

## Editorial

With the continued increase in feed, fertiliser and fuel cost many farmers are looking more closely at how to make better use of inputs or attempt to buy more prudently. In this edition of the SAC Newsletter there are a number of technical articles looking at best buys for fertiliser and feed, alternative fuel sources and the use of clover in grassland.

Whilst trying to reduce costs on livestock farms it is important to remember that key to business performance is animal welfare. The impact of parasites and disease on animals and the economic impact is discussed in a few of the articles.

With the buoyant cereal market it could be easy to take the eye off the detail. It is important to continue to monitor market prospects to ensure you are producing for the right market, whilst maintaining efficiency and keeping up to date with new technology.

A change in policy relating to woodlands has recently been announced by SGRIPD. From 2008 all areas of woodland will need to be declared on your IACS Single Application Form. The article on page 11 provides more detail on this change. If you need to amend your IACS map and would like our assistance in completing the Land and Business Change Form please contact us as soon as possible.

## Farm Business Services

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## Best Buys In Fertiliser

Nitrogen fertiliser with 34.5% nitrogen costing £260 per tonne makes a kg of N cost 75p. For urea (46% N) to be a better buy the price per tonne needs to be less than £350. Despite this seasons high price of nitrogen cost-effective responses are still expected in cereals up to the rates recommended in SAC'S nitrogen Technical Note T516. In contrast, the flatter response curve in winter oilseed rape means that 160kg/ha of spring N is probably the highest rate to be cost-effective. Nitrogen fertiliser is not the only source of nitrogen to the crop and savings can be made by taking account of residues from previous crops and organic manures.

The time of application of FYM and slurry is critical in assessing the contribution of available nitrogen to the crop. 30t/ha FYM spread in autumn will leave no more than 15kg/ha of nitrogen available in spring for the crop, and even less on light land. Spreading the same FYM in February and ploughing it down within 24 hours will leave about 35kg/ha of nitrogen available for the spring crop. The difference in timing is worth £15/ha with the February spreading worth £26.25/ha in nitrogen alone, compared with no FYM. Ploughing FYM down within 24 hours is estimated to save 5-10kg/ha nitrogen as ammonia emissions are reduced. The problem is worst in warm conditions when ammonia loss is likely to be rapid. 30t/ha FYM will also apply about 100kg/ha phosphate and 240kg/ha of potash resulting in considerable saving in PK fertiliser.

“Best buys” of NPK-containing fertiliser can be calculated using typical values such as 65p/kgP<sub>2</sub>O<sub>5</sub> and 45p/kgK<sub>2</sub>O along with 75p/kgN. For example:

	<b>Price offered</b>	<b>Calculated value</b>	<b>Price advantage</b>
<b>N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O</b>	<b>£/tonne</b>	<b>£/tonne</b>	<b>£/tonne</b>
8 24 24	306.60	324.00	17.40
11 22 22	310.25	325.25	15.00
17 17 17	301.60	314.50	12.90

The “best buy” is the fertiliser with the greatest price advantage of the calculated value compared with the price offered. In this example 8:24:24 is the “best buy” assuming the physical characteristics and chemical solubility are acceptable.

**Alex Sinclair, Environmental Services Group, SAC**

## Time to Revisit the Potential of Clover in Grass Swards?

There is no need to be an organic farmer to use grass clover swards in your grassland system. Trials have shown that production can match that of some conventional grassland systems and was on 15% less than ryegrass swards treated with high levels of inorganic nitrogen.

With the recent increases in the cost of nitrogen, the use of grass clover swards with no nitrogen requirement becomes more attractive.

Maximising production from a grass clover sward begins at establishment. Clover performs best in soils with a pH in the range 5.9 to 6.2 and where phosphate and potash levels are moderate. Prior to reseeding, fields must be soil sampled, line deficiencies rectified and low phosphate fields treated with water soluble triple super phosphate. As a rule of thumb, low phosphate fields require 125 kg/ha (100 units/acre) of triple super phosphate and very low fields 180 kgs/ha (150 units/acre). After sowing, a further 56 kg/ha (45 units/acre) of phosphate and potash should be applied.

The most productive swards are established by direct reseeding before the end of June without resorting to weed control. Where weed control is required it must be glower safe and not applied before the clover has developed its first trifoliate leaf.

The mix can be established by undersowing with a cereal. Since cereal seed is sown to a depth of 25 mm – 40 mm (1” – 1.5”) and grass seed mixes at 6 mm (0.25”) the normal recommended fertiliser should be applied with the cereal and the 56 kg/ha (45 units/acre) of phosphate and potash broadcast on the surface to benefit the grass and clover. The grass and clover seed should be sown the same day as the cereal.

On farms with permanent pasture, a pioneer crop of forage rape can be introduced into the reseeding programme. This has several advantages:

- it allows a year in which the old sward rots down.
- Conservationists are worried at the lack of cropping in the hills and upland as weed seeds in crops and bare stubble provide a valuable feed source for birds. A pioneer crop will benefit the local bird population and may be supported by environmental grant schemes

- the forage rape can be used to fatten lambs.

Once the grass/clover sward is established, grazed land needs not further application of inorganic fertiliser except where soil analysis dictates and use of maintenance dressings of phosphate and potash. In grazed swards, phosphate and potash are recycled thus reducing the requirement of applied fertiliser to nil or very low levels.

Where swards are cut for hay or silage returning the dung to these fields will replace potash removed through cutting and again reduce fertiliser requirements to low or very low levels.

At grazing bloat can be a problem in grass/clover swards but can be avoided by making “bloat guard” available to grazing animals.

One farmer I know invested in some lime and phosphate three years ago to regenerate the clover in some 15 – 20 year old grass swards. They now produce more forage than when compound manure was applied and have had no further lime, phosphate or potash. Not a bad return on the initial investment in phosphate and lime. To discuss establishment and management of this system and whether it would meet your needs, contact you local SAC Consultant.

**Sinclair Simpson, Farm Business Services Group, SAC**

## Protein Feeds

In many situations when feeding cattle and sheep we have the basal forage on farm and ready access to an energy supplement in the form of cereals. However, for straw-based diets and those based on low protein silages we also need a source of supplementary protein, which usually has to be bought in. There is increasing interest in growing protein crops for feeding, especially beans, and it is useful to consider the alternative protein straights and their feeding value in terms of metabolizable energy (ME MJ/kgDM) and crude protein (CP g/kgDM).

Rapeseed meal (ME:12; CP:400). Probably the most commonly used protein source for ruminants. Becoming cheaper as more is grown and processed in the UK.

Soya bean meal (ME:13.8; CP:565 for hipro). Excellent protein source and used extensively for pigs and poultry so tends to be too expensive for ruminants. Has special applications as a source of undegradable protein e.g. feeding pregnant ewes.

Peas (ME:13.5; CP:260) and beans (ME:13.3; CP 290). Excellent, safe, home grown feeds of medium protein content.

Distillers dark grains (barley ME:12.2; CP:265, wheat ME:13.5; CP:340, maize ME:14.0; CP:310) and maize gluten feed (ME:12; CP:220). By-products of the distilling and maize starch industries, medium to high energy and medium protein contents.

Pot ale syrup (ME:14.2; CP:360). High energy and good source of rumen degradable protein for the rumen microbes. Particularly applicable to straw-based diets.

Urea (ME:0; CP:2800). Not a source of protein in itself but a source of nitrogen for the rumen bugs to grow and produce microbial protein, which is then digested by the ruminant. No energy value and not permitted in organic systems. Care needed when feeding urea. It should be fed little and often and with a source of readily available carbohydrate. Available as a lick or pour-on for forages, which usually contain some sugars, or in a compound.

Producers wishing more details of specific use of these protein sources should contact their local consultant.

**Colin Morgan, Sustainable Livestock Systems Group, SAC**

## Relative Values of Feeds

When comparing feed prices we usually use barley and rapeseed meal as the standards for cattle and sheep since they are the most commonly used straights. From these we can derive a unit cost of energy and protein, which in turn can be used to calculate the relative value of other feeds. The table below gives the relative values of feeds based on rapeseed meal at £150/t and two barley prices of £150 or 175/t.

It should be emphasised that, since the relative values are calculated from the energy and protein contents of the feeds, they do not take into account other desirable attributes of feeds which are useful in certain circumstances, for example the high level of digestible fibre in molassed sugar beet pulp.

Feed	Barley	
	£150/t	£175/t
Wheat	157	185
Wheatfeed	128	142
Maize gluten feed	161	179

Beans	171	185
Peas	175	182
Barley dark grains	156	168
Maize dark grains	190	204
Wheat dark grains	186	198
Pot ale syrup	100	107
Citrus pulp	141	168
Molassed sugar beet pulp	145	170
Hipro soya bean meal	215	210

The relative values can be compared with actual prices to determine the feeds that are good buys at any particular time. Depending on barley price, if feeds can be purchased at a price lower than the relative feed value show above they are a good buy. The SAC ration formulation program, FeedByteFIM, has a section for the calculation of relative values. Feed prices and availability are always on the move so contact your local consultant for specific requests.

**Colin Morgan, Sustainable Livestock Systems Group, SAC**

## Straight Vegetable Oil as a Vehicle Fuel

Biofuel production in Europe is based on biodiesel and has developed rapidly since the year 2000. Biodiesel is made from vegetable oil by removing glycerol from the oil, which allows it to be used in unmodified diesel engines. Biodiesel production utilises a chemical process known as esterification, mixing an alcohol, usually methanol, with the oil in the presence of a catalyst to produce a methyl ester and glycerol.

There have been developments recently in using straight vegetable oil (SVO) (also known as pure plant oil), which has not been esterified, as a biofuel in a number of countries, notably Ireland and Germany. Changes announced by HM Revenue and Customs after the 2006 budget permit SVO to be regarded as a biofuel in the UK and therefore to qualify for the 20p/litre fuel duty rebate enjoyed by biodiesel, providing it meets quality standards. As with biodiesel, SVO can be used as a blend with, or substitute for, mineral based diesel.

Production of SVO for the farmer who may be considering on-farm processing of biofuel is associated with a number of benefits compared to biodiesel. As with biodiesel, production of SVO from rapeseed requires a crushing stage, but it does not require the esterification stage, so reducing capital costs. The use of methanol and catalysts, required for biodiesel processing, is avoided, reducing running costs. In all, calculations show that costs per litre of producing biofuel may

be reduced by up to 28p/litre for SVO compared to biodiesel. Methanol and catalysts used in biodiesel production require considerable care in handling, and avoidance of these chemicals in SVO production reduces safety risks and insurance implications. The need for storage of methanol on farm, which is restricted by environmental regulations, is removed. In addition, no glycerol is produced from SVO production, removing the need to find a market for this material.

The greater viscosity of SVO compared to biodiesel means that it does not flow through injectors in the engine so freely, leading to unburned oil remaining in the chamber which may compromise engine performance. The disadvantage of SVO is that vehicles need to be modified if SVO is to be used as a considerable component of the fuel mix. Engine conversion kits are available from a range of manufacturers and consist of fuel pre-heating, extra filtration, increased injection pressure and replacement injectors. Kits cost from £500 to the region of £2000, depending on specification. Concerns have been expressed that even with engine modification, the degree of sophistication of today's diesel engines may lead to problems when SVO is used as a fuel. However several users of SVO, both in the UK and Ireland, claim to have run lorries on SVO for several thousand kilometres with no engine problems.

For further information on the opportunities offered by SVO for on farm processing see the report 'Review of the potential for on-farm processing of various non-food crop products' by Booth E, Bell J, McGovern R and Hodsman L, 2007 on <http://www.sac.ac.uk/publications/othertechpubs/>

**Elaine Booth, Select Services Group, SAC**

## Creep Feeding- Just Another Cost?

Increasing efficiency of production while controlling costs are keys to the success and profitability of any enterprise.

Maximising liveweight gains and eliminating growth checks is crucial. As grass growth and quality declines (seasonally or caused by dry conditions) and cows are at a later stage of lactation the growing calf becomes more demanding in its nutritional requirements to sustain high gains. To maintain gains it is crucial to introduce creep feed.

Introduce creep in August for April calvers or earlier in times of severe grass shortage or when calves are born earlier from a compact calving season. As well as helping to bolster growth strategic use of creep will reduce the weaning check, reducing the pneumonia risk while keeping the calves in

forward condition, looking shapely. It is ten times more efficient to feed the calf rather than feed the cow to produce extra milk- calves are efficient converters of feed to flesh. Calves on a SAC farm have grown at 1.4kg/day from mid-August until weaning.

Another benefit of creep feeding is the smooth transition to winter diets. The ration fed to the calves need neither be special nor expensive as long as it has a good energy level. By the time the calves are weaned, the type of feed should be same as that to be used post weaning. As grass and milk is high in protein the creep is unlikely to need protein supplementation if total diet is 14% CP unless grass supplies are short in late summer/autumn. The creep can also act as a good carrier of minerals and vitamins if the farm is deficient. Creep should be introduced at low levels to prevent some calves over-eating but built up to levels dictated by the management regime post-weaning. If male calves are to be finished intensively after weaning they need to be eating almost ad lib creep in the run up to weaning. Other calves should be rationed to 2 to 2.5 kg/day. The weight advantage gained prior to weaning will be sustained through the winter and it could make the difference between finishing off grass or having to be housed again.

It cannot be said that creep is just another cost, one that could be eliminated. The benefits are immense. Financially the extra weight gain (weaning weights can be 25 to 30kg higher) can be worth three to four times the cost of the feed.

Fine tuning the suckler enterprise is the key to success and creep feeding is just one step.

**Ian Pritchard, Select Services Group, SAC**

## Use Worm Egg Counts to Fight Wormer Resistance

Resistance to wormers is seen as:-

- Lambs not achieving their target growth rate particularly post weaning. Target growth rates for grass finished lambs are 175 grams per day and on grass clover pastures 270 grams per day. Lambs from upland and hill areas, for the store market, should grow at between 160 and 210 grams per day depending on the breed or cross and the pasture quality.
- Lambs that fail to thrive and require repeated wormer

doses. As the wormer is not effective there are more worms on the pasture to challenge the lambs.

- More tail-end lambs in the autumn. As the lambs do not achieve their target growth rates, they remain on the farm and eat into the grazings available for the ewes prior to tupping. This may reduce the lambing percentage in the following year.

The examination of faecal samples in bulk offers a very cost-effective way of monitoring the parasite burden to make the best use of wormers. It can also be used to check the wormer was effective. Collect 10 fresh samples into individual posts or bags. They can be readily collected from the ground after gathering the sheep in to a corner of the field and then collecting freshly dropped, warm faeces. The bulk examination gives a better estimate of parasite burden in the whole group compared with individual counts on a few animals. The 10 individual faecal samples from each group of sheep can be submitted to your vet or your local Veterinary Investigation Centre for examination. SAC charges £15.75 (+VAT) for a single bulk examination. Your vet may add a consultancy fee.

Special pre-paid kits including postage are available directly from £20.00(+VAT) from SAC VS Aberdeen on 01224 711177.

You can use the sampling option within the Animal Health & Welfare Management Programme to support these tests.

**Brian Hosie, Veterinary Services Group, SAC**

## Ticks, Tick-borne Fever and Suckler Cows,

### An Old Disease Coming Back to Haunt Us?

Tick-borne fever (TBF) is caused by a bacteria *Anaplasma phagocytophila* and is transmitted by the sheep tick *Ixodes ricinus* when it bites a susceptible animal. Almost all populations of ticks carry the TBF organisms: where there are ticks there is TBF.

Clinical signs of TBF in cattle include fever (temperature of 39.5 degrees and above), depression, a reduced food intake and a suppression of the immune system. These signs may not be noticed in extensive suckler cow systems. The fever can also cause embryo loss and abortion, which is well recognised

in sheep.

Ticks and tick associated diseases in cattle, sheep, grouse and deer are becoming more common in Scotland with many hills once thought to be free of ticks now tick infested. Mild wet winters now permit tick activity for the majority of the year in some areas. In addition some deferred grazing practices as required by the Rural Stewardship Schemes permit the build up of a vegetation mat, which is the perfect habitat for ticks.

SAC Veterinary Services has been involved recently in the investigation of high barren rates in cattle that have been out-wintered on tick affected hills. We know that the affected cattle were initially in calf and embryo loss has occurred when the cattle have been outwintered on the hill. Common disease and management reasons for the high barren rate have been ruled out and the history and initial laboratory investigations point to TBF as the probable cause.

The problem has only affected suckler cows that have not been on hill ground before and were not acclimatised to hill conditions. Hill cows that have been managed in one hill environment seem less likely to be affected. Farmers need to be aware of this condition as a potential problem and discuss the risks and possible control strategies with their vet.

SAC is planning to look at high hill suckler cows outwintering systems on 3 demonstration farms as part of a QMS funded project this winter. SAC Veterinary Services is hoping to investigate this specific disease presentation in more detail this autumn/winter to try and provide better advice on achieving a precise diagnosis, the likely levels of tick challenge and what the best control strategies may be.

**Colin Mason, Veterinary Services Group,  
SAC**

## DNA Testing for Calves

Any calf that is registered after 27 days of birth gets a Notice of Registration (NOR) instead of a passport. This animal cannot enter the food chain and can only be moved off the holding direct to knackery yard or hunt kennel. The NOR animal can be kept for breeding, (potentially useful if it is a good female), but otherwise cannot be sold.

It is now possible to appeal against a NOR using DNA testing of the calf and the dam to establish parentage. BCMS supply a leaflet giving full details of the process, but in summary:

The farmer/crofter contacts BCMS with the eartag of the animal and requests a form.

BCMS make an initial check to ensure there is a chance of a

passport being issued – assuming a positive result (to avoid the farmer undertaking unnecessary expense, as BCMS may have other reasons to refuse the passport).

The farmer contacts an approved lab, then arranges for his vet to take a hair or blood sample of both calf and dam, which is sent direct to the lab. The laboratory reports back to the farmer or vet.

If there is a positive result, then a passport is issued for the calf and all restrictions are lifted.

DNA testing is available for animals that have had passports refused, regardless of how long ago. The only condition is that both calf and dam are still alive. A negative result could cast doubt on the identity of other cattle in the herd and may result in additional inspections.

The farmer pays for vets and laboratory fees which vary, a quick call round the approved labs revealed a range of prices from £40 + VAT to £300 + VAT, for testing the two samples. Turnaround times varied from 10 working days to 6 weeks. Vet fees are estimated in the region of £30 - £50. So using the lowest figures, the DNA testing could be as low as £70 + VAT. Balanced against the sale price of the animal this DNA testing is potentially very worthwhile. Along with the financial benefit, it removes the hassle factor of having an animal on the unit that is under movement restriction for the whole of its life.

**Niall Campbell, SAC Farm Business  
Services Group, SAC**

## Cost of Infertility in UK Dairy Herds

Fertility in UK dairy herds has been declining steadily for a number of years and is one of most important problems facing the dairy industry. While other dairy herd performance indicators have improved significantly, fertility has been the exception.

Researchers at the Universities of Nottingham and Reading have shown calving rate to first services has declined at about 0.75-1% per annum over the past 25 years. There are many factors, which can influence a decline in fertility including management practices, nutritional factors and high levels of milk production. This trend is not just confined to the UK, there are equal concerns in many other parts of the world including Europe, Australia, New Zealand and North America.

However there are a large number of UK dairy producers with high yielding high genetic dairy cattle achieving excellent fertility status.

Poor fertility is often associated with increasing high yields, genetics and breeding with the blame often pointing to the Holstein breed. There are many factors influencing the fertility status of the modern dairy cow including,

Nutrition	Infectious diseases	Health Issues	Management
Lack of energy Thin cows Excess protein Low intakes Fat cows Mineral deficiency	IBR Leptospirosis Neospora	Cystic ovaries Lameness Retained foetal membranes Metritis Mastitis Bull infertility	Housing Heat detection AI technique Breeding High milk yield Herd size Pressure on staff

With many issues including nutrition, management and health contributing to poor fertility it is important that individual herds identify their own specific problems. A comprehensive action plan tailored to improve their key fertility measures should be produced.

There are a number of key fertility measures used to assess fertility each one with its own advantages and limitations in their use. The key measurement used on a particular farm should depend on the individual herd and the effectiveness of management to collect and interpret the information.

**Table 1: Key fertility Measurements**

Measurement	Typical ranges	Target
Calving Interval/Index	355-430 days	365-375 days
Calving to first service	40-80 days	60-65 days
Heat detection rate	40-90%	70% 90% for block calving
Calving to Conception interval	80-150 days	85-95 days
Pregnancy to first service	35-75%	55%

Poor fertility has both direct and indirect costs, with the main costs associated with ,loss of milk production, longer dry periods, increased AI and veterinary costs, higher culling rate, and loss of genetics

The table following shows the cumulative costs incurred with

a 6,000-litre cow at different calving intervals and conception rates.

**Table 2: The cost of delayed conception on 6,000 litres/cow/year**

	Target	Good	Problem	Severe problem
Calving Interval (days)	365	366-380	381-395	396-425
Calving to conception (days)	85	86-100	101-115	116-145
Net cost of lost time (£/cow/day)		1.73	2.30	2.86
Cumulative cost (£/cow)		26	60	146
Cumulative cost (p/litre)		0.43	1.00	2.43

Source: Esslemont and Kossaibati.

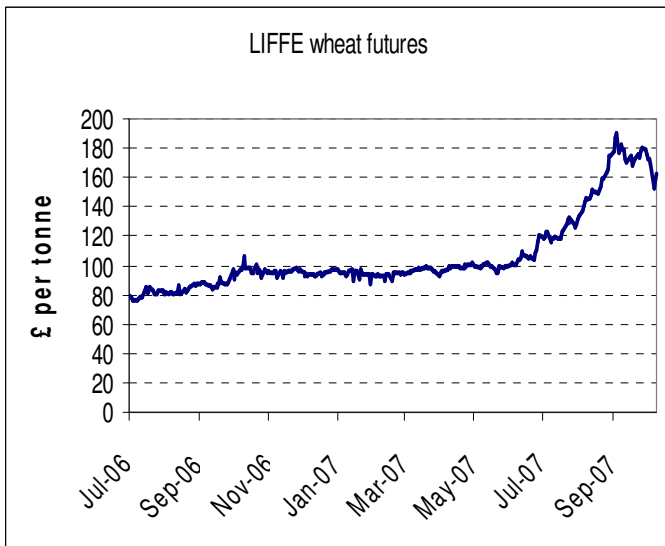
The cost of poor fertility and disease in UK dairy herds:

From the table above it can be calculated that a 6,000-litre cow has the potential to lose £2.86 for every day she is not in-calf over 365 days, therefore if you have an average calving interval of 400 days that is equal to £100 per cow per year.

## Paul Mardell, Select Services Group, SAC

## Cereal Market Outlook

UK grain prices have more than doubled in the last 12 months to reach record levels. In September this year the November 2007 LIFFE wheat futures contract reached a high of £190/t up over £100/t from a year ago. Since then the market has dropped, losing £17/t in one day before staging a partial recovery. Such massive market volatility brings unprecedented uncertainty to farm planning and marketing for both arable and livestock producers. What factors are likely to be important in driving the old crop market for the rest of the current season? What can arable producers do today to secure current forward crop margins for harvest 2008?



Source: HGCA

### Old crop wheat market

World wheat prices are at record high levels as a result of poor harvests and falling stock levels whilst world feed grain prices are more subdued on a record US maize crop. In the EU, falling grain production is likely to leave the region as a net grain importer for the first time since 2003. This helps explain why EU grain prices have moved even higher than world values as the cost of imports has risen.

Looking to the remainder of the season EU grain prices are likely to have to stay elevated above the world market for at least part of the season in order to ration domestic demand and facilitate imports.

High grain prices have started to reduce demand particularly in the livestock sector, which consumes 60% of EU grain output. Several grain ethanol plants have also been mothballed on the continent.

High prices are also encouraging feed compounders to seek lower priced feed grains from the world market. However, GM restrictions mean the EU cannot import US maize despite the fact that it is now \$200/t (£100/t) cheaper than EU wheat. Similar restrictions have blocked EU imports of US maize gluten. Instead the EU must turn to generally more expensive non-GM maize suppliers, such as Brazil, or to non-GM grains such as sorghum. Recently the EU has proposed suspending all grain import duties until the end of the season in June 2008. Right now high world grain prices may limit the impact of this move however later in the season it may become more significant especially if world markets were to fall. So for at least part of the remaining season EU prices are likely to be strongly influenced by the cost of imports. As we approach the

New Year the world market will start to focus increasingly on the prospects for the new crop.

### Marketing strategy for 2008

Low world grain stocks mean any serious weather disruption to the coming harvest could be explosive for the market. On the other hand higher plantings and 'normal' weather could permit stocks to be rebuilt and prices to ease. In addition the EU is seeing a return to zero set aside, which coupled to average yields could readily see a 20mt to 40mt increase in EU grain output in 2008. In which case the EU would lose its current price premium over the world market.

The truth is nobody knows what will happen to the price in the year ahead since it is largely down to the weather and no one can predict that. So this means farmers have to consider what is on offer to them today. In early September this year forward wheat prices for harvest 2008 exceeded £140/t ex-farm in Scotland. They have now fallen back to around £130/t currently. Just a year ago forward wheat prices were around £90/t ex-farm.

For a budget driven farm business looking to manage risk effectively there is little argument not to be forward selling at least a proportion of wheat tonnage at current prices. It is also the case that farmers may be less inclined to sell forward after experience this season. The danger of course is to end up fighting last year's battle. A backlash against forward selling could be unfortunate since forward values are so much higher than they were a year ago. Also there are alternatives to fixed price deals, which can set a minimum price with the potential for upside. Based on LIFFE exchange traded wheat options, minimum price deals can currently set a guaranteed price floor of around £115/t for November 2008. The deals that are available will vary over time, by locality and grain merchant or co-op. In view of the market uncertainty this is certainly a season where it will pay farmers to commit more time than usual to fully assess the different deals open to them.

Potential returns for malting barley are less clear cut. In England spring malting barley is trading at around £170/t to £180/t ex-farm for harvest 2008 movement. In Scotland most buyers are still to come out with firm malting barley prices for next season. There is likely to be significant discussion on both price and conditions over the next few months. Increased flexibility is likely to be a key issue with min – max deals and contracts linked to the wheat market some of the alternatives being considered.

**Julian Bell, Select Services Group, SAC**

# Straw Yield in Cereals

Although straw height is not always a good indicator of total straw yield it provides an indication of the amount of harvestable straw. There is more chance of harvesting 90% of the straw in a tall variety than in a short variety.

The Table below estimates the proportion of straw that might be harvested from the tallest and shortest cereal varieties on the current SAC Recommended List – assuming that cutter bar height, or stubble, is in the range 10-15 cm.

	Proportion of total straw harvested (%)		
	Winter wheat	Winter barley	Spring barley
Tallest varieties	85-90	88-92	82-88
Shortest varieties	82-92	85-90	78-85

Depending on variety choice and height of the cutter bar, taller varieties could increase straw yield by 2-3% in the winter cereals, or by 3-4% in spring barley. This is equivalent to 0.25 tonne straw per ha. If variety yields are factored in, then differences could be at least 0.5 tonne straw per ha between high and low yielding varieties.

It is well established that grain yield has a diminishing response to nitrogen fertiliser, especially at rates above 100 kg N per ha. Work at SAC, however, has shown that straw yield (and total biomass) continues to increase steeply at nitrogen rates above 100 kg per ha. This is not a recommendation for using very high fertiliser rates, but it indicates that the balance between grain and straw is likely to change in favour of the straw as nitrogen fertiliser increases from 100 to 150 kg N per ha. Crops with high biomass, or crops in which there has been high nitrogen offtake, could well have the highest straw yield and straw to grain ratio.

**Steve Hoad, Crop and Soil Systems Group,  
SAC**

## Stay on Top of Barren Brome

The Brome species are highly competitive in winter cereals. 5-7 plants /m<sup>2</sup> can reduce winter wheat yields by 0.5 T/ha to 1.0 T/ha depending on the density of the wheat crop. Of the five Brome species Barren or Sterile Brome is the most prevalent but Meadow and Soft Brome can be found in some areas of

East Scotland and have slightly different control strategies. All Brome species are becoming more prevalent in areas of short rotations with intensive autumn cereals and minimal tillage regimes without the use of stale seedbeds and stubble burning. Commonly Brome was confined to headlands but cultivations too close to field boundaries, use of contractors, contaminated seed lots and combines have seen it move across fields in some areas and become a “field weed”. This requires more integrated control measures and the avoidance of single shot control from a herbicide.

The key to Brome control is to identify areas of infestation and the species of Brome concerned. This can be difficult in the vegetative state, easier once they flower. Control measures with all Bromes must be to reduce dormancy, seed return, and spread by machinery into un-infested parts of the field. Barren and Great Brome requires dark followed by a vernalisation(cold) period to flower and set seed so the ideal control measure on infested ground is a spring crop using a stale seed bed followed by ploughing. If the plan is to follow with another winter crop and Barren/Sterile Brome is the species, lightly cultivate after harvest to encourage germination. If there is a good covering of chopped straw, cultivation may not be required provided there is moisture. Spray off all emerged Brome with Roundup. If time does not allow a stale seed bed plough to at least 12.5cm (5”) and

produce a well consolidated seed bed. The majority of seed then degrades naturally and the seedbed gives good conditions for a following residual herbicide to work efficiently.

If the species is Meadow, Soft or the less common Rye Brome they need light and warmth to ripen, mature and germinate. If possible delay ploughing or cultivation for a month after harvest, cultivate to create a stale seedbed and spray off as with Barren Brome or plough to depth.

Non crop cultural control options include headland and margin management with a competitive species, drilling grass strips, hedge management, and use of conservation headlands where Brome is a problem. In all such cases avoid non selective herbicides that can eliminate perennial species and encourage Bromes.

The use of herbicide to control Brome should be integrated with cultural control and not seen as a one shot. With the imminent loss of Isoproturon, (IPU) and Trifluralin, control of Brome will become more difficult and expensive. Traditionally Triallate (Avadex) applied pre-emergence or more commonly IPU, either alone or in combination was applied post emergence to give partial control of autumn

germinated Brome followed by spring treatment. While Avadex is still a possible option autumn treatments will now depend on the use of Flufenacet based products, either as Liberator (Flufenacet + Diflufenican) or in combination with Pendimethalin as Crystal. For optimum control both should be applied pre-emergence of the crop and Brome, (on light soils Crystal best applied at peri-emergence of crop), and will possibly need to be followed up with a spring treatment (from 1<sup>st</sup> of February) of either Attribut (Propoxycarbazone-sodium), Monitor, (Sulfosulfuron) or Pacifica (Iodosulfuron+Mesosulfuron). Attribut will control all the species of Brome while Monitor is less effective on Barren Brome than Attribut with good control of Soft, Meadow and Rye Brome.

SAC will be conducting trials in 2008 on cost effective Brome control strategies. For more information contact Mark Ballingall, SAC Weed and Herbicide Consultant or any SAC Farm Business Service Consultant.

**Mark Ballingall, Select Services Group, SAC**

## Herbicide Replacements for IPU

The loss of IPU, both as a straight and in co-formulations in products such as Javelin, Panther, Javelin Gold, will put pressure on growers and advisers to become more creative in their choice of herbicides for Annual Meadow Grass and Brome control in autumn cereals. The issue is most relevant for Brome control in Winter Barley where there are fewer alternatives compared to Wheat. Grass weeds and certain broadleaves, e.g. Fumitory, will become more difficult and costly to control compared to current standards. This is compounded by an increase in min till cultivations and in the case of Fumitory by the over use of Diflufenican.

IPU allows growers and advisers great flexibility in control of Annual Meadow Grass and is an important precursor in Brome Control programmes in Wheat and Barley. The approved alternatives are largely based on earlier applications, either pre-emergence or early post emergence of both crop and weed. This is particularly important for Brome control programmes and if on min till cultivations.

Herbicide replacements to IPU were initially formulated for the English Black Grass market and have been adapted in terms of a lower dose for Annual Meadow Grass and higher rates for Brome. In the main they rely on the active Flufenacet

for Meadow Grass and Brome. Flufenacet is not sold as a straight product but in mix with:

Diflufenican, sold as Liberator by Bayer Crop Science  
Pendimethalin, sold as Crystal by BASF

Both products will only control Annual Meadow Grass up to 1 tiller and are best applied either pre-emergence or peri-emergence of the crop. This also applies for Brome control although the application rate is higher. Both Liberator and Crystal will offer the only real alternative to Brome control in Winter Barley post IPU.

Other options for Meadow Grass are based around Defy, active ingredient Prosulfocarb. This is not a stand alone product and needs to be used in mix with Hurricane, (straight Diflufenican) or low rate Picon (Pendimethalin + Picolinofen) or Lexus (Flupysulfuron). Meadow grass is controlled pre-emergence up to 2 leaves.

For “fire brigade” control of well tillered Meadow grass, in wheat only, Bayer Crop Science will be test marketing a new product, Othello this autumn. This is based on Diflufenican, + Iodosulfuron +Mesosulfuron e.g (Hurricane + Hussar + Atlantis). Othello also has a place in a Brome programme in wheat.

**Mark Ballingall, Select Services Group, SAC**

## Rising Timber Prices

After many years in the doldrums it is good to report that prices paid for timber have been rising strongly for many months. For the year to March 2007, standing sale prices received by the Forestry Commission rose by 13% while the private sector has reported increases of up to 20% over the same period. Prices are now the highest seen for ten years. The rise has been higher in the south than in the north of Scotland.

To illustrate, a recent clear fell on an estate near Aberdeen in July received offers of £23.50/tonne for green logs (the best quality), £6/tonne for spruce pulp and £2/tonne for chipwood. For a similar property in September green logs received an offer of £27/tonne. Prices for thinnings are about £2/tonne less.

The market for small roundwood is strengthening because wood-fuelled power stations such as E-ON at Lockerbie are coming on stream while the mild winter in Scandinavia reduced harvesting leading to some reduction in supply of logs. The likelihood is that prices will continue to rise, or at least stabilise at current levels, for a while yet.

There will be no restocking grant as such under the new forestry grants to be introduced with the Rural Development Programme next year. However, most people will be eligible for a restructuring grant, which will have much the same purpose. These will be paid as a percentage of a standard cost, which varies with the type of woodland from £966 to £2065 per hectare, but no details are available yet of the percentage rates payable.

If you have woodlands that have not been thinned for many years or older plantations that are starting to blow then now would be a good time to consider harvesting.

SAC's woodlands consultants can organise and supervise timber sales. For more information contact Simon Jacyna in Elgin, 01343 548787 or Jim Reilly in Turriff on 01888 563333.

**Simon Jacyna, Farm Business Services  
Group, SAC**

## Mapping and Registering Woodlands

If you have woodlands of any kind on your farm it will be compulsory for you to declare them on your IACS form in 2008. This is because the Good Agricultural and Environmental Conditions, (GAECs) apply to ALL land on the holding, not just land that is used for traditional agricultural purposes.

This means that you should check your field map now and ensure that all woodlands have a Field Identification Number, (FID). This applies even if they are not in any grant scheme. If not, then you should complete a Land and Business Change Form, (LBCF), to record woodlands being mapped for the first time. At the same time you may find it helpful, but not essential, to split fields in which there are newly planted woodlands, or woodlands brought into management in a WGS or SFGS, so that each wood has its own identity and is not recorded as part of a larger field. This may ease record keeping in the future.

From 15<sup>th</sup> October 2007, remaining instalments of grant under most Forestry Commission schemes will be paid by SEERAD, and FID numbers will be needed to complete claims for these. If you do not have the FID by this date, you will need at least to have applied for one.

This mapping and recording process also applies to all forest owners who do not have a farming business but are in receipt of grants. They are coming into the IACS system for the first time and the large number of LBCFs submitted has already led to substantial delays in processing. You should get your form off as soon as possible.

There is one bonus to this - the woodland area is included in the calculation of your entitlement to Tier 2 LMC payments.

Your local SAC adviser will be pleased to help you complete the LBCF and answer any queries you have.

**Simon Jacyna, Farm Business Services  
Group, SAC**