's firm of Dale & Marshall, Galston, Ayrshire. He had been born in the Manse at Penpont, Dumfries, where his father had preached and where also the bicycle had been invented in the local smithy. John had spent his childhood in Northants, Stirling, Blantyre and Aberfeldy, and had worked in practices at Peterhead and Kilmarnock before settling in Galston. He is Secretary of the local Agricultural Discussion Society.

Quota Sales

From its first introduction, quota has been tied to land by Community rules, with the aim of giving every farmer a chance, especially in the fragile economies of upland farms and in the Islands. "Quota is an instrument of Social Policy to protect less advantaged geographical areas by giving every producer an opportunity to produce, thus protecting the contribution of milk to the economies of disadvantaged rural areas".

Community regulations on Transfers state that when Quota is divided the apportionment must be either: a) in proportion to the areas used for milk production; or b) according to objective criteria used by the Member State. It was up to the buyer and seller to agree among themselves how the Quota is apportioned, but criteria need to have regard to the volume of milk a particular area of land could yield under normal farming methods. However, account can be taken of intensive farming methods which could boost yields, providing the parties agree.

In UK the accepted norm of transfers of up to 20,000 litres ha^{-1} quota is not officially recognised. The Intervention Board Guidelines 1995 are silent on this rule, which had been recognised earlier so that producers could be vulnerable in relation to apportionment criteria.

The EEC definition of a holding includes all the production units operated by a producer, and not just 'a farm' as in Scots Law. If quota is to be acquired from a second production unit, B, this unit must not be used for milk production for a

minimum of 8 months. In practice, 8 months + 2 weeks is recommended. After that time, Unit B can then be sold. The transfer of Quota must be registered with the Intervention Board.

Where Quota is transferred from farm A which is sold to Farm B with the ultimate aim of Farm B owning the quota, care is required, since regulations intend the second unit should be used for milk production. It is essential that the correct legal clauses be written into the sale of the first farm.

VAT is payable where Quota is purchased with lease of land, but not if included with a land purchase. A purchaser should ensure that rights of land occupation are exercised.

Estate Transfers

Depending on the stage of the family, some plans should be made early as to what is to happen to a farm business or estate. Present regulations were: No Capital Gains Tax on death; no Inheritance Tax between husband and wife. Regarding Inheritance Tax where passing to the next generation: exempt are £200,000 (both husband and wife); all agricultural assets, ie: farms and business assets (stock and equipment). Agricultural property relief is given on Farm and all Business Assets, including stock, implements and Quota. Gifts made 7 years prior to death are PETS (Potentially Exempt Transfers), which are free of Inheritance Tax, provided there is no Reservation of Benefit.

In Cottle vs Coldicott 1995 (Sp.C 40) Milk Quota was ruled as a personal asset of the producer and was subject to Capital Gains Tax. Where Quota was attached to the land, Agricultural Property Relief can be obtained, but not for leased Quota. Beef and Sheep Quota is Registered Producer Owned and must be left to named recipients in the Will or it will be included as part of the residue of the estate, bequeathed generally to non-farming members of the family.

Questions at the end highlighted the desirability of occupation of land with quota, and possible future uncertainties of taxation policy with regard to agriculture and land.

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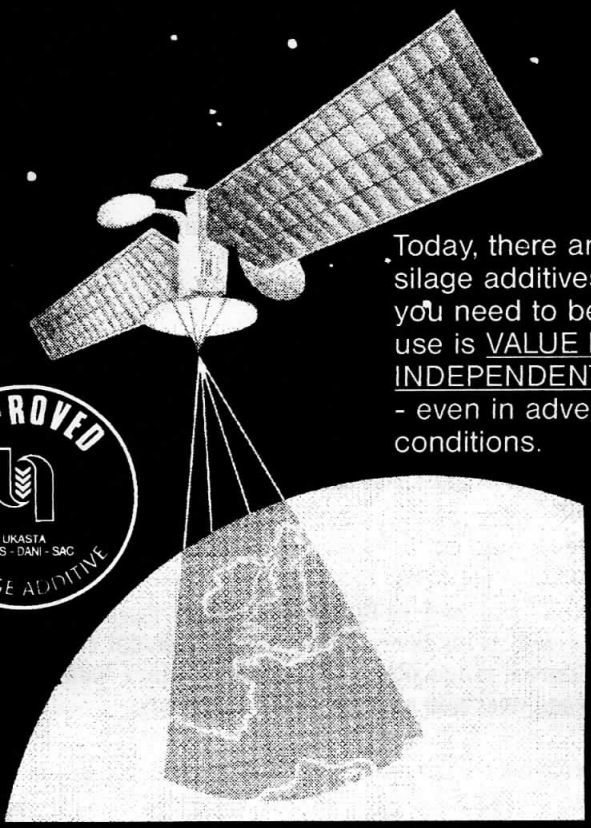

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RUMENCO PRODUCTS

Neil Dale, Rumenco, Burton-on-Trent

An outline of the products and operation of Rumenco was given by Neil Dale, following John Dale's presentation. Rumenco was part of United Molasses, a subsidiary of Tate & Lyle. It was the agricultural arm of United Molasses covering the whole of the UK and dealing exclusively with the merchants and not directly with farmers. There were 3 groups of products:

Bulk succulents - brewers grains, dark grains
Bulk liquids - molasses
Feed Supplements

Most sales were to the coal industry to produce briquettes. There was a range of farmer products.

The basic production of **silage** needs to be correct initially, also that of grazing. The genetic potential of 0.4 ha of grassland was roughly 60t fresh or 12t DM. Only 2-4t DM was actually achieved; therefore there was a great potential for improvement. Very good silage could be produced without additive if all aspects of management were correct. The days are gone when additive should be used as an insurance. The need is to select one that can produce an improvement in what is already being done. There was an apparent move away from acid and caustic additives to inoculants or absorbents which bulk up and absorb effluents. 60% of additives sold are likely to be inoculants.

Bactensil is a bacterial/enzyme combination. Bacteria require sugar which is sometimes low in grass. Combination products encourage more sugar production and provide a kickstart to fermentation, decreasing the time necessary for preservation.

Trials were being conducted on farms in the Yorkshire Dales and SW Scotland, in the Approval Scheme. It was inappropriate to compare one year with another, but products should be compared side-by-side on the same farm, ie: with and without. The trials in SW Scotland had shown an improved intake and preservation at the face, leading to more efficient use of cheaper forage.

WEATHER DATA FOR 1995

SAC AUCHINCRUIVE (55^0 29'N 4^{0}34'W) Alt. 45m

Month	*Mean Air Temp ^0C* Max	Min	*Mean Soil Temp ^0C* At 10 cm	*Rainfall* Total (mm)	No. of Days
January	6.9	0.9	3.4	112.0	24
February	7.9	2.9	4.2	112.9	25
March	7.3	1.6	3.9	114.9	25
April	11.2	4.5	7.3	37.6	12
May	13.9	6.6	10.5	50.2	15
June	18.1	9.0	13.9	21.4	6
July	20.4	12.7	16.1	93.4	22
August	21.3	12.0	16.3	24.2	10
September	16.1	8.8	11.8	90.5	19
October	14.9	9.2	10.9	203.4	21
November	10.4	4.4	6.6	45.6	13
December	4.3	-1.3	2.3	22.3	8
Means/Totals	**12.7**	**5.9**	**8.9**	**928.4**	**200**

Max. air temperature: 29.4 on 28 June and 1 August. Min. air temperature: -4.6 on 30 January. First frost: 17 November 1995; Last frost: 18 May 1995.

WEATHER DATA FOR 1995

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

	Mean Air Temp ^0C		*Mean Soil Temp °C at 30 cm*	*Rainfall*		*Sunshine*
Month	**Max**	**Min**		**Total (mm)**	**No. of Days**	**Total Hours**
January	6.6	-0.6	4.3	141.8	20	44.9
February	8.1	2.1	5.1	128.6	22	71.0
March	7.1	3.2	4.9	102.2	25	107.7
April	11.6	3.0	7.8	19.8	12	154.9
May	14.8	5.5	11.2	78.7	17	164.7
June	19.1	8.2	13.7	18.8	5	238.4
July	21.1	11.5	16.2	62.5	13	190.5
August	22.9	10.8	17.1	17.1	9	246.8
September	16.8	7.3	14.5	71.0	15	102.7
October	15.2	8.8	12.9	164.1	23	74.5
November	10.2	4.4	9.4	84.5	15	57.6
December	4.2	-1.2	5.9	39.3	11	31.8
Means/Totals	**13.2**	**5.3**	**10.3**	**928.4**	**187**	**1485.5**

Max air temperature: 28.7 on 31 July; Lowest Min: -12.5 on 28 December 1995. First Frost: 28 September; Last Frost: 18 May.

In summary, the 1995 weather was characterised by a wet winter, dry cool spring, with late May frost, hot dry summer and cold early winter.

Meteorological data reproduced courtesy SAC Auchincruive and SAC Crichton Royal Farm

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