

Greensward

1992

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AND CENTRAL SCOTLAND
GRASSLAND SOCIETIES

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FOREWORD

The principal article in this number of *Greensward* is a new feature, based on a questionnaire sent out by the Secretaries of the South West and Central Societies to all the companies known to supply grass seeds in the areas covered by the Societies. The information collected has been assembled in an article which describes the history of each firm and the services it provides. Also included is a directory showing the address, telephone and fax numbers and personnel of each firm. We hope that this will be useful to our farmer members following a period of considerable change in the seed industry. Please remember to mention *Greensward* if you contact a company new to you. Thanks are due to all who responded to the questionnaire.

With the continuing increase in the quality of the silages entered in the Competitions of our two Societies, many farmers require considerable persuasion to compete. For those thinking of trying for the first time this coming winter, I would recommend a thorough study of the Judges Key Points taken from the press release for the 1992 National Silage Competition, and reproduced in this Journal. These points should provide great help in ensuring that an entry stands a good chance of reaching the short list for judging.

I gratefully acknowledge the assistance of Dr Gordon Tiley and Mr Colin McCombie in the preparation of this Journal. Mrs June Bishop of the Publishing and Visual Aids Unit, SAC, Auchincruive is also thanked for her help.

David Reid - Journal Editor

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SEVERN VALE TO COTSWOLD HILL

THE BRITISH GRASSLAND SOCIETY SUMMER VISIT TO GLOUCESTERSHIRE, 1991

David Reid & John Frame

At the invitation of the Gloucestershire Grassland Society the BGS Summer Meeting of 1991 was held in that county for the first time. The meeting was based on the Park Campus of the Cheltenham & Gloucester College of Higher Education in Cheltenham and was attended by 170 delegates including three from the SWSGS and one from the CSGS.

The BGS President Professor Fred Gordon opened the meeting and the delegates were welcomed to Gloucestershire by the Host Vice-President Arthur Webb. Vic Hughes, Past Principal of the Royal Agricultural College gave an introductory talk on the county.

Farming in Gloucestershire

The county measures 60 miles from north to south and 45 miles from east to west, and although it borders the Bristol Channel for a short distance it is mainly inland. There are 3,500 significant holdings in the county, and the proportions of both smaller and larger holdings are above average for England. The most important crop is wheat covering 44,550 ha. In addition, there are 35,240 ha of barley and 5,260 ha of oilseed rape. The dairy cow population numbers 52,000. Gloucestershire consists of three distinct regions - the Cotswold Hills, the Severn Vale and the Forest of Dean.

The Cotswold Hills which occupy the eastern half of the county, have an average height of 210 m and an average rainfall of 710-860 mm. Here the farms have large fields (up to 20 ha), and are ideally suited to intensive cereal growing. Due to the narrowing of margins by such things as increasingly expensive grass weed control, the growing of combinable alternative crops, eg. oilseed rape and linseed, is increasing. There has always been some mixed farming in the Cotswold area - cows and sheep with the corn. After the Second World War dairy farming was a high input/high output enterprise, but grass and silage have now increased and lower cost systems are more common.

In the Severn Vale the soils are heavier and grass grows better than on the hills. The farms are generally smaller and dairying predominates. The Forest of Dean is the hilly area lying between the Severn and the Wye with a large proportion in forest and some open and unenclosed land. Many of the farms are worked part time.

Sheep farming in the Cotswolds

All three farms visited on the first day were in the Cotswolds. The first was a council smallholding with an early lambing flock as the main enterprise. Vale Farm, Broadway has been tenanted by Joe and Christine Furness since 1987. Joe also runs a contracting business and Christine is an agronomist with Schering Agriculture. The farm is on a clay soil and has an annual rainfall of about 760 mm. Of the total area of 31 ha, 22 ha are in grass, 6 ha in winter wheat and 3 ha in fodder beet. Part of the sheep flock of 420 ewes and 60 ewe lambs is lambed in December and the rest in March with an average lambing percentage (1988-90) of 185. The lambs are sold through the Cotswold Sheep Group, which is run by farmers. The gross margin per ha after forage was £1534 for lambing in December 1989 and £1275 for lambing in March 1990. Some Friesian/Limousin heifers are also fattened.

Campden House Farms, Chipping Campden was visited next, where the main enterprise was again sheep. However, these farms cover a total of 386 ha at about 300 m above sea level, and are part of the 500 ha estate belonging to the Hon. Philip Smith of the W H Smith family. The sheep flock of 800 North Country mules utilises the grass break of a conventional ley/arable system. There are 52 ha of permanent grass and five 67 ha blocks on an arable rotation including a 2-year ley. Previously the ley consisted of Italian ryegrass and medium-leaved white clover, but clover is now considered to be too expensive and is no longer sown. 25-30 percent of the lambs are finished on grass generally from June to August. The remainder are stored and finished on forage rape and turnips from September to February. In 1990 the gross margin after forage was £376 per ha.

Considerable attention is paid to conservation on the estate, and Phillip Smith is active in the county FFWAG. Continuous and extensive tree planting has been carried out, 8.4 ha being planted in 1990. Also in that year two ponds were constructed near the house at a cost of £30,000. To provide a habitat for useful insects and nesting cover for birds, all arable fields are bounded by 2 m strip which is sown with a mixture of suitable grasses.

Dairying in the Cotswolds

The final visit on the first day was to a dairy farm on marginal land consisting of typical Cotswold brash with some clay in the valleys. Whalley Farm, Whittington of 220 ha has been farmed by the Rowe family since 1936, and by brothers Jan and Roger Rowe for 19 years. There is a dairy herd of 168 pedigree Holstein/ Friesians with an average milk yield of 5300 l, and a silage beef unit of 75 steers. In addition, 72 ha of continuous winter cereals are grown - all direct drilled because of the shallow soil. To maintain a high stocking rate the cows are buffer-fed on silage when at grass. Usually this ceases at the time of the first silage cut but due to the dry weather it was continued throughout the summer of 1990. The margin over purchased feed per ha in 1990 was £1870 for the dairy herd and £1808 for the beef unit.

Conservation is also important on this farm. 28 ha of woodland and some rough grazings and banks are part of the biggest SSSI in Gloucestershire. A small area is planted with trees each year.

Dairying in the Severn Vale

The second day's tour began on a dairy farm which contrasted markedly with that visited on the previous day being on very fertile soils on the banks of the Severn. Richard Shield and his father have farmed the 100 ha Rectory Farm at Arlingham since 1971, and Richard was the MMB "Milk Minder Farmer of the Year" in 1989.

The dairy herd of 190 cows is easy-fed on silage in the winter plus a flat rate of 1.8 kg per head of 20% protein maize gluten meal in the parlour and 1.8 kg of 14% maize gluten and brewers' grains outside. Summer grazing is rotational round seven 4-ha paddocks on a weekly basis. An indoor silage bull beef unit was set up 2 years ago. The margin over purchased feed per ha in 1990 was £3063 on the dairy herd and £1307 on the beef unit. A slurry storage and handling system has recently been completed with a weeping wall partly separating the slurry. The liquid is applied to the grass by a rain gun.

Intensive sheep

Returning to Cotswold marginal land, members next visited the 169 ha Binley Farm which has been in the Gale family for almost 60 years and is mostly on Cotswold brash soil. It is run as a family partnership and for the last 10 years has been managed by Richard and Gerald Gale

with assistance from father John Gale. The farm consists of 104 ha of continuous winter cereals and 56 ha of permanent grass, the latter on very steep banks. Slot seeding with ryegrass and clover has been done, but winter housing of the sheep and the consequent resting of the sward has made the greatest improvement.

The sheep flock are lambed in three groups. First, 60 Polled Dorset cross mule ewes crossed with the Suffolk are lambed in December, followed by 110 broken-mouthed ewes in February. The main flock of 530 mules is crossed with the Suffolk lambs in March. The Gales are members of the Guild of Conservation Food Producers - half way to organic production - and sell lambs at a small premium to ASDA. In 1990 the gross margin per ha for the sheep enterprise was £451 at the March lambing and £801 at the December lambing.

A Cotswold estate

The final visit on the second day was to Stowell Park Estate, Northleach near Cheltenham where a major consideration in the estate management is the integration of farming with non-agricultural activities such as hunter trials and other countryside pursuits. This 2186 ha estate has been in the Vestey family since 1922 and consists of 1200 ha of arable and 100 ha of permanent grass. There is a sheep flock of 1300 mules which are crossed with the Suffolk to lamb in March, giving a gross margin of £235 per ha. A total of 400 suckler cows are kept in two herds for spring and autumn calving. and the gross margin after forage for this enterprise is £309 per ha.

Royal Agricultural College

The Royal Agricultural College, which farms 740 ha in three separate units, was visited on the third day of the tour to inspect a 49 ha organic block which is part of Harnhill Manor Farm. Production on this block is compared with that from conventional cropping on the rest of the farm. The organic block is managed on a 7-year rotation consisting of 3 years in a white clover/ryegrass/cockfoot ley, followed by winter wheat, winter or spring oats, Italian ryegrass/white clover, and winter wheat or barley or rye. The leys are grazed with March/April lambing ewes. Michael Limb the Farms Director was having difficulty establishing vigorous white or red clover leys. This was due firstly to undersowing in April in winter wheat, barley or oats sown the previous autumn, and secondly to some soils being shallow and drought prone. Undersowing was chosen because

it was believed that weed competition in autumn would militate against establishment if seed was drilled after harvest.

Cereal yields on the organic block were about 69% of that obtained from conventional cropping. Because of lower input costs and the high premium payable for organic cereals, the gross margin per ha averaged over 3 years was £457 for conventional winter wheat and £707 for organic winter wheat. A similar comparison for winter barley is only available for 1989/90 when the gross margins for conventional and organic were £328 and £440 respectively.

Michael Limb stressed the need for patience in building up 'natural' soil fertility. The only inputs to ley organic matter are the return of excreta from the grazing ewes and lambs and the manure from the inwintered sheep.

Farming on the Oxford clay

The tour ended with visits to Hayes Oak Farm, Purton and Hailstone Farm, Cricklade, both farmed by Arthur Webb and in the south of the county on the Wiltshire border. Arthur was Host Vice-President for this Summer Meeting, and is actively involved in farming politics.

Hayes Oak is an all-grass farm of 40 ha and the sole enterprise is a suckler herd of 40 Limousin/Friesian cows crossed with the Limousin for early autumn calving. The grassland is based on Melle perennial ryegrass receiving 340 kg of nitrogen per ha. When housed in December the calves have access to a creep and receive 0.5 kg of maize gluten daily plus silage. The grazing allowance per cow and calf is about 1.5 ha, and the steer calves are weaned in July at an average of 370 kg liveweight. The heifers go to a suckled cow and calf sale at Carlisle, and the gross margin after forage for these animals was £254 per head in 1990. In the same year the gross margin after forage for the rest of the suckler herd was £113 per head.

Hailstone Farm consists of 200 ha of permanent grass with a dairy herd of 290 Friesians, 75% of which are New Zealand bred, and a dairy/beef heifer unit keeping 70 Limousin/Friesian heifers annually. 3500 t of clamp silage (self or easy fed) are made each year from 120 ha in three of four cuts at 6-week intervals. The average yield from the dairy herd in 1990 was 5695 l with 3005 l from forage. The margin over purchased feed was £899 per cow or 15.79 p per l.

Members were puzzled at the high degree of undergrazing on the grassland. This was explained to the considerable shock of the members when Arthur announced at the end of the visit that no silage had been made for the dairy unit because he was selling Hailstone Farm in August 1991. The reason for the sale was that none of his three sons was interested in farming.

The Meeting ended with the Annual Dinner of the Society. The highlight of the 1991 Dinner was the attendance of Her Royal Highness The Princess Royal who proposed the Toast to the Society.

SOUTH WEST SCOTLAND GRASSLAND SOCIETY

GRASSLAND ENVIRONMENTAL COMPETITION 1992

A Grassland Environmental Competition will again be organised by the South West Society in 1992. In 1991 the judging did not take place until October which was too late to see wildlife and conservation at their best. The Executive Committee have, therefore, decided to arrange for the judging to take place in July this year, so the entry date will be past before this Journal goes to press. However, the winners will be announced at the Silage Competition Night in January 1993.

As in previous years this Competition will be generously sponsored by Forum Chemicals. The winner is awarded the Forum Feeds Environmental Trophy to be held for one year. The Competition will be judged by a farmer (last year's winner Andrew Gladstone) and a conservationist.

RECENT ADVANCES IN WHITE CLOVER TECHNOLOGY

John Frame, Ayr

A summary of a paper given by Dr Frame in June 1991 at the 9th Eastern Forage Nutrition Conference at Charlottetown, Prince Edward Island, Canada

Advantages of clover

White clover is the most important forage legume for temperate grassland. The main advantages of including it in a seeds mixture are (a) clover is rich in protein, has high digestibility and a high concentration of minerals; (b) clover-rich herbage is highly acceptable to ruminants and is superior to grass alone in potential herbage intake; (c) atmospheric nitrogen is fixed in clover root nodules by *Rhizobium* bacteria; (e) with regard to nitrogen recycling losses, grass/clover swards are environmentally safer than grass heavily fertilized with nitrogen, but are equivalent to nitrogen-fertilized grass mainly on account of nitrogen cycling during grazing. To capitalize on the advantages of clover, the grass/clover sward should have a 20-40% clover contribution on an annual dry matter basis.

These advantages are being increasingly appreciated in Western Europe where there is an excess of ruminant products fuelled by costly high fertilizer nitrogen input. Animal systems based on grass/clover swards are seen as lower cost, lower input, environmentally more friendly, more sustainable in the long term, and economically viable.

Seeds mixture

Grasses which have an open habit of growth are generally the most compatible with white clover, eg. tetraploid rather than diploid varieties of perennial ryegrass. The small leaved varieties of white clover are best under frequent or severe sheep grazing while the large-leaved varieties perform best under infrequent or lax cattle grazing.

To attain a good clover presence early in the sward's life an adequate clover seed rate should be used, eg. 3-4 kg clover to 20-30 kg grass per ha. Shallow sowing of clover seed is essential, and direct seeding early in the season is recommended.

Fertilizer application

White clover does not thrive on soil with a pH of less than 5.8, or under poor drainage conditions. In a mixed sward clover is adversely affected before grass if there is a shortage of plant nutrients such as calcium, phosphorous, potassium or trace elements. Application of phosphorous or potassium at establishment should be governed by soil analysis. Thereafter the amounts applied will depend on the management of the sward, more being required when cut crops are removed as silage than when the sward is grazed.

While 40-50 kg of nitrogen per ha will assist the early establishment of clover, repeated applications later will have a depressing effect. The nitrogen fertilized grass/clover sward will give greater yields than grass swards with the same amount of nitrogen until the clover has disappeared. The amount of nitrogen required on a grass sward to match the production from a grass/clover sward is about 180 kg/ha.

Spring applied nitrogen improves grass production but at the expense of subsequent clover growth, although clover contribution can recover from moderate rates of nitrogen (about 50 kg/ha) given an adequate initial presence of clover. Late summer or early autumn applications depress clover to a lesser extent than equivalent applications in the spring. Animal slurry from housed stock is a valuable source of plant nutrients, particularly potassium, but the nitrogen content has a depressing effect on clover. The rates of slurry application must, therefore, be carefully controlled.

Grazing

Severe grazing by continuously stocked sheep reduces clover growth and vigour, but rotational sheep grazing with rest intervals can maintain a satisfactory clover contribution. The clover content of a mixed sward is unaffected by the system of cattle grazing, possibly because cattle do not graze the sward down so severely and are less selective than sheep. Sward height guidelines of 4-6 cm are suggested for continuously stocked sheep and 7-10 cm for dairy cattle. Rotationally grazed sheep should be removed at 4-5 cm and cattle at 8-9 cm.



Real Alternatives

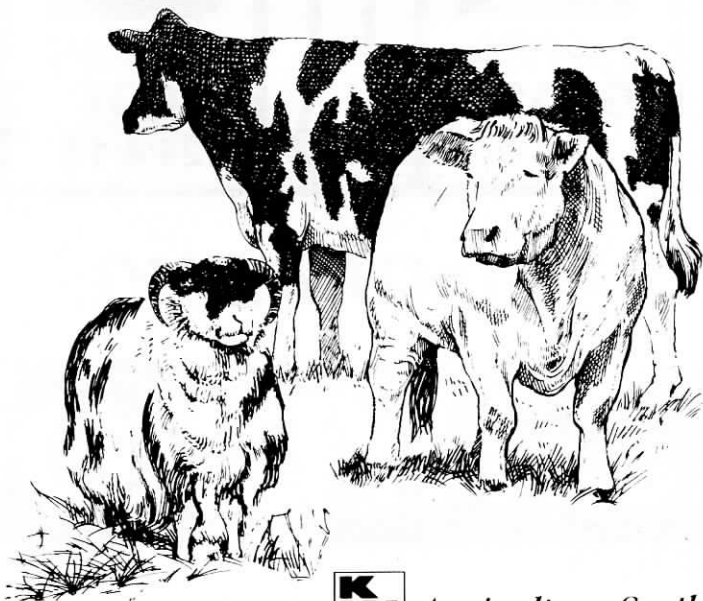
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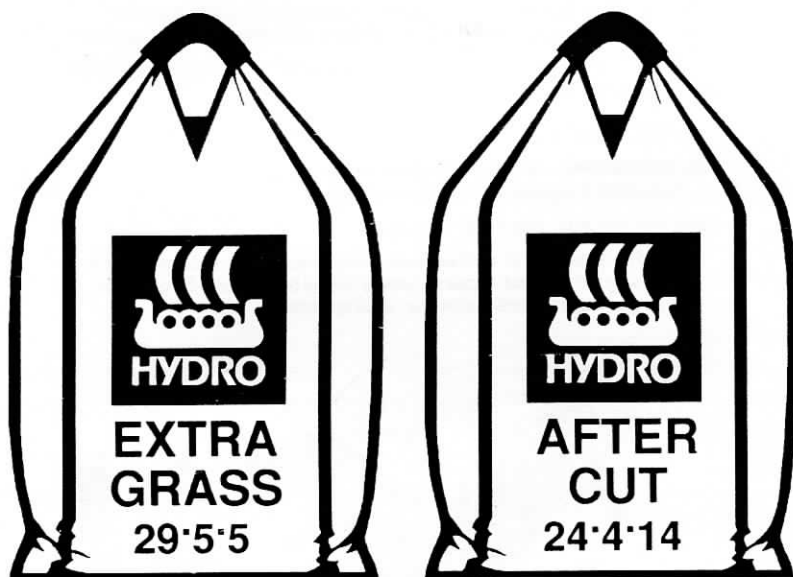
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Cutting

Grass/clover swards can be cut for silage without detriment to clover contribution provided nitrogen fertilizer is withheld or only used moderately. Nitrogen applied to an early season silage cut has a greater depressive effect on clover than nitrogen applied in midsummer. Since cutting also removes potassium, this nutrient must be adequately replenished by fertilizer or slurry applications. An annual dry-matter production of 10-11 t / ha can be attained from a grass/clover sward with no applied nitrogen and cut three to four times per annum.

Animal performance

It has been concluded from economic models of animal production from grass/clover swards versus grass receiving fertilizer nitrogen that including clover is potentially profitable when the fertilizer use on the sward is below 200 kg/ha annually. Many farms, especially beef and sheep, use lower rates than this, so the scope for improved productivity by exploiting grass/clover swards with their fertilizer nitrogen equivalent of about 180 kg/ha is obvious.

The herbage production from grass/clover swards is about 70% of that from grass swards given 350-400 kg nitrogen per ha, rates typical only of intensive dairy farms. However, the forage shortfall is less in terms of feeding value because of the high intake and nutritive value characteristics of clover-rich forage, and the efficiency of its metabolic use. Thus, better individual animal performance partly compensates for lower stocking rates. The forage shortfall can be made up with arable products or by-products on highly stocked farms, or a bigger area of grass/clover sward can be used, giving a lower intensity of land use. The availability of EC grants to farmers who reduce the intensity of their beef and sheep production is one factor which has brought about an increasing interest in grass/clover swards.

SWSGS EVENING VISITS TO FARMS IN SUMMER 1991

G E D Tiley, Secretary, South West Scotland Grassland Society

W Young, Waterside Main's and Beuchan, Keir, Thornhill - 30 July

Willie Young and family kindly invited the Society to visit their dairy enterprise at Waterside which carries 130 Ayrshire cows plus black and white cows. At nearby Beuchan there are 40 sucklers and a sheep flock of 220 Blackface and 100 lowland sheep. The total area of the two farms is 344 ha including 198 ha of heathery hill at Beuchan.

Willie's grandfather was a tenant of the Duke of Buccleugh from the 1920's until Waterside was purchased in 1954. Since then the buildings have been improved, with a spacious cubicle house for the dairy heifers. An interesting feature in this house is the twisted rope partitions. These are kept tight but give with the weight of the animals, and can also be undone if an animal gets stuck. Part of the building has a system of swinging gates which can be converted to calving pens. These are easily cleaned by lifting the gates. Another building has fans which circulate air inwards all winter.

All young stock are reared, and the pens in which Angus and Charolais calves are housed are in a cool well-ventilated old byre. The 14-14 milking parlour has a pre-cooler for the milk and the water from the cooler is used for washing. A footbath outside incorporates a crush with hoist to allow hoof trimming. The concrete of the bath has been corroded by the formalin used for hoof treatment.

Silage is chopped by a contractor at the rate of 16 ha per day which makes it difficult to keep ahead with the cutting. Beet pulp is added to some of the clamps. The contractor will not use acid additives so a powder is used instead. In 1991 the first cut received 113 kg/ha of nitrogen as 22:11:11, and the second cut 100 kg/ha as 20:5:5. Both cuts also received farmyard manure and slurry.

The floors of the clamps had been corroded by effluent, so repairs were done using a polymer resin mixed with cement spread with a squeegee. This was easy to apply and filled all the holes. A granite filler was

also applied where rough. The job was half the price of asphalt and was expected to last 5 years.

The cows are strip grazed most of the summer and the grazed fields are fertilized once a month. Grazing and silage fields are kept separate. The seeds mixture used was an intensive grazing mixture from S W Seeds.

At Beuchan another new building contains a home-designed movable barrier for the calves. The older buildings blend with the new, and an old hay shed has been linked with a byre. Novel features in these buildings are a polythene windbreak to shelter the calves and creep calf gates with rollers.

The hill land at Beuchen rises to 335 m where the heather has been burned. The lambing percentage is 95-100, and the Blackface lambs are finished on the farm. Sheep handling facilities are arranged in an old byre. A vibrator egg washer has been converted for use as a lamb handler. Outside the gate posts have been raised 30 cm to prevent the Charolais calves jumping out.

W Morton, Adamhill, Craigie, Kilmarnock - 7 August

The second summer visit on a fine August evening was to Adamhill by kind invitation of Bill Morton and family including son Gavin and his wife Jean. Forty members and friends attended this visit which featured a working demonstration of square silage baling by John Smith, Shaw Farm, Kilmaurs.

Adamhill is situated astride the Ayr-Galson road, and covers 146 ha including 49 ha of spring barley. There is a Friesian dairy herd producing bull beef from bull calves. The bull beef unit was formerly in a slatted shed built in 1962, but BSE had interfered with the critical marketing arrangements.

Some interesting ideas were seen in a cubicle shed built in 1970. The metal cubicles had been coated with bitumen / tar and the ends tarred in to prevent corrosion. Rubber mats and straw are used, and a wooden plank along the front of the cubicles provides an elevated walkway to inspect the cows. Slurry is scrapped daily to the slurry store, clean water being separated from the dirty water. The problem of effluent run off from the clamps was being tackled.

In the 20-year old milking parlour the pipe work had been moved and twisted to adapt to larger sized animals. A special electric calf feeder was seen in the calf house which dispensed cow's milk.

The working demonstration of square baling created much interest. After cutting with a demonstration Taarup cutter on loan from Hamilton Brothers, the rowed-up herbage was baled directly with a Heston 4700 Big Square Baler.

Big square bales are easier to store, feed and transport than round bales and may be cheaper to produce. The advantages at feeding time are : (a) there are only four strings to cut; (b) the cattle waste less because the square bale falls apart easily in contrast to round bales where the material is pulled through the feeding rail. Fermentation and analysis were claimed to be better with square bales due to the more even density. Higher dry-matter grass is ideally required for square bales.

The convenience of the square shape for transporting was seen during the demonstration. Bales can be wrapped or bagged. Alternatively, they can be stacked and sealed with a plastic cover as for clamp silage, when the silage is ready for easy extraction in the winter. Wrapping of the bales was demonstrated. Bags on square bales can be double folded without tying. It is possible to stack square bales higher than round depending on the dryness of the silage. Costs quoted were £1.15 per bale for wrapping, £1.50 for baling - £3.50 for the complete cut and bale.

Square baling of straw is cheaper at 82 p per m of bale length compared with 98 p per m for silage. 1.4 m is the normal length for silage, but the bales can be larger if they are to be stack in a clamp. However, the maximum size is restricted by the breaking strength of the string.

The system was pioneered in the Netherlands about 10 years ago. Originally there was the flexibility of building a stack close to where the silage was to be fed, but the new pollution regulations require a solid impermeable base with drainage to an effluent tank. The regulations also restrict the construction of this base to at least 10 m from any inland or coastal waters which the effluent could enter. As with clamp silage, careful and prompt attention to sealing is necessary.

C J McKay, Low Malzie, Wigtown - 13 August

The next visit, by kind invitation of Colin McKay and family, was to Low Malzie, which Colin described as the stoniest farm in Scotland. Low Malzie covers 120 ha with an additional 60 ha rented from two neighbours. The farm is all in grass and about 80 ha can be reseeded. Cultivations are avoided wherever possible and Colin hopes to keep his grass down permanently. A field which was ploughed once about 8 years ago yielded a huge pile of stones.

The grass swards are renovated by running over with a drill to add seeds. Chickweed was once a problem but is easier to control nowadays. A new sow-out follows kale (Bittern) direct drilled into a sward killed by glyphosate. The grass is sown with minimum surface cultivations so as to disturb very few stones using a seeds mixture containing perennial ryegrass and white clover blended with tetraploid ryegrasses.

180 kg/ha of nitrogen are applied as 25:5:5 annually to the grazing fields, with none from August onwards. In the spring of 1991 all of the grass fields were treated with Seamac foliar spray (£9.88 per ha) for the third year running. The swards are grazed tightly in the spring to avoid waste, and a supplement of silage is fed at night. Usually there is not much grass until June. Spring nitrogen is being applied earlier every year and by 1991 it was applied in early March.

2000 t of silage are made in a covered pit with effluent outlets to the slurry system. No additive is used in good weather. Acid additives were applied until 3 years ago. To avoid secondary fermentation, the purchase of a shear grab is being considered.

The dairy herd consists of 140 Holstein-Friesians which were milked three times a day during the winter, but twice a day milking is being tried in the summer. The dairy unit is very intensive with an average yield of 7400 l. There are also 50 single-suckled Angus-Friesian cows, all spring calved using AI.

A large dairy building was recently constructed at Low Malzie with a width of 25 m and containing 140 cubicles. In this house the passages are 6 m wide as the usual 4.6 m was not considered sufficient. The new milking parlour is a triangular 5 x 5 x 5, replacing a small 10-10. 125 cows can be milked per hour through the new parlour in an easy operation.

D Yates, East Logan and Meikle Firthhead, Castle Douglas - 20 August

The final evening visit of the summer was to East Logan and Meikle Firthhead by kind invitation of David Yates, his sons and family. For this visit the Society members were joined by the entire "Countryside and Recreation" HNC course from Auchincruive, who wished to experience the organisation and conduct of a visit to a commercial farm.

The Yates family moved to East Logan in 1971 with 60 pedigree Shorthorns. A few Shorthorns still remain on the farm but the dairy herd has been changed to pedigree Friesians and enlarged. With a policy of buying carefully selected pedigree lines an elite pedigree herd has been built up providing sought-after stock. Their Grovelink Wallen won first prize at the 1988 Scottish Winter Fair. The present herd consists of 110 cows with 180 young stock on the 144 ha of East Logan. There are also 100 beef cattle and 220 Greyface sheep on the 154 ha at Meikle Firthhead, which is to be developed as a dairy farm.

In 1991 the silage at East Logan was cut slightly later than usual (25-26 May) to obtain a higher dry-matter content and more mature herbage. The dry matter was 23% with a D value of 71.9 and an ME of 11.9. No additive was used on the first cut. The second cut contained a lot of clover, and both cuts were put in the same clamp which also contained a reserve of some 2-3 year old silage. Besides making their own silage the Yates undertake contracting.

For the third year running 4 ha of maize silage was grown on each of the farms in 1991. The crop was sown on 25 April after heavy dressings of slurry. Atrazine herbicide was incorporated, but did not work well in 1991 due to the dry conditions. A dressing of 200 kg of 20:14:14 was applied to the seedbed, and the maize variety sown was LG 2080 which is recommended for growing in Britain. The crop is cut in late October, depending on weather conditions, using a contractor with a maize header. Fresh yields were 15 t/ha in 1989 and 18t/ha in 1990. One-third maize silage was fed as additional roughage balancing two-thirds quality grass silage. With this diet a good quality milk was produced. Costs for maize seed and herbicides were £100-110 per ha. Maize increased intake, but the silage tended to be wet. The crude protein averaged 11%, crude fibre 24%, D value 67 and ME 10.7.

After visiting East Logan the visitors proceeded to Meikle Firthhead, the recently bought neighbouring farm. They walked down a private road over a Bailey bridge and passed a reclaimed field subject to flooding,

which included an old railway track. A new cubicle shed is being erected for the cows by the Yates with their own labour. This shed is 47 m by 24 m, and is accessible to the surrounding fields. In 1991 21 ha of barley, 10 ha of hay and 4 ha of forage maize were grown on Firthhead. Because of the greater exposure to wind the maize was much shorter than that at East Logan though sown at the same time. All first cut grass and maize silage went to East Logan, but all second cut silage was clamped at Firthhead. The clamps here are built against a quarry face wall and can be filled in 2½ days. The effluent is piped round the sides of the clamp. 32 ha of hill at Firthhead provide backend grazing for the sheep flock.

Acknowledgements

The Society is indebted to the Young family of Waterside Mains, the Morton family of Adamhill, the McKay family of Low Malzie and the Yates family of East Logan for arranging this most interesting and informative series of farm walks. Thanks are also due for the warm hospitality offered to members.

SOUTH WEST SCOTLAND GRASSLAND SOCIETY

20th ANNUAL SILAGE COMPETITION 1992-93

The Annual Silage Competition of the South West Society will be run again this year. The pre-judging system tested out in the last two Competitions will be repeated. Slight changes in the marking system are under consideration to take account of extra analysis data such as pH. It is also proposed that entry to the Competition will be free this year, though there will of course be a fee for the analysis. Details of a new method of entry will be circulated later in the year. The Executive Committee hope that the free entry will stimulate more farmers to enter. There have been new names at the top of the list every year during the past few seasons, and everyone entering can learn something new about silage.

CHAMPION DAIRY FEEDING

J Mitchell, Kennetsideheads Farm, Kelso

A meeting of the SWSGS at the Judge's Keep Hotel, Glenluce on 5 November 1991

The speaker at the first meeting of the SWSGS in the 1991-92 season was Jim Mitchell, Kennetsideheads, Kelso. The discussion was opened by Donald Fraser, Harbro Farm Sales, Turriff who sponsored the meeting. Donald formerly worked at Auchincruive and Dumfries in the Animal Husbandry Department. He now specialises in ruminant feeds in the Harbro technical team.

Jim Mitchell's 200-cow dairy herd has been the highest yielding milk herd in Scotland for the past 3 years with a current herd average of 9770 l. In 1990 he received the Duke of Cornwall Award from Prince Charles for the best use of natural resources on the farm coupled with care of the countryside. He also received the BOCM Cup for the highest yielding dairy herd of over 150 cows from HRH The Princess Royal.

Kennetsideheads covers 176 ha with an additional 59 ha of rented land. Besides 200 dairy cows it carries 250 dairy young stock, 100 fattening bulls, and a sheep flock of 95 Grey-faced ewes and 35 Blue-faced ewes plus lambs and hogs. Of the total area, 40 ha are in winter wheat, 12 ha in winter barley and 28 ha in spring barley.

Jim recommended farmers to THINK more - "What do we want and how are we going to attain it ?" Traditionally farmers have worked the land physically all day, including weekends, and not used their brains, while the rest of the community did not work weekends. It is important to get stock sold at market and not have to bring them home. Margins are vital in feeding policy, therefore, concentrates are fed. He suggested that quotas and good milk prices are leading to complacency. In California milk prices had suddenly been reduced by one third, stimulating more efficient management and feeding.



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Cows should be bred not only for milk production but also for better feed conversion though this means they might eat more. Jim uses MOET (embryo transfer) and does not aim for too large an animal - less than 1470 mm high.

A carefully thought-out feeding policy is necessary and this should be decided in January. This will determine which feeds are to be used in the following year, and these should preferably be bought forward. The cows at Kennetsideheads are fed in a single group in the summer, and all are buffer fed. In Jim's opinion spring grass is too lush and results in digestion being slowed down. In the winter the herd is divided into three groups according to feed requirements. A Keenan feeder is used, feeding a complete diet once only per day. Concentrate usage averages 0.36 kg/l. The margin over purchased feeds was £967 in 1987 increasing to £1404 in 1991. The cows are calved at 2-2½ years, and milked three times a day. The average cell count is 1.87. Dry-cow therapy is used, inserting tubes at the end of lactation and before the start.

The silage bunkers are 24 m wide to allow large wagons to be manoeuvred. The first silage cut is taken from 49 ha and the second from 36 ha. Addition of beet pulp was tried a few years ago but it was found difficult to mix with the silage. Jim believes that the cows should be without silage for at least one hour each day. In this way they eat more than when fed *ad lib*. The single feed is given in the morning. Low yielders receive no fish meal. The addition of Maxgrass to the silage was tried last year and found satisfactory. When feeding silage the consistency of the dung should be monitored. For instance, the use of molasses on the silage was stopped because the dung became too soft. With Maxgrass the dung is firmer and more milk is obtained.

Jim feeds the calves himself. In the old house the calves were too crowded leading to much pneumonia and many injections. The new house has six sections with its front open to the south/south east. The ewes are lambed indoors. The fattening bulls are fed on a barley-beef system using dark grains from Invergordon distillery plus minerals and yeast.

Jim concluded his talk by showing slides of some of his best animals. He stressed the importance of massive udder veins, claiming that a blood flow of 500 litres was required to produce a litre of milk. One favourite cow pictured was producing 14000 kg of milk.

Following his talk Jim answered a few short questions seeking further details. The silage is wilted for 36 hours, and brought in at a rate of 11-12 ha per day. An old Wuffler is used to get the grass to a dry-matter content greater than 20%. Cereal yields at Kennetsideheads average 4.48 t/ha for winter wheat, 3.36 t/ha for winter barley and 2.80 t/ha for spring barley. The altitude of the farm is 110 m above sea level. Finally Jim attributed 38% of the high yields of his cows to breeding and 62% to management and feeding.

Discussion

Donald Fraser, Harbro Farm Sales opened the discussion with comments on the significance of a typical silage analysis. Generally if the dry matter content is low the pH is also low. When the pH is less than 3.9 feed input must be balanced and moved away from a cereal base. A low pH can lead to foot problems.

The ammonia-nitrogen content is a good guide to protein balance and fermentation. If it is greater than 12% of the total nitrogen the effect on intake must be considered, and more cereals should be fed. Silages with less than 12% of crude protein require to be supplemented with RDP from concentrates such as soya.

Higher digestibility leads to higher intake, so herbage should be cut earlier when the fibre content is lower. The mineral content should normally be below 9% of the dry matter. If it is over 10% then soil contamination must have occurred resulting in poor fermentation and reduced intake. To diminish soil contamination attention should be paid to molehills, cutting height and avoidance of working in wet conditions.

Underfeeding leads to low milk fat and milk protein contents while overfeeding affects rumen fermentation. Lack of protein causes variations in milk composition. More energy is needed to produce milk at the end of a lactation although the fat and protein contents are higher at this time. Low roughage depresses the fat content of the milk. If the protein content of the silage is low the energy intake is often low and so is RDP. To increase the protein in the milk the cereal content of the diet should be increased. Donald finally recommended that a 70D silage should be the aim.

G E D Tiley

CSGS SILAGE COMPETITION 1991-92

*A meeting of the CSGS at the Stuart Hotel, East Kilbride on
8 January 1992*

Judge: Alec Irving, Largs, Twynholm, Kirkcudbright

In the first part of this meeting the results of the HF Seeds Silage Competition were announced and the prizes were presented. The latter part of the evening was taken up with a talk by Colin Bayes of the Forth River Purification Board on the important subject of pollution concentrating on the new laws governing pollution control.

Silage competition

The Chairman Tom Brown thanked HF Seeds for sponsoring the Silage Competition and introduced the judge Alec Irving. Alec has been successful in several silage competitions and farms 101 ha on which he has 150 dairy cows mainly Holsteins.

The judge recalled two hectic days of judging starting at Kaemuir, Avonbridge where George Orr set a very high standard. On some farms effluent control was not perfect but steps were being taken on most to rectify the problems. Side sheeting could be improved on some farms, while others had more shoulder waste than desirable. Alec extolled the virtues of sheer grabs and block cutters to avoid the entry of air which occurred where mechanical shovels were used.

On his own farm in 1990 the judge had tried an expensive acid-based additive which was not worth the money. In 1991 he used an inoculant, molasses and beet pulp on three separate pits. The inoculant pit was slightly superior, but the pH was low at 3.8. In addition to silage some caustic-soda treated straw is fed. The average milk yield from the dairy herd at Largs is 7000 l per cow or 2784 l per ha. The concentrate input is 1.4 t per cow and the margin over purchased feed is £1174 per cow. Cows generally receive 6 kg of a home-mix containing 40% caustic-soda treated straw plus soya and fishmeal.

Table 1. Final marks for analysis and for placing by the judge

	Production &			Total (100)
	Analysis (35)	Inspection (33)	Utilization (32)	
J Kerr & Sons, Kirklands, Dunsyre	33.16	27.0	26.5	86.66
G Orr, Kaemuir, Avonbridge	32.40	27.0	23.5	82.90
M Robb, Carroglen, Comrie	29.28	28.0	25.0	82.28
W K Carruthers, Netherton, Auchenheath	31.28	25.0	24.0	80.28
R Millar, Newlands, Uddingston	28.98	25.0	26.0	79.98
L Watson, Midhill, Biggar	29.35	25.5	24.0	78.85
R Howie, Drumfork, Helensburgh	31.68	25.0	22.0	78.68
G Lyon, Auchavoulaig, Rothsay	29.68	24.5	23.0	77.18
Ben Challum Ltd, Woodburn, Crieff	29.47	22.5	23.0	74.97
C Murray, Inchbelle, Kirkintilloch	30.48	24.0	20.0	74.48
D Cameron Ferneyfold, Crieff	23.94	26.0	23.0	72.94
R Reid, Glen, Falkirk	29.60	22.0	21.0	72.60

Prizewinners

The marks for the top entrants are shown in Table 1. J Kerr and Sons, Kirklands, Dunsyre were the overall winners in this year's Competition and were presented with the HF Seeds Cup. For the second year running G Orr, Kaemuir, Avonbridge won the second prize and W K Carruthers, Netherton, Auchenheth the third prize. Fourth prizewinner was R Millar, Newlands, Uddingston.

In the Beef and Sheep Class the winner of the first prize and the Hamilton Reco Salver was M Robb, Carroglen, Comrie. Ben Challum Ltd, Woodburn, Crieff won the prize for the Best Big Bale. The prize for the best new entrant was awarded to D Cameron, Ferneyfold, Madderty, Crieff.

Pollution control

After the presentation of the Silage Competition prizes Colin Bayes spoke on the new laws governing pollution control. He began by showing a table of the numbers of pollution incidents caused by agriculture in the area covered by the Forth River Purification Board from 1986-1990. This table is reproduced below :-

	1986	1987	1988	1989	1990
Silage effluent	16	32	28	11	18
Dung & slurry	17	10	9	11	8
Livestock & housing	13	13	21	17	9
Land runoff	5	8	1	10	8
Farm tips	4	2	-	1	1
Dairy	8	3	5	8	3
Chemicals & fertilizers	2	10	9	5	3
Oil	2	-	2	9	6
Others	70	79	75	75	61

Although silage is a very strong pollutant, pollution caused by sheep dips is becoming much more important since this can cause major problems over a wide area.

The Control of Pollution Act can be stated simply as "Thou must not pollute". If pollution occurs then it is your fault. The new regulations of 1991 deal with how to prevent pollution by setting standards which apply to all new constructions and concern (1) silage making; (2) slurry

storage; and (3) fuel oil storage where the store contains more than 1250 l.

Structures which were in existence or completed before 1 September 1991 are exempt unless a pollution incident occurs. If this happens then the whole farm system will be examined in the light of the new regulations. This might result in a great deal of money having to be spent to bring existing structures and systems up to the standards required by the 1991 act. It is, therefore, extremely important to avoid any pollution.

Another instance where existing structures can lose their exempt status is if modifications in excess of 10% are made, eg. a silage pit is extended by 10% or more. Such extensions would result in the whole farm system for slurry and silage effluent, etc. being re-examined.

Mr Bayes listed some of the criteria regarding silage making in the new regulations. Tower silos are unaffected since they already meet BS5061. Field heaps are now prohibited. The structure of a clamp or pit should be impermeable and corrosion resistant, and should meet load requirements. The base and walls must have channels and pipes leading to an effluent tank. The pit should have a life of 20 years with maintenance. Earth walled pits must be lined with high specification sheeting, and the structure must be sited more than 10 m from controlled waters.

Silage pits with a capacity of less than 1500 m³ must have effluent storage of 3 m³ for every 150 m³ of the pit. Where the pit is greater than or equal to 1500 m³ the effluent storage required is 30 m³ plus 1 m³ for every 150 m³ of the pit.

Baled and bagged silage should be stored and opened at least 10 m from ditches, drains, etc. This also applies to bulk-bagged silage such as Ag Bags. In addition, the local river purification board requires 30 days prior notification where Ag Bags are to be used.

Regarding slurry storage new systems must be corrosion resistant, have a 20 year life and be maintained. Such systems must also meet structural loading criteria and be sited at least 10 m from drains, etc. Reception transfer tanks must have 2 days storage.

Notice of new slurry stores, silage pits, etc. must be given to the local river purification board at least 30 days before a new structure is

used. However, it would be much more sensible to consult the board at the planning stage before any work is done.

When a pollution incident is caused by an exempt structure a notice is served by the river purification board on the person having custody or control that remedial work must be carried out within 28 days. Failure to comply with the notice results in the farm losing its exempt status. The notice may be appealed against within 28 days to the Secretary of State. The maximum penalties are now £20,000 or 3 months imprisonment.

C McCombie

PLANT LIFE IN AYRSHIRE

A new monograph published in April 1992 by the Ayrshire Archaeological and Natural History Society will be of considerable interest to members of the South West Society, particularly those involved in environmental conservation projects. "**Plant Life in Ayrshire**" was written for the AANHS by Dr Ralph Kirkwood of Strathclyde University and illustrated by a local artist, Miss Margaret Foulds. It is a most unusual plant handbook because it describes not only where many interesting species can be found but links the rock, the soil and the water table to the plant life and to the livestock which feeds upon it. There are eighteen beautiful plates in the booklet, and eight of these are in full colour.

This highly recommended publication can be obtained for £4.20 (post paid) from the AANHS Publication Distribution Manager, Ronald W Brash MA, 10 Robsland Avenue, Ayr, KA7 2RW. It is also available from most Ayr book shops.

ULSTER GRASSLAND MANAGEMENT COMPETITION

The 1991/92 grassland management competition run jointly by the Ulster Grassland Society and the Fermanagh Grassland Club was won by Robert Ingram who farms 42 ha near Rathfriland, Co Down. The main enterprise on his farm is a spring-calving dairy herd, and he rears all calves as replacements or for beef. The herd is strip grazed, and emphasis is placed on producing high quality silage. Three cuts are taken with the first in the second half of May. The grass is wilted to reduce effluent problems.

Silage effluent is directed via a collecting channel into a separate catchment tank. A second tank was recently constructed to cover emergencies such as overflows or leakages. Milking parlour washings and 'dirty' yard water are collected and diverted into the main slurry tank. Clean run-off is discharged directly into the drains.

Hedgerows need to be positively managed if they are to remain effective stockproof barriers and provide shelter for livestock. Mr Ingram believes that a cutting cycle of once every 3 years is less severe on the hedge while at the same time ensuring food and shelter for wildlife. 2000 m of hedges which have become open in the bottom have been fenced off to prevent further damage from stock.

Nearly 3 ha of trees have been planted under the Forest Service Farm Woodland Grant Scheme over the last 4 years. The first area to be planted was low-lying and had been infilled with rubble. Most of the original planting of Sitka Spruce died in the first year, but a replanting of alder, willow and birch has been successful. Other areas of new woodland are predominantly oak with some beech, chestnut, rowan and birch. All the broad leaved species are planted in tree shelters as rabbit damage is a major problem.

Mr Ingram's philosophy is that, with a little planning, the challenge of caring for the countryside can be part and parcel of a successful farming business, and in the main can be accomplished at relatively low cost. His positive attitude towards the countryside has earned him the well-deserved title of Countryside Manager of the Year.

SWSGS SILAGE COMPETITION 1991-92

*A meeting of the SWSGS in the Urr Valley Country House Hotel,
Castle Douglas on 16 January 1992*

Judge: John N. Watson, Mill Eilers, Dalston, Cumbria

The 1991-92 Competition Night was once again generously sponsored by the Bank of Scotland represented by Mr Bill Scott of the Castle Douglas branch. Chairman James Forrest introduced John Watson who was the judge for this the 19th Silage Competition, and was the first to suggest this competition to the Society about 20 years ago. John retired from the post of Farm Manager at the Hannah Research Institute in 1990, and is a founder member and past Chairman of the Society. He was elected an Honorary Vice-President and Life Member in 1989 for his services to the Society, and has judged many silage competitions. The Chairman said that the Society was particularly fortunate to have John as judge this year when standards were so high. The intensity of the contest became clear when a 76D silage failed to reach the top ten.

John thanked the Society for inviting him to judge the Competition, and the farmers and wives for their hospitality. He had enjoyed the job, particularly being the first judge to travel to the Isle of Arran to inspect a farm on the short list, though he was glad it was a calm day. It was incredible to see how the standards of the short-listed farms had increased from just 5 to 10 years ago. Twenty five of the thirty three silages entered had a D value over 70. He was amazed how many of the farmers could quote all the figures he requested.

Every one of the farms visited received full marks for effluent control. Only two were self feeding, which surprised John because it is obviously cheaper to take the cows to the silage than vice versa. One of the self-feed silos was 25 years old, the brick walls of which were built in person by Mr Barr of that well-known company.

It was interesting to see how many other feeds were now being fed in association with silage. A prominent example was whole-crop silage. The feeding of silage effluent also appeared to be catching on following Michael Milligan's example. Silage faces had much improved

Table 1 Short list for judge's visit (in order of analysis)

		Analyses (35)	Marks Inspection (65)	Total
Dairy Class				
Milligan Prize	J Caldwell Baltersan, Maybole	32.26	48.00	80.26
2nd	J & J McColm Cairngarroch, Drummore	31.07	56.00	87.07
1st and Rosebowl	R J R Ramsay Lodge of Kelton, Castle Douglas	30.85	61.00	91.85
	A & A Reid Clauchlands, Lamlash	30.48	53.00	83.48
3rd	A & I Irving Largs, Twynholm	30.33	56.00	86.33
	A & W McWilliam Colfin, Lochans, Stranraer	29.80	51.00	80.80
	B Ramage, Several, Drummore	29.79	46.00	75.79
	R I R Evans Penkiln, Garlieston	29.68	35.00	64.68
	J S Vos Coopon Carse, Palnure	26.98	38.00	64.98
Beef/Sheep Class				
1st and BP Trophy	H McKeever Hillhead, Tarbolton	29.27	55.00	84.27
	J Cummack Killymingan, Kirkgunzeon	26.89	50.00	76.89
	H R & C Dalrymple Crailoch, Ballantrae	19.94	48.00	67.94
Best Big Bale Entry				
	W Shuttleworth Foremannoch, Dumfries	26.41	N/A	N/A

doubtless due to the shear grabs now used by many farmers.

Table 1 shows the marks awarded to the entries on the Judge's short list. The first prize in the Dairy Class was awarded to Robert Ramsay, Lodge of Kelton, Castle Douglas, who was also overall champion and winner of the Silver Rosebowl. J & J McColm, Cairngarroch, Drummore were the second prizewinners in the Dairy Class, and the third prize went for the second year in a row to A & I Irving, Largs, Twynholm.

Harold McKeever, Hillhead, Tarbolton was awarded the first prize in the Beef/Sheep Class, and received the BP Nutrition Trophy. The Best Big Bale prizewinner was again W Shuttleworth, Foremannoch, Dumfries.

J Caldwell, Baltersan Mains, Maybole received the Michael Milligan Prize for attention to detail. The best new entrant prize was awarded to A & A Reid, Clauchlands, Lamblash, the first entrants from the Isle of Arran to reach the short list in the Competition.

The prizes for the best silages (on analysis marks only) in the four counties were awarded to J Caldwell, Baltersan, Maybole for Ayrshire, J Forrest, Meinfoot, Ecclefechan for Dumfries for the second year, R J R Ramsay, Lodge of Kelton, Castle Douglas for Kirkcudbright, and J & J McColm, Cairngarroch, Drummore for Wigtown also for the second year.

The Society are indebted to Plasti-Covers Ltd for the cash tokens which were awarded to the first and second prize winners in the Dairy Class, to the first prize winner in the Beef/Sheep Class, and to the Big Bale winner. Instead of the pewter tankards presented in previous years this year's winners received crystal glasses engraved in Mauchline.

A D Grant: Silage Quality and Additive Use 1991

A summary of the analyses of the silages in the last 5 years is given in Table 2. The quality of the silages in the Competition continues to increase with the D values of over three-quarters of the entries exceeding 70 in 1991. There was a particularly marked increase in the "super" category, and for the fourth year none was classified in the "poor" category. The average dry matter content of the silages has been almost constant over the 5 years, and the ammonia content continues to decrease. Following the large decrease in the number of entries in 1990 a further slight fall was noted in 1991. Sandy

suggested that this might be due to the general run of silage makers being discouraged from entering by the increasing occurrence of "super" silages. Perhaps they are waiting until they can attain the top bracket before entering.

Table 2 Silage Quality 1987-91

Quality	D-Value	% of total in each group				
		1987	1988	1989	1990	1991
Super	> 75	3	3	5	8	18
Very good	70 - 75	30	35	55	53	58
Good	65 - 70	31	42	29	34	18
Medium	57 - 65	34	20	11	5	6
Poor	< 57	2	0	0	0	0
Mean DM%		22	22	23	22	22
Mean Ammonia N (% of total N)		9	8	8	8	5
No. of entries		64	66	73	38	33

The average dry-matter content of the 33 entries in the Competition (omitting the big bale silages) was slightly higher than that of the 2400 silages analysed by the Scottish Agricultural College in 1991; the average D value of the Competition silages was about eight units higher with mean ME values of 11.6 and 10.2 respectively. In addition, the Competition silages had a much lower average ammonia content.

The range of additives used on the silages in the 1990 and 1991 competitions is shown in Table 3. Because of the small number of entries in the Beef/Sheep Class the data for the two classes have been combined. Once again the proportion of untreated silages had decreased - from 24% in 1990 to 18% in 1991 - a further indication that only the top silage makers are entering the competition. In comparison, almost 80% of the 2400 samples analysed by SAC in 1991 received no additive. Acid-additive use remained fairly constant at 27% against 26% in 1990, but two additives relatively common among the SAC samples - Add-F and Maxgrass - did not appear among the Competition entries. Few of the Competition silages received enzyme additives, and this was true also of the SAC samples. Inoculants were obviously the preferred additives both in the Competition entries and in the SAC samples, with Ecosyl at the top of the list. Sandy concluded by querying the need for an additive when

one of the top quality silages in the Competition, with a D value of nearly 78 and an ME of 12.4, was made without an additive.

Table 3 Additive Use 1990 and 1991

Type	Additive	1990 (38 entries)	1991 (33 entries)
Acid	Add-SaFe	3	3
	Add-F	1	-
	Sulphuric	3	3
	Grasafe	1	3
	Maxgrass	2	-
	Total	10	9
Absorbent	Sugar beet pulp	-	1
	Total	-	1
Enzyme	Axis D780	2	-
	Total	2	-
Inoculant	Axphast	-	3
	Ecosyle	4	4
	Super Sile Plus	4	-
	Bio-Ferm	2	3
	Downland Safe-Sile 4	1	-
	Diamond Triplesile-Plus	1	-
	Silaction	-	1
	Microsile 2000	-	1
	Unnamed inoculant	5	5
Total	17	17	
None		9	6

Discussion

The Competition Night concluded with a discussion in which the panel consisted of the Silage Judge John Watson and all the prizewinners. The first questioner asked if the elimination of one particular factor could ensure top quality silage which one would it be. Robert Ramsay claimed that the weather was not the greatest difficulty. Although growing conditions had not been particularly good in 1991 he still had the best grass for 40 years. His main difficulty was getting the

contractor in to cut at the right time, and this was the main factor in making a top quality silage.

Sandy Grant claimed that the recent change in the method of analysing silage used by SAC had not affected the categories in his table of silage quality. The NIR technique followed on from earlier methods and simply speeded up the process. The most important factor determining the number of silages in the top categories is the much earlier date of cutting nowadays than was common 10 years ago. In addition, the heading dates of species now in use are probably 10 days later than 15 years ago. The combined effects of these two factors have greatly improved silage quality. Michael Milligan suggested that the NIR method increased D values by 2-3 units, and the Chairman claimed that analyses done by commercial firms gave D values of 3-4 units less. However, Sandy pointed out that these commercial laboratories base their analyses on the MAD-Fibre technique which gives poorer repeatability than the NIR method.

In answer to a plea for silage analysis results to be presented in a clearer fashion, the panel agreed that the report form was difficult to interpret particularly with the results stated as g/kg rather than percentages. However, Sandy Grant said that the g/kg format is internationally recognised, and is readily converted to percentages.

Shoulder waste on silos received much attention. John Watson believed that this was still a big problem, particularly on open silos where it was very difficult to keep the water out. The use of sand bags along the sides of the silo was generally agreed to be the best solution. Polypropylene bags were unsuitable because the stitching rotted away on the underside. Plastic fertilizer bags were preferable and being shorter were much better than sleepers. The importance of prompt sheeting of the silo and careful checking of air sealing was stressed.

In proposing the vote of thanks Iain Evans said that the Society was fortunate to have had John Watson as the Silage Judge. His job had been particularly difficult in this year of so many good silages, and John deserved the grateful thanks of the Society. Thanks were offered to the Bank of Scotland and to Bill Scott of the Castle Douglas branch for sponsorship, and to the Secretary Gordon Tiley and SAC for help in organising the competitions. Iain also thanked Dalgety Agriculture, Dumfries who donated $\frac{1}{2}$ tonne of Kemira fertilizer, which was won in a free raffle of the silage entrants by W Shuttleworth, the Big Bale winner.

D. Reid



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SCOTTISH REGIONAL SILAGE COMPETITION

SWSGS silage champions for 1991-92 R Ramsay & Son, Lodge of Kelton, Castle Douglas are to be congratulated for taking first prize in the Scottish Regional Silage Competition against stiff opposition. John MacClusky, who was Judge of the Regional Competition paid a special visit to the Society's meeting at Dumfries on 20 February 1992 to present the cup to Robert Ramsay. The Judge said that all farms on the short list were dairy farms, but the factors which won the Competition for the Ramsays were high efficiency and high milk yields from grass. The Ramsay family, father and son James, are the latest in a long tradition of good silage making. Robert's great-grandfather was one of the first farmers in Scotland to make silage in the 19th century.

Robert's winning silage was direct cut about 20 May, and although not high in dry matter it produced a lot of milk with the cows eating over 60 kg per head. The silage was fed through a diet wagon fitted with load cells so the amount the cows were eating could be measured. In late January there was still enough silage left to last the winter.

As winners of the Scottish Regional Competition the Ramsays went on to the BGS National Silage Competition where they were competing against the winners from the eight other regions of the UK, i.e. the top grassland farmers from Cumbria to the Isle of Wight. When the results were announced at the Farmers' Club in London on 13 March 1992 this family partnership from Castle Douglas were worthy runners-up to F Hormann & Company, Fan Farm, Myddfai, Llandovery. The Hormanns have two enterprises on their farm in Wales - a suckler herd, housed in cubicles, and a sheep flock, all fed on high quality silage.

The sponsors of this Competition are now Kemira Fertilisers who provided the new Kemira Star Trophy which was presented to David Hormann. Robert Ramsay received a prize of 3 tonnes of Kemira fertilizer. The National Competition is run by the British Grassland Society in conjunction with ADAS and SAC.

GRASSLAND ENVIROMENTAL COMPETITION

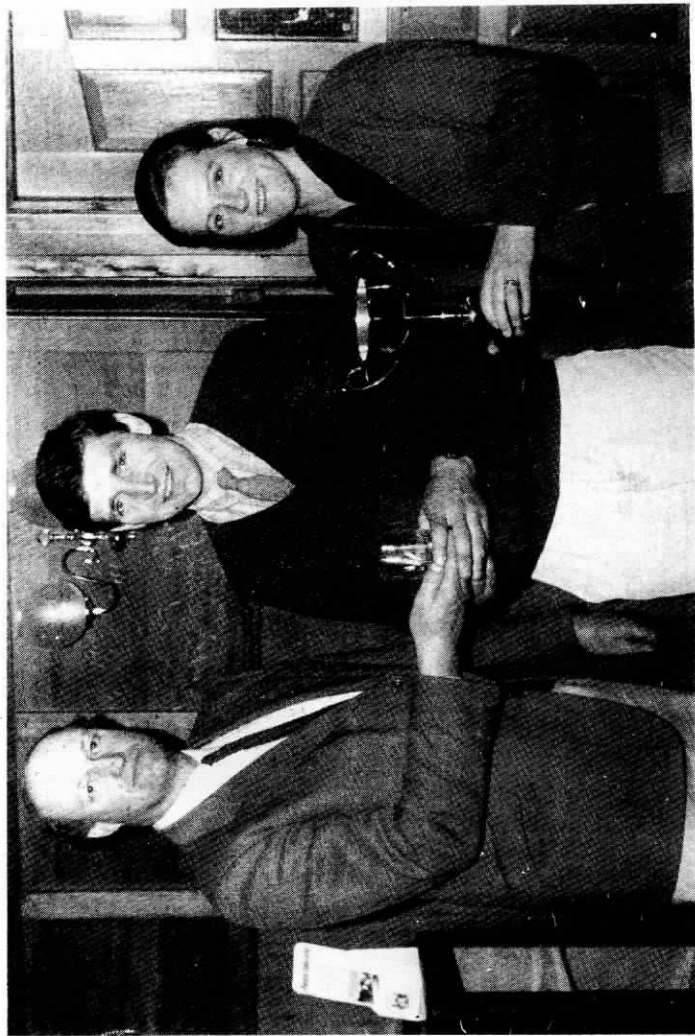
SOUTH WEST SCOTLAND 1991

The results of the SWSGS 1991 Grassland Environmental Competition were announced at the Competition Night held in Castle Douglas on 16 January 1992. Winner of the first prize and the new Forum Feeds Environmental Trophy was Andrew Gladstone, Craichlaw Mains and Barhoise Farm, Kirkcowan, Newton Stewart. Runnerup was S & E Burnside & Son, Barr Farm, Crocketford Road, Dumfries. Others who entered the Competition were A S Crichton, Auchenloss, Kirkgunzeon and J Mackie, Dalfibble, Parkgate.

All entrants had carried out significant conservation measures, in particular, planting hedges and woodlands and repairing dykes, but in relation to the individual farm system and within the context of a sound commercial basis. However, the Trophy is awarded for the best balance between farming practice and conservation, and this was narrowly awarded to Andrew Gladstone. The judges, Andrew Campbell and Denise Reid, reported that the entries were very difficult to separate. Sympathy and appreciation of nature conservation requirements were particular features sought. A summary of the main features on each farm is given below.

Barr Farm Dairy farm in a difficult area. New hedges, field corners and native trees planted with consideration of wild life corridors. Protection of wetland; recognition of old grassland with appropriate management. Consideration for nesting sites and requirements of birds. Improvements planned for slurry and effluent disposal.

Craichlaw Mains An effectively run beef/sheep enterprise. Extensive planting of new woodland, and protection and management of existing woods. Dykes rebuilt and roadside tree line planted. Construction of several ponds. Recognition and appropriate grazing management of an area of old grassland and wild-flower meadow containing five orchid species. Slurry storage system planned; repairs and conservation of old vernacular buildings.



Andrew Campbell (left) presents the second prize in the SWSGS Environmental Competition to John Burnside, Barr Farm. Co-judge Denise Reid (right) is holding the Forum Feeds Environmental Trophy won by A. Gladstone, Craichlaw Mains.



Forum Feeds Environmental Trophy

Dalfibble Efficient dairy farm with good woodlands. Conservation methods being introduced. Hard and soft wood replanted and commercially managed. Improvements to river banks. Clover swards introduced to reduce nitrogen fertilizer usage.

Auchenloss Traditional hill farm with all stock out wintered, and an extensive summer management maintaining native vegetation. Low fertilizer input and no sprays used. Dykes rebuilt and hedges cut with broad base (A shape). Trees planted in corners and to regenerate old woods. Pond area protected from stock.

The judges felt that the Grassland Society had taken a great step forward by introducing the Competition. It was difficult to estimate the importance of the contributions to wild life, nature conservation and the countryside environment which entrants to the Competition were each making in their different ways. Denise Reid of the Nature Conservancy Council thanked the farmers for making her feel welcome, instead of the more usual suspicion! She was impressed with the constructive and forward looking attitudes on farms. There was a willingness to find out what natural features were already available for conservation, eg. old grassland, dykes, hedgerows and wetland. It was much easier and cheaper to manage these sympathetically than to try to create new features, eg. woodland or ponds.

G E D Tiley

CENTRAL SCOTLAND GRASSLAND SOCIETY

14th ANNUAL SILAGE COMPETITION 1992-93

The 14th Annual Silage Competition of the Central Society will be run in 1992-93 with the same prizes as in previous years. The rules for the Competition will be circulated to members with the entry forms.

GRASS SEEDS FIRMS

G E D Tiley, C McCombie & D Reid

In recent years several long established and well-known seeds firms have been variously merged, taken over or changed location. Traditional and personal contacts have been thrust into the melting pot and not a little confusion and frustration created. The situation may well not be fully stabilized but it was felt that it would be useful to set out a list of current suppliers in south west and central Scotland to provide an up-to-date guide for grassland farmers.

Information was provided directly by each company, and it is believed to be correct at the time of going to press. No responsibility can be accepted for any inaccuracy. Inclusion of a company's name does not connote any form of commercial approval of its products, nor does exclusion of any company denote disapproval as some companies did not respond to our enquiries.

The need to purchase good grass seed

In a 66-year old catalogue published by the Ayr seeds merchants, McGill & Smith (dated 1926, price 1 shilling) there were reprinted facsimile pages from two historic agricultural books. The first was from '**Agriculture in Ayrshire**' by Col Fullerton, which was published in 1793. The page begins "*Much improvement might also be made for the purpose of pasture by proper attention to cultivate the most valuable meadow grasses, such as timothy, fescue, plantain and many others suited to the different soils. The pasture in this country, however, is growing richer and better every day. White clover grows spontaneously. The ground has a natural tendency to the production of grass and there is little doubt of its rivalling the best closes of Cheshire or of Yorkshire, as soon as the land is dry.*"

The second facsimile page is from '**British Grasses**' by William Curtis, 1805: "*That much of our meadow and pasture land may be rendered infinitely more valuable than it is at present, by the introduction of some of our best grasses, is an opinion which has long prevailed among many of the more enlightened agriculturists of the present age.*"

Elsewhere in the catalogue is written: *"It behoves us all to seek out newer and better varieties of grasses and clovers and put these in trial against the standard varieties."*

These statements are as true today as when they were written. There is no doubt that the basis of all good grassland is sowing high quality seeds of the best varieties. We are fortunate in Scotland to be able to depend on years of variety testing by the Scottish Agricultural College (now SAC), who have systematically and carefully tested countless varieties over a wide range of conditions. The fruits of all this labour appear in the SAC Recommended Lists of varieties which are revised annually. The new SAC Seed Scheme ensures that participating merchants have access to these results. With few exceptions all those in the following list are members of this Scheme.

A F Scotland Ltd was formerly WCF, Scottish Supplies Division and became part of A F Scotland in 1990. This is a marketing and management company owned by farmers, which supplies fertilizers, herbage seeds and seed grain, and are also seed growers. The firm has its own range of seeds mixtures formulated from highly recommended varieties using certified HVS (Higher Voluntary Standard) quality seed all treated with 'Suregrow' seed dressing (Benlate and Cytozyme). Mixtures include Farmogen, a multipurpose long term ley Scottish Intogen, a medium term ley for high yield silage and Jumbogen, a long term mixture which can be used for silage then grazed later. Being a cooperative firm, the primary aim is to market a quality range of products and services with efficient use of resources for the benefit of both customers and shareholders. The need to maintain quality and to respond to changes within the agricultural industry is constantly recognised.

J Bibby Agriculture Ltd was founded by a Derby family in 1877 and became part of the Bibby Group in 1983. Besides herbage seeds, feeds and silage additives are sold. There are five key herbage seeds mixtures ranging from intensive lowland to hill upland, including the general purpose Blue Riband mixture. Varieties with the highest merit and winter hardiness ratings are used. Special mixtures can be supplied. The company is backed by good technical field support and servicing.

BOCM Pauls was formerly BOCM Silcocks Ltd, which was a subsidiary with UAM Ltd of Unilever plc, and was recently sold to Harrisons & Crosfield plc. The company sell animal feed compounds, and operate

the 'Sializer' system for silage analysis. Green Label herbage seeds are marketed, comprising seven mixtures for Scotland. These range from short to long term for cutting and grazing, and use the latest top rated varieties.

James Borland & Sons Ltd is an old established local Ayrshire firm, founded in 1750, which serves central and western Scotland. As well as grass seeds, the company deals in feeds, fertilizers, chemicals and grain seed. At Kilmarnock there are facilities to make up grass seeds mixtures quickly to customer requirements. It is an independent company not tied to any one wholesale seed house, and can, therefore, select the best current varieties, and change to new varieties whenever these are recommended. HVS standard seed is used, and complete control of quality is assured by own mixing. Amenity mixtures can also be supplied.

British Seed Houses. David Bell Ltd are the Scottish and northern England branch of British Seed Houses, which are members of Germinal Holdings - one of the largest privately owned UK seed suppliers. A full range of grass seeds mixtures or pure varieties can be supplied. Amenity and wild flower mixtures are specialities.

Central Farmers Ltd is a farmers' cooperative serving central Scotland and supplying a range of agricultural and horticultural goods including grass seeds. 'Novogen' grass seeds mixtures are sold, all incorporating varieties which are highly rated by SAC.

Dalgety Agriculture has taken over small local companies such as RHM Agriculture and McQuater Bros, and trade in animal feeds, fertilizers, agrochemicals, grain, and cereal and grass seeds. A range of standard grass seeds mixtures are sold to suit all requirements, including a facility to mix for individual needs. All mixtures are certified to HVS standard.

John Dun & Co Ltd was founded in 1821 by the great-great-great grandfather of the present managing director, and claims to be one of the oldest seeds merchants in the world. It is associated with Campbell's Seeds. The company trades only in seeds and specialises in grass, root, fodder, game cover and combinable crop seeds. Considerable research has been carried out, in association with SAC, on the components of grass seeds mixtures and also on the benefits of white clover. Mixtures are available in two groups: (1) Specialised Systems Mixtures (SSM) where predictable control of grass production and nutritive quality are desired,

Directory of grass seeds firms

Company	Telephone	Fax	Personnel
A F Scotland Ltd Biggar Mill Dalbeattie DG5 4BD	0556 610414	611066	D Beaton I Lawrie I Scott L Hay
J Bibby Agriculture Ltd Abercrombie Road Industrial Park Castle Douglas DG7	0556 2303	2459	S Burrows A Callaghan G Hyslop H McTier W Thorburn
BOCM Pauls Wright Street Renfrew, PA4 8AH	041 887 1288 Freephone 0800 424200	3835	G McCaig
James Borland & Sons Ltd New Mill Road Kilmarnock KA1 3BZ	0563 22494		J D Borland
British Seed Houses c/o David Bell Ltd Eastfield Drive Penicuik EH26 8HB	0968 678480	678878	M Shannon
Central Farmers Ltd Aberhill Works Methil, Fife KY8 3AA	0333 426194	427902	R Milne
Dalgety Agriculture Scotstoun Mill Partick Bridge Street Glasgow (Branches at Stranraer, Dumfries, Baldoon, and Maybole)	041 334 9661		J McGarvey D Robson R Graham M Hastings M Landsburgh

Directory of grass seeds firms (continued)

Company	Telephone	Fax	Personnel
John Dun & Co Ltd Tweedbank Industrial Estate Galashiels, TD1 3RS	0896 2131 57207	50607	J Fleming C Campbell J Scott G Pitcaithly
Glenside Organics Ltd Block 2, Unit 4 Bandeath Industrial Estate Stirling, FK7 7XY	0786 816655	816100	N Robertson
HF Seeds Ltd Imperial Dock Leith Docks Edinburgh, EH6 7DR	031 555 4044	4035	I Watson C Totten
Horizon/Finney/Lock Horizon Seeds Ltd 8 Caistor Road Laceby, Grimsby DN37 7HY	0472 750101	879096	M Fort D Butterfield M Fort
McCaskie Farm Supplies Cunningham Road Springkerse Industrial Estate Stirling, FK7 7SW	0786 74481	64099	A Rettie M Murray S Johnston
Peter Macfarlane Stirling Enterprise Park John Player Building Springbank Road Stirling FK7 7RP	0786 62022 64528		P Macfarlane
McGill & Smith (Seeds) Ltd 35 Kildoon Drive Maybole KA19 8AZ	0655 83680	83680	R McHaffie G Rae L Ker

Directory of grass seeds firms (continued)

Company	Telephone	Fax	Personnel
Ross Muirhead & Co Unit 1/2 Kildean Market Stirling & Menstrie Mains Menstrie, Clackmannan	0786 61597		A Muirhead
Nickerson Seeds Ltd J N R C Rothwell Lincoln, LN7 6DT	0472 371471		P Sansom 0768 86652
Rickerby Ltd Carnegie Street Dumfries Head Office: Currock Road Carlisle CA2 4AU	0387 53328	59355	P Scott C Robb
	0228 27521	24402	S Sloan
Seedsource Fertiliser Works Newton Shore Weir Road, Ayr	0292 263271		A Ferguson
A & T Simpson 48 Whitesands	0387 52849		I Armstrong N Armstrong
Dumfries DG1 2RS			B Dickie M Dickie
Sinclair McGill Seeds Ltd Sleaford Lincolnshire NG34 7HA	0529 304511	303908	P Peck
L S Smellie & Sons Ltd Hamilton House Station Road Strathaven, ML10 6EU	0357 20211		R Anderson

Directory of grass seeds firms (continued)

Company	Telephone	Fax	Personnel
Soil Fertility Dunns Ltd Highfield Factory St Quivox Ayr, KA6 5HH	0292 70521	671614	
South West Seeds 34 Glenalla Crescent Doonbank, Ayr	0292 41381		A Begg S Bryson
Watsons Seeds Sandhurst 23 Monument Road Ayr, KA7 2RL	0292 263360		J Watson

(2) Commercial Systems Mixtures (CSM) where management may vary from year to year and a greater flexibility is required. A range of mixtures for normal requirements is available, plus special mixtures for horses, sows and set aside.

Glenside Organics Ltd are specialists in natural fertilizers and seaweed products for organic production. The recently introduced Glenside Fertility Ley mixtures include a traditional Clifton Park and other mixtures, which contain standard varieties together with additional grasses, legumes and herbs. The mixtures are designed to be self sustaining with minimum fertilizer input.

HF Seeds Ltd was formed in 1991 following a management buyout of the grass and fodder crop seed business of SAI plc. HF seeds were for many years marketed by SAI. Distribution is now through local bases in Renfrew (see Seedsources), Dundee, Dalkeith and Carlisle. The 'HF' brand of herbage seeds embraces total quality and technical excellence, with an emphasis on high seed purity (above HVS) and quality. Mixtures are chosen to suit the purpose intended and special mixtures can be formulated for individual requirements. In a unique process every bag of seeds is mixed individually to guarantee the correct proportions, and treated with 'Apron T' seed dressing.

Horizon Seeds Ltd was founded in 1981, and Horizon/Finney/Lock was formed in 1987 by the acquisition of Finney Lock Seeds which dates back to 1734. The company specialises in all types of agricultural, horticultural and amenity seeds, and was a founder member of the NIAB and SAC seed schemes. 'Triumph Ley' is the brand name of the seeds mixtures, which are formulated on the 67D principle to ensure high quality forage, with emphasis on mid-season digestibility, persistence and yield. The aim is to supply only top quality seeds of first class varieties, and the mixtures do not include any other varieties as 'fillers'. Key varieties in the mixtures include Profit, Merlinda, Jumbo, Condesa and Ensign white clover blend.

McCaskie Farm Supplies was founded in 1957, and market a wide range of agricultural supplies for dairy farming, animal health, feeds and pollution control. Four main mixtures in the Downland Leys range from Mommersteeg are sold, including silage, grazing with tetraploids, long-term sheep/cattle and traditional sheep grazing. All seeds receive the biological treatment 'Headstart'.

P Macfarlane is a small local firm founded in 1974, and specialising in grass, clover and root seeds. A speciality of this firm is the processing of Scot timothy seeds produced by the Scots Timothy Seed Growers Association, but all other species and varieties are also handled.

McGill & Smith (Seeds) Ltd is an old Ayrshire trading name which was purchased from ICI Seeds in 1992 (see Sinclair McGill), and has been re-established to supply grass seeds and agro-chemicals in west and south-west Scotland. The company distributes the 'Sinclair McGill' range of grass seeds mixtures, thus continuing the tradition established by that company. All mixtures are to HVS standards or above, and are designed for different management systems, with emphasis on quality and adaptability to the customer.

Ross Muirhead & Co is a local farm-based company serving central and southern Scotland, and selling a full range of seeds mixtures for farm, amenity and conservation, including wild flower mixes. All seeds used in the mixtures are top quality.

Nickersons Seeds Ltd is a UK company with a long-established reputation of specialising in agricultural seeds. The company has recently been reorganised to improve efficiency and meet customer needs. Specialised advice is offered on grass production and

utilization. There is a network of trained specialist agents who believe in success through service and partnership for profitability, identifying requirements and supplying the correct products. Under the brand name 'Circle Ley', a range of seeds mixtures is provided for short, medium and long term use in grazing, conservation or both. Nickersons were responsible for introducing well-known DSV/RVP leading varieties, such as RVP Italian, Melle, Melta and Merlinda.

Rickerby Ltd was derived from a family business founded in Cumbria in 1880, with a branch in Dumfries. Grass seeds, cereal and forage seeds, crop protection products and additives are sold. Rickerby 'Greenfield Leys' consist of eight basic seeds mixtures ranging from short term to hill. One mixture, 'Greensward', is designed for long term conservation cutting. The best SAC and NIAB recommended varieties are used, and emphasis is placed on quality of seeds, mixtures, variety choice and customer support.

Seedsource was started in 1981, and is a subsidiary of Bowie & Aram in Renfrew. Seed grain, forage and lawn seed and agrochemicals are sold. The firm is the local distributor for HF Seeds (qv), with basic general purpose, grazing, conservation and permanent mixtures. All varieties are highly rated by SAC with seed certified at HVS standard.

A & T Simpson is an old established firm derived from T & R Carlyle, Waterbeck, which was founded in 1792. Seeds and agrochemicals are sold in southern Scotland and northern England. The highest rated varieties are used in simple or complex mixtures, which can be tailored to individual requirements.

Sinclair McGill Seeds Ltd is a well known local seeds firm formerly based in Ayr and derived from the original firm of McGill & Smith Ltd, who first traded in the early years of this century. Sinclair McGill were latterly taken over by SAI, then ICI, who later sold the brand name to Sharpes International and Mommersteeg (both part of the Van der Have Group). The company is now based with Sharpes in Lincoln, but trade through local distributors. Interestingly the Ayrshire agents are McGill & Smith. Root and fodder crop seeds are sold plus a range of grass seeds mixtures for the whole of the UK. However, selected mixtures or variants are specially designed for Scotland and Northern Ireland, incorporating varieties recommended for these areas. 1992 versions of the original Castlehill mixture for long-term permanent grass, and the Lambhill mixture for marginal land are included.

SPONSORS

The following organisations are thanked for sponsoring the South West Scotland Grassland Society during 1991-92.

Bank of Scotland, Castle Douglas

Dalgety Agriculture, Dumfries

Forum Feeds, Perth

Harbro Farm Sales, Turriff

Hydro Fertilisers Limited

K W Agriculture (Scotland) Limited

Ogilvie Dickson Limited, Galashiels

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L S Smellie & Sons is a local Strathaven firm, founded in 1874, which supplies feeds, fertilizers, chemicals, animal health and other agricultural requisites. Herbage seeds are geared to grazing and management conditions in central and southern Scotland. A series of grass mixtures has been formulated in conjunction with SAC. Only HVS seeds and leading varieties are used. The primary aim is to provide mixtures adapted to conditions within the trading area, but separate mixtures can be made up for specific situations.

Soil Fertility Dunns was formed by linking two west of England companies - Soil Fertility Ltd and Dunns Farm Seeds around 1965, and was established in Scotland in 1967. Dunns was a long established seeds firm who once employed Sir George Stapledon as a grassland consultant. SFD also sell fertilizers, lime and phosphate ('Gafsa') as part of an aim to assist good establishment. A full range of herbage seeds mixtures is marketed, using only the highest rated varieties for performance, persistence and winter hardiness. Leading mixtures are New Highland and MidCut for the medium-long term, both of which can be cut in early years and grazed afterwards. Emphasis is on late perennials for quality, bulk and thick swards.

South West Seeds is an Ayr based firm founded in 1982 and serving south and central Scotland. Cereal and root seeds are also sold. A complete range of standard grass mixtures is supplied plus special mixtures to individual specifications.

Watsons Seeds is a local Ayr company, which was founded in 1987 and specialises in grass seeds for the south west and other parts of Scotland. As with other small companies Watsons Seeds are able to maintain a direct personal service to customers. Only the best varieties are used and special mixtures can be made up to fit individual requirements. The 'Dee' mixture is a speciality.

The accompanying table gives further details regarding the above companies. When contacting one of these companies for the first time please mention *Greensward*.

WINTER FARM VISIT TO WIGTOWN

*A visit of the SWSGS to Coopon Carse, Palnure,
Newton Stewart on 6 February 1992*

The Society visited Coopon Carse in February by kind invitation of Jan Vos. Generous sponsorship for the visit was provided by Ogilvie Dickson Ltd of Galashiels, who built some of the large new sheds on the farm.

Coopon Carse is one of seven farms in four countries run by the Koepon-Coopon organisation, which was started by the Pon family in the Netherlands. Each farm is independently managed but benefits from the experiences and problems of all the others. The Coopon farms are also involved in the selection and supply of superior breeding material including embryo transfer. The aim is for high-producing, carefree cows with longevity and capacity for low cost milk production.

Nearly a hundred members and visitors were privileged to visit Coopon Carse on a bright February morning, and in 2 hours were treated to a comprehensive and fascinating story of how the enterprise was managed by Jan Vos and his wife Jenny.

The farm was purchased in 1983 by Pon (who had a holiday home in Scotland) because embryos could not be exported from the Netherlands. Subsequently, BSE has created problems with export from the UK. The buildings were converted to a dairy, and milk production began in 1983 using cows bought in and also imported from the Netherlands. The aims at Coopon are simply sound commercial farming dictated by economics. 135 Holstein cows with a 1 million litre quota are milked twice a day by a staff of two.

The soil is heavy wet clay so that grazing management is difficult. The cows are strip grazed in two fields from the end of April. A different field is used each day to maintain cow interest and to reduce poaching. The cows are then paddock grazed from late July to the end of September.

Three cuts of silage are taken commencing about 20 May, and then at intervals of 6 weeks. Jan considers himself old fashioned in aiming for high dry matter with the use of a Wuffler. In 1991 the first cut received no additive and had a dry matter content of 27%. An inoculant was used on the second cut which had a dry-matter content of only 17%, a pH of 4.6, an ME of 10.5 and an ammonia content of 12.3. A mixture of silage and draff is fed by mixer wagon with the addition of 8 kg of a premix per day for the high yielders. The average yield of the herd is 7800 l with a butterfat of 4.2 and a crude protein of 3.4. The margin over concentrates is £2490 per ha. However, the contribution of silage to the total diet is comparatively low, only 8.5-9 t being fed per cow in the winter.

In 1991 whole crop wheat was tried for a second year and did a great job in balancing the system. The crop was harvested in mid August, and treated with feed grade urea in the pit. Fertilizer grade urea should not be used as this is oil coated. The process of ensiling whole crop wheat is the exact opposite to that for grass silage with the aim of preserving not fermenting, and the gas is kept in not out. The finished product had a dry matter content of 48% and the cows loved it and wasted none.

Jan tries to breed a cow giving more and more milk and lasting longer and longer, but unfortunately these two aims do not necessarily go together. He also believes that aiming for high protein and forgetting butterfat is the way forward. The champion cow at Coopon Carse gave 13452 kg of milk in its third lactation.

The cows are calved all the year round, and the bull calves are sold weaned. Owing to an ammonia problem, the calf shed is fan ventilated. The calves are moved to the next pen after 7-8 weeks, and eventually moved into small cubicles where sawdust is used instead of straw. Cubicle width starts at 60 cm widening to 110 cm.

The sheep flock of 150 cross ewes is normally grazed separately from the cows in the rough areas. The ewes are put to Texel rams, and lamb about 5 March.

The Society wishes to thank Jan Vos for his invitation to visit Coopon Carse, and also Ogilvie Dickson Ltd for sponsoring the visit.

G E D Tiley

CSGS PANEL EVENING

*A meeting of the CSGS at the Cartland Bridge Hotel,
Lanark on 19 February 1992*

R Graham, Airthrey Kerse, Bridge of Allen

Mr Graham's father moved into the dairy farm of Airthrey Kerse in 1939. The better land on the farm was bought in 1979 to build Stirling University leaving only carse clay land. A pasteurization plant has been installed and the farm has been given the district "Clean Milk Award" eight times. Mr Graham is a producer retailer and now has thirteen wholesale and retail milk rounds. At present the total area farmed is 324 ha with a dairy herd of 150 cows.

Jersey cows were introduced on Mr Graham's other farm at Mains of Boquhan in June 1991 when he found that Channel Island milk was being brought into the district from Bedfordshire. These cows yield 25% less milk than the Friesians but give 25% more cream together with high calcium and protein levels. The Jersey milk is sold as "Graham's Breakfast Milk" and the demand for it still outstrips the supply.

In 1979 10-month old Limousin heifers were bought in from France and the herd now consists of sixty females. There is a good demand for bulls and females.

Sixty Suffolk ewes were bought in 1960 and most of the lambs from the flock are sold privately. In recent years Mr Graham has worked with Bleu de Maine and Rouge le Quest, using the rams on 450 cross ewes. Both breeds are slightly thin skinned, but the Rouge le Quest ewes look the best and have high lambing percentages and good mothering characteristics.

Last year some Berrichon du Cher were acquired. The principle feature of this breed is the large hindquarters, and it will be interesting to see what progeny they produce.

D Hogarth, Sorbie, Ardrossan

The Hogarth family farm had an area of 40 ha and all three sons wanted to farm. Now all are owner occupiers on 202, 243 and 162 ha. A 113 ha farm was purchased in 1952, and at first arable silage was made in a tower. A switch was made to grass silage in 1955 and the tower was used for storage until it became damaged. The first silage pit was earth walled and 43 m long by 17 m wide and 6 m deep.

Sorbie lies at 30 m above sea level near the coast and it is quite exposed. A total of 202 ha are ploughable and 32 ha of barley are grown. The dairy herd consists of 180 cows - mainly Friesians.

First-cut silage is made between 18 and 25 May from 97 ha, and a second cut is taken from 81 ha. In a good growing season a third cut is sometimes possible. The 1991 silage had a dry-matter content of 28.3%, a pH of 3.9, a crude protein content of 14.9% and a D value of 73.2 giving an ME of 11.7. First-cut silage is used for the dairy cows, and second cut is fed to young and fattening cattle. Paddock grazing by day and set stocking at night is the usual grazing management. Buffer grazing is sometimes necessary but is a nuisance.

The dairy herd consists of 180 cows, mostly Friesians, with an average yield of 6166 l of which 3945 l come from forage. The calving interval is 362 days. Formerly the cows were fed in two groups, but all are now fed silage and a home mix or straight concentrate by a Kidd feeder wagon. Only new-calved cows are fed concentrate in the parlour. Half the cows are put to a beef bull and heifers are calved at 2½ years old. Cows receive only silage until they first enter the parlour.

Bull beef is also produced and in the last few weeks before slaughter they receive up to 9 kg per head daily of a mainly barley mix. In addition, they consume large quantities of silage.

The farm is run by Mr Hogarth, two sons, one of whom is at College part time, and two employees. Buildings are kept simple with no slats, mats, automatic scrapers or slurry pumps. Slurry is scraped into a lagoon.

Costings are by Genus, and Sorbie is grouped with some Lancashire dairy farms. Mr Hogarth thinks that margin /litre is the most important figure in the costings, and this was 20.04 p with 0.17 kg concentrate

per l in September 1991. In January 1992 the comparable figures were 19.07 p and 0.15 kg respectively.

J Swarbrick, Braehead, Fauldhouse

Compared to the other two panelists Mr Swarbrick considered himself to be a land exploiter rather than a farmer. Last year he graduated in environmental science from Stirling University. He started out as a gardener at Auchincruive in the early fifties and then moved to a nursery and caravan park at Inverkeithing.

In 1983 Mr Swarbrick bought Braehead for £494 per ha. The farm had 1½ miles of railway running through its 81 ha, and had nine waste sites including quarries, brickworks and spoil heaps. Today the total area of the farm is 142 ha with about another 40 ha of derelict land rented from the Coal Board. The farm rises to 228 m above sea level with Ben Lomond visible from the top.

50 ha have been reseeded and 20 ha have been planted with trees. Three of the former quarries are now being used for tipping after washings from old mines had been extracted from one of them. This brought in £10,000. A blaze bing is also being worked, while 10 ha have received outline planning permission for an industrial estate. The old steading is being used for housing.

Until recently the stocking consisted of 40 beef cows and 250 Blackface ewes. The cows were bought in from the islands in 1984 as small heifers which only understood Gaelic. Only silage is fed to the cows. The ewes were bought cheaply at £14 and sold recently for £25. All the stock has now been sold and Mr Swarbrick intends to spend the summer with his brother in Australia and then winter in California.

At present the trees are worth nearly £1000 per ha, and Mr Swarbrick looks upon them as his pension fund. Since he purchased the farm it has more than paid for itself with the dumps providing a good return from their rent.

C McCombie

ALTERNATIVE FEEDS

Cledwyn Thomas
SAC, Auchincruive, Ayr

*A meeting of the SWSGS at the Hotel Embassy,
Newbridge, Dumfries on 20 February 1992*

The speaker at this meeting was Dr Cledwyn Thomas who is Head of the Grassland and Ruminant Science Department at SAC, Auchincruive, and has overall responsibility for the three SAC farms in the west - Auchincruive, Crichton and Kirkton. The meeting was chaired by Jim Forrest and the discussion was opened by Mr Peter Hill, Technical Product Manager of KW Agriculture (Scotland) Ltd who sponsored the meeting. Mr Richard Barker, a colleague of Mr Hill also attended the meeting.

Dr Thomas said that he would discuss alternative feeds from the point of view of a grass and silage enthusiast. The introduction of alternative feeds began as a means of reducing the cost per unit of ME and of protein in compounds. The amount of cereal in compounds has been reduced rapidly in recent years and now represents only about 15% of the total weight. At the same time the byproduct element has increased to nearly 50%. Some compounds contain substantial amounts of byproducts, and this has to be remembered when planning a diet.

Byproducts in concentrates

Up to 10 years ago compound concentrates were heavily dominated by starchy ingredients such as cereals and their byproducts, but in recent years cheaper fibrous byproducts have become available. The advantages of substituting fibre for starch only occurs at high levels of concentrate input when fibre helps to maintain milk fat content. At lower levels there is no difference between starchy and fibrous concentrates. The fibre in concentrate is less effective in maintaining milk fat than that in forage, so careful attention must be paid to ensuring a satisfactory forage intake. When good quality forage is fed to appetite it is difficult to get the cows to consume more than 60% concentrate in the total diet. The most common cause of low milk

fat is restricting forage intake either directly or through poor fermentation quality.

In practical terms maize gluten has had a big impact on feeding systems. Fed at rates up to 6 kg dry weight per day it results in only small differences in silage intake and milk yield, and does not affect the fat and protein content of the milk. However, maize gluten feed is much cheaper than compounds and so gives a higher profit.

Recently interest has centered on sugar supplements, eg. molasses, which provide a readily available form of energy. Maximum inputs of 8.62 kg of molasses dry matter have been achieved in experiments with late lactation cows giving fairly low yields. Such inputs of sugar have not depressed milk fat as would the feeding of starch supplements. Feeding molasses also increases milk protein content. Similar results have been obtained with fodder beet which gave increases in both milk protein and milk fat. Diets including these supplements provide an opportunity to manipulate milk composition - particularly protein - which is very difficult with a silage diet. Research is still in progress and levels of molasses exceeding 0.75 kg should not be used until the full production and health implications are known.

Alternatives to silage

Dr Thomas then discussed possible alternatives to silage in view of the pollution and storage problems associated with feeding it. In addition, the making of high dry matter silage is difficult in Scotland because of the weather, and it is virtually impossible to achieve the 40% dry-matter silage regularly made in the Netherlands. Alternatives which might be suitable are draff and whole-crop cereals.

In an experiment investigating the replacement of silage by draff/ beet pulp mixtures the dry-matter intakes were 15-16 kg per cow on a silage treatment and on a treatment in which 50% of the silage was replaced with a draff mixture. Where the silage was completely replaced with a draff mixture plus a little straw the intake was increased to 19 kg. Draff increased milk yield and protein % slightly, but depressed milk fat %. All distillery byproducts have been found to depress fat.

The advantages of whole-crop wheat as an alternative to grass silage are that it can utilize heavy dressings of slurry, it produces no

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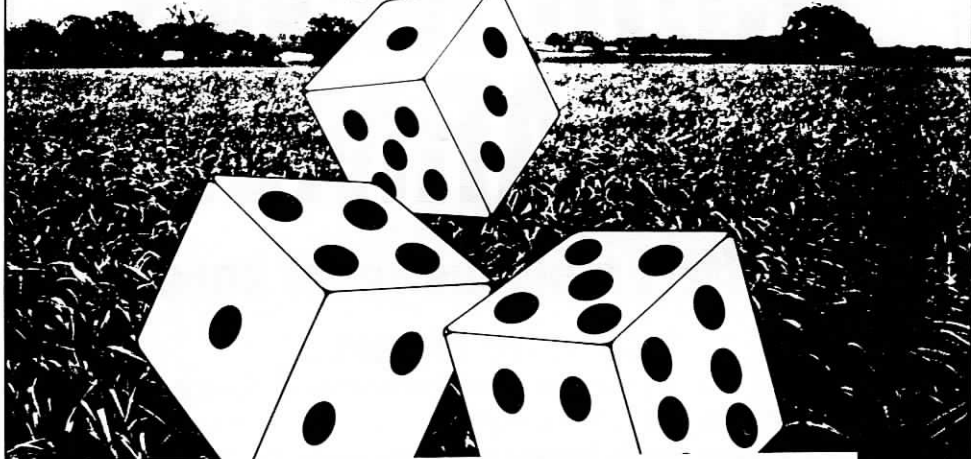
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effluent, it does not deteriorate when the clamp is opened, and it has high intake characteristics. Whole-crop wheat should be harvested at 45-55% dry matter and stabilised with about 4% urea. The urea breaks down into ammonia. However, a high ammonia content appears not to be detrimental to the animals. The ME of whole-crop wheat is difficult to predict, but being an alkaline material it consistently gives higher dry-matter intakes than grass silage. However, it does not increase the milk yield though both fat and protein contents of the milk are increased. Energy seems to be partitioned into body weight. One disadvantage with whole-crop wheat is the necessity to apply 4% urea to stabilise it. This amount of urea is not environmentally friendly because most of it volatilises, and methods of reducing it are being investigated.

Whole-crop barley is less likely to provide a suitable alternative to silage because the application of urea is ineffective here and heavy applications of sodium hydroxide are necessary. The best route with this crop is to cut at 35-40% dry matter and use an acidic fermentator for preservation.

Discussion

Mr Peter Hill from K W Agriculture (Scotland) Ltd opened the discussion with a talk on the products available on the market and their prices. Many background world events affect the prices of alternative feeds, and farmers could often buy at better prices if they watched for positive factors. In the winter of 1991-92 the main factor which affected the prices of these feeds was the exchange rate of the dollar versus the pound. Spot and forward prices can vary considerably with the rate, giving variations of £6-7 per tonne. Some of this is absorbed at farm level as the suppliers buy ahead of the sale date. However, Mr Hill was not anticipating such big differences in the future as in recent years. Other factors have been the prices on the Rotterdam market, and local supplies.

Mr Hill considered the current values of various feeds by looking at their prices relative to the value of barley feed. In making these calculations he used typical on-farm prices of 10 tonne loads as at 23 January 1992. Feeds with relative values less than 100 give the best value, those over 100 the poorest values.

In January barley dark grains had a relative value of 94, while brewers' grains stood at 79. Most of these feeds give good value although

they are difficult to handle. Best value is obtained by buying a large load in the summer months. Supergrains at 71 have an even better value than brewers' grains or draff, and are used as concentrate replacers. Maize gluten feed at 90 is always available and until recently was looked on as a concentrate replacer. Dark grains had a relative value of 85 in January, but the source of these should always be questioned. If they come from a distillery using copper equipment they will have a high level of copper and should not be fed to sheep. Thus, the grains from Invergordon are low in copper as it has no copper equipment.

In January rapeseed meal had a relative value of 88 and molasses (blend) 85. The latter tends to be underestimated in the alternative market, but the blends are very easy to handle. The best buy at that time was pot ale syrup which had a relative value of 51, but this is not as applicable in a silage-based diet as in a straw diet. The feed with the poorest value was sunflower seed meal at 102 - the only feed costing more than its value. Molassed beet pulp was also rather poor value at 98. Soya bean prices should come down in the spring because of the large South American crop.

Next Mr Hill looked at the prospects for cereal prices following the GATT / CAS talks. He gave the target prices for wheat in Ecu and the sterling equivalents as -

	Ecu	£
1992	150.52	115
1993-4	125	95
1994-5	110	84
1995-6	100	76

Barley prices will be 90% of the wheat prices. In addition, the co-responsibility levy will be removed by 1995-6. These prices provide no incentive for a farmer to use his own grain rather than buy in, nor is there an incentive to include grain in animal feed.

The outlook for alternative feeds is that their prices will follow those of grain since most are cereal byproducts. A lot more of these feeds will be home produced because the haulage rate will represent a higher proportion of the cost leading to a greater use of local byproducts. Excellent products are available in Scotland. Drying costs will also form a higher proportion of the total, so there will be a larger market in moist feeds than in dry feeds. Again moist feeds have higher haulage costs and more will be used locally.

Farmers will have to attempt to cut costs by using more alternative feeds and so increase self sufficiency. The new effluent control regulations will also stimulate the use of alternative feeds. The prospect of 30-40 % decrease in feed prices over the next 4 years will leave one which will not decrease - grass silage, the price of which is oil based.

When the discussion was opened the speakers were first asked for their opinions on the true cost of grass silage. Peter Hill thought that most farmers would say £12-13 per tonne, but that £18-20 was probably more reasonable. However, Cled Thomas believed that the best estimate was the marginal cost, ie. the price of making an additional 10 tonnes of silage. He suggested that this would be about £35-40 per tonne of dry matter. However, if new silos needed to be built or substantial repairs made to existing ones, the costs could be as high as £80-100 per tonne of dry matter.

The next questioner wanted to know who was going to be able to grow wheat at a price of £75 per tonne, and Peter agreed that the incentive would be to feed it to dairy cows and turn it into milk. At these prices there will be no need for grass or even land for dairy cows. Cled said that dairy cows could be kept on extensively grazed grass in the summer, and in feedlots in winter depending on alternative feeds and with no silage fed.

Peter made it clear that if the demand for alternative feeds doubled then additional supplies could not be obtained. The supply of these commodities is fixed and the price would increase with the demand.

A member wondered if the load to load variation in the composition of alternative feeds could be ignored. Peter Hill pointed out that cake varied tremendously from load to load, and that imported feeds are the most variable. Less variation will be found if the feed is bought from a named source. Buying from one source gives a very consistent product, eg. dark grains from one distillery vary very little. Cled Thomas suggested that buying from a reliable supplier would ensure a consistent product, and at anyrate the cow buffered out some of the variation by changing its intake.

John Marshall proposed the vote of thanks to Dr Cled Thomas and to Mr Peter Hill. He also thanked K W Agriculture (Scotland) Ltd for their generous sponsorship of the meeting.

D Reid

JUDGES' KEY POINTS FROM 1992 NATIONAL SILAGE COMPETITION

The press release announcing the winners of the British Grassland Society National Silage Competition for 1992 included a list of the judges' key points from the Competition. These form an excellent guide for farmers planning to enter a silage competition, so the ten points are reproduced here for reference.

- (1) **Silage utilization.** Excellent quality silage was not always being exploited to its full potential.
- (2) **Silage feeding.** Waste is now much lower due to widespread use of blockcutters and shear grabs.
- (3) **Silage intake.** Feeding cows exclusively out of doors may restrict intake in foul weather.
- (4) **Concentrate feeding.** Feed types should be carefully balanced to achieve maximum utilization of forage.
- (5) **Shoulder waste.** Minimize waste by overlapping clamp side sheets with a top sheet.
- (6) **Clamp sheeting.** Avoid damage to the top sheet caused by careless handling of tyres, bales, etc. Carefully seal sampling holes.
- (7) **Silos.** Keep the number of open silos to a minimum.
- (8) **Harvesting.** Speed of clamp filling is a key factor in the success of the product. Service and repair machinery before storing under cover for the winter.
- (9) **Farm waste.** Much has already been done - but many improvements are still needed. Don't delay while grants are available. Farm wastes have a fertilizer value and should be integrated into a fertilizer policy.
- (10) **Silage effluent.** Legislation will mean that silos MUST be effluent proof. Thorough inspection of silos is advisable before next season. Plans should always be on hand to cope with unexpected breakdowns or blockages.

ISLE OF MAN HIGHLIGHTS

J Harris

Secretary, Manx Grassland Society

Autumn tour of Staffordshire, 1991

In October 1991 the Manx Grassland Society visited six farms in Staffordshire, the first being the 182 ha Red Earth Farm at Rudyard, Leek. Mr Heath and his wife moved to this upland dairy farm from a Cheshire smallholding in 1969. A 300 Friesian/Holstein flying herd is put to Charolais bulls. The cows are grazed on 80 ha up to an elevation of 300 m, and milked at the home farm in the summer. 100 summer calvers are managed separately in another steading during the winter. The whole farm is in grass, and white clover is an important constituent. Cows average 6050 l, with brewers grains fed in addition to 1.8 t of concentrate. Slurry is piped to a concrete holding store, then to a Boythorpe above-ground store, and spread on the grass in late winter.

The next visit was to another dairy farm, which was, in contrast, at only 60 m above sea level in the Trent Valley. Harlston at Tanworth is farmed by David and Michael Groves, and the fields are scattered through the village, only 20 ha being near the steading. As a result the dairy herd of 123 cows, mainly Holsteins, is zero grazed on 2.5 ha of grass and buffer fed on silage. The average milk yield is 7600 l with three times a day milking in a bail. Two separate blocks of land are continuously cropped - 45 ha for zero grazing and silage, and 42 ha in winter wheat. A new venture in 1991 was 5 ha of forage maize.

The third farm visited was also at 60 m in the Trent Valley. Kings Bromley, farmed by Gordon Baskerville, is a 202 ha dairy/arable farm, which is almost dead flat with half the area in grass and half in arable. The soil is a sandy loam over sand and gravel, so farmyard manure is a major resource. After 3 years in grass, 24 ha of potatoes are grown followed by 2 years in winter wheat and 1 year in winter barley. The rainfall is only 660 mm, so irrigation is essential, and grass gets the bulk of the water - up to 30 mm in the year. The dairy herd consists of 160 Friesians with a 1 million litre quota. 100 cows are inseminated

with Friesian and the rest with Aberdeen Angus. Altogether the farm carries 450-500 cattle. The dairy herd is set stocked at 0.12 increasing to 0.20 ha per cow. Summer calvers are buffer fed from August onwards. Silage is made in earth bank silos with tyres to stop the sand blowing away. Up to 1 t of waste potatoes are fed per head.

The tour next visited the farm of Graham Robotham, Cowley Hill at Hamstall Ridware, again on light Trent Valley soil. This 80 ha farm has a 100 cow herd kept on a self-sufficiency system based on wheat and silage. A bull-beef unit started 3 years ago has been built up to 50 animals per year with a target of 100 per year. 22 ha of the farm is in long leys and permanent grass and 8 ha in continuous maize. The remaining 50 ha is in a rotation of potatoes, wheat and 2 years grass. Feeding is based on a complete diet feeder, with no concentrates in the parlour. The ration consists of soda wheat, brewers grains and fish meal plus silage according to the grass supply. No concentrates are fed in early summer until the grass gets poorer.

A short visit was paid to James Daw's farm, Rugeley. Mr Daw farms a total of 243 ha, with cereals and a dairy herd at Rugeley. On another farm of 93 ha some distance away he has 350 ewes, 30 ha of potatoes and cereals, and a newly established outdoor pig unit. At the time of the visit there were 110 sows in this unit, and the first batch of finished pigs had just been sold to Gateway.

The final farm on the tour was St Stevens Hill Farm overlooking Blythefield Reservoir at Adamson. This is all in grass, and Peter Brown has a herd of 100 pedigree Limousin cows, together with flocks of Lley, Blue du Main and Rouge ewes. Mr Brown was aiming to sell Lley and Blue du Main breeding stock for quality lamb production.

Spring tour in Donegal, 1992

On this tour the Manx Grassland Society went first to the 36 ha all-grass farm of Robert Gray at Ballomoney Road, Craigantlet, Newtonwards. Mr Gray has a dairy herd of 70 cows and a flock of 30 pedigree Suffolk ewes. The herd yield is 7500 l at 4.2% butterfat and 3.2% protein. 30 to 40 heifers are kept for calving at 2 years old, and 10 young bulls are sold annually. Concentrate use is 1.2 t concentrate per cow. The first cut of silage taken in the third week of May, averages 12 ME. Pollution is a big problem as this farm is within 70 m of the intake of a reservoir.

Jack Lamberton's farm of Castletown, Fahan was visited next. This 53 ha farm is run by 80 year-old Mr Lamberton and his two sons, and is all in permanent grass. Crops of silage are not heavy but are of good quality, and Mr Lamberton has been a prizewinner in the local silage competition. Feeding is by a Krone forage wagon. On 28 ha of rented land are 260 Border Leicester x Blackface ewes, which are put to Suffolk, Ile de France and Charolais tups. The sheep graze the dairy area until 1 April.

After a visit to Killygordon Creamery, the tour continued to Water Wheel Farm, Castlefinn, where Patrick Kelly milks 130 cows on less than 80 ha. The cows average 4600 l from 500 kg of concentrate fed together with excellent silage. Remarkably, the silo was covered with dung sown with RVP seed, which was cut and fed with the shear grab.

Malcolm Cooper's farm, The Steps, was also visited at Castlefinn. This 57 ha farm carries 100 cows with a herd average of 4100 l. Malcolm aims for very low concentrate feeding. A paddock grazing system is used with 28 paddocks - all divided in two with an electric fence for day and night grazing. Cows are turned out in mid March, and the concentrate feed is stopped within the week.

Ramelton farmed by Andy Floyd lies on the west side of Loch Swilly, and consists of 69 ha in two blocks, 3 miles apart, at 30 to 120 m above sea level. A herd of 36 Angus cross suckler cows is put to the Charolais bull, and housed on slats. Calves are wintered on silage and 1 kg of barley, and grazed the following year. Heifers are finished in January, and bullocks are sold as heavy stores. None of the stock receive more than 1 kg of cereals per day - the main reliance is on silage. A sheep flock of 35 ewes is put to Suffolk and Texel tups, and is fed on silage. Half of the flock is housed in a raised slatted floor house.

Another farm visited on the west side of Loch Swilly was Glen Cross, Rathmullen, farmed by Bert Anderson. Glen Cross is only 40 ha and carries 45-50 cows, all the progeny of which are reared. The bullocks and heifers are finished at 2 years of age in slatted floor buildings, where they are fed silage and up to 2.5 kg of maize gluten plus beet pulp.

The suckler herd of Michael Chance at Drumbarneth, Manor Cunningham was the next item on the tour. 82 suckling cows are carried on 102 ha, and all progeny are reared. Steers are sold fat at 26 months, and heifers at 20 months. Replacement heifers are home

reared. Arable crops occupy 38 ha of the farm, and consist of winter wheat, winter barley, oilseed rape, potatoes, spring barley and spring oats. All cropping is on a share basis, ie. a neighbouring farmer supplies all the inputs, while Mr Chance supplies the land, and the profits are shared. 64 ha of grassland carries all the 80 suckler cows and their progeny, using a paddock grazing system.

The 160 cow dairy herd of Roy Cromie, Newton, Cunningham was in prime condition, which he credited to calcified seaweed. The herd average is about 6000 l, and the management system was simple. Concentrates are fed at stepped rates, with a maximum of 7.3 kg daily to a total of 1.2 t per cow. Silage is made in May, and is wilted with no additive.

On the last day of the tour, the Witherow family were visited. Norman Witherow farms at Convoy, Letterkenny, and has a herd of 140 cows on complete diet feeding, with the concentrates topped up in the parlour. The herd average is 6200 l from 1.5 t of concentrate (including cereals, grains and molasses). Potatoes are also fed. Silage used to be made in mid May, but is now left until early June for a good fermentation since there is a lot of permanent grass. Finally, on Billy Witherow's farm, Gob-na-Scale at Conroy, 95 excellent cows and some good grass were seen.

Farm walks on Isle of Man

The Society visited two farms at Andreas in the north of the island on 27 February 1992. Bull beef from the suckler herd was the enterprise of main interest at N West's farm, Ballacorey. This 122 ha farm consists of 63 ha of grass, 51 ha of winter barley and 8 ha of rough land. Recently Mr West purchased Grenaby Farm giving an extra 60+ ha. In 1991 the grassland carried 80 suckler cows plus March-born calves and 50 yearling heifers, and provided sufficient silage to feed 80 calves plus the 18-24 month heifers. Bull calves were left entire for the first time in 1990, and were finished on silage and minimum concentrates at 14 months, mostly in May 1991. The heifers were left as stores, and were finished in the winter of 1991-92 at 20-24 months.

The second visit was to Guilcaugh, farmed by Mr John Crellin who won the Society's Ellerslie Silage Trophy in 1990 and again in 1991. This farm has a total area of 122 ha with 40 ha of low peaty meadow, and the remaining ground varying from sand to clay. About 28 ha of winter wheat are grown. Over the last 2 years the dairy herd has been

increased from 75 to 100 cows, and milking frequency has been changed back from three times per day to twice with an attendant drop in production. The average milk yield is 6700 l with a margin per cow of £900 using only 1.4 t of concentrates. In 1991 the first cut taken in the third week of May gave a silage with a D value of 72. The second cut silage made in early July had a D value of 65. Emphasis has always been on high quality, well wilted silage with a minimum of waste. Feeding is both at the face and at an outside feeder.

MILK FROM GRASS (2ND EDITION)

Edited by Cled Thomas, Alan Reeve and George Fisher

The revised second edition of this invaluable guide book on using grass to its best advantage for milk production has just been published. It is distributed through the British Grassland Society and copies are available at a discount price through the Central and South West Scotland Grassland Societies.

It summarizes in a very readable form all the essential and up to date facts required to (1) manage and manure grass; (2) conserve it for winter and feed it; (3) get the best out of grazed grass; (4) integrate conservation with grazing; and (5) use grass for increasing profits in milk production.

Purchasing and reading the hundred or so pages of this book could be one of a dairy farmer's most cost-effective actions.

IVth INTERNATIONAL RANGELAND CONGRESS MONTPELLIER, FRANCE - 22-26 APRIL 1991

G E D Tiley

Secretary, South West Scotland Grassland Society

This Congress was an international meeting of some 500 delegates from over 50 countries specializing in the rangeland type of grassland.

The word 'rangeland' evokes a picture of vast prairies, steppes or Australian deserts. These are, in fact, the largest and most typical examples. However, most countries have areas of grassland or scrub where productivity is too low for other than minimum inputs of management, and where utilization consists of 'ranging' livestock over the whole area to fend for themselves.

In Scotland, rangeland is represented by the hill and marginal land of the Less Favoured Areas, where extensive stock rearing blends with forestry, recreation and amenity use. Scotland's cool, moist climate contrasts with the often hot, dry conditions of the Mediterranean rangeland seen, for example, in the Montpellier area of southern France. Though of very low productivity, these sub-tropical rangelands occupy vast areas of the globe and contribute significantly to the economies of the countries involved.

Inevitably rangeland covers a very wide range of grassland types with an equally wide range of problems. Fire and environmental degradation were recurrent themes at the Congress, and advancing desertification is a real threat in some of the poorer countries. Weed and scrub invasion and recreational pressure are other factors changing the vegetation. Socio-economic changes are also involved, for example, in southern France where the traditional grazing practices are being abandoned as the rural population declines and moves towards the towns.

There was recognition that set-aside, freezing of the land or confining it to a museum status was environmentally unsound. Support should be given to enable the land to be used in a sustainable way. There was also a feeling that the era of intensification of agriculture was coming to an end due to the hazards of pollution, public health, costs and amenity effects.

A visit was made to the Roquefort area, a dry rocky place traditionally grazed by sheep. Some of the farms milk these sheep (Lacaune breed) to make the famous Roquefort cheese. The strictest quality standards are imposed in the manufacture of this cheese in the caves where it is matured.

The Congress provided an opportunity to appreciate the variety of rangeland in the world, and the diversity of grassland problems and to learn of the worries and needs of the often peasant farmers who have little scope for diversifying into other enterprises. Some of the European and New Zealand delegates were interested in the work on the direct drilling of white clover and grass which has been carried out in south west Scotland. There was a continued emphasis on quality control of animal products through cooperative marketing. The need to preserve the environment in rangeland and grassland management was constantly reiterated, while at the same time maintaining or improving the welfare of the people living there.

Papers on white clover, direct drilling and the feed value of whins were presented from SAC Auchincruive. Attendance at the Congress was supported by SAC which is partially funded by the Scottish Office, Agriculture and Fisheries Department.

SOUTH WEST SCOTLAND GRASSLAND SOCIETY VICE-PRESIDENT'S PRIZE

This prize is given to the best final year Grassland student on the Higher National Diploma course in Agriculture at Auchincruive. Due to the course now being shortened to 2 years, two groups of students completed the course at the same time. For this year only, therefore, there were two prizewinners - Andrew Robinson, Top Cottage, Thornyflat Farm, Ayr, and Scott Calderwood, Holm Farm, Rosneath, Helensburgh. Both students received a prize of £25 plus a year's free membership of the Society. The prizes are funded by donations from the Honorary Vice-Presidents of the Society.

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