

NEWSLETTER

January 2008



After the last newsletter and the over-emphasis on feed, in this issue we continue the seasonal theme and look at crops to grow in 2008, plus a few other items which I hope you will find of interest.

In the current climate of high cereal prices, I am sure that many will be thinking about taking advantage of this by looking at rotations and considering the option of sowing more cereal crops.

However, this may not always be suitable and could interfere with the building of long term fertility and I would urge you to consider the implications of making any business changes before jumping on the band wagon purely for the sake of short term monetary gains.

The current market situation does put under the spotlight the viability of all organic enterprises.

If you need help with the new funding proposals under the Scottish Rural Development Plan please contact me as I may be able to help with specific information on organic funding as well as other Tier III measures which may apply to your overall farm business.

It should also be noted that the new Plan is open to non-farmers as well, so organic food processors wishing to develop their business may also be eligible if they can demonstrate contribution to the wider rural economy.

Debs

In this Issue	Page
SOPA Board Contacts	2
Paolo Berardelli joins the Board	3
Certification Corner	4
Permitted Inputs	5
Grass and Fodder Crops	6
Chicory and Plantain	7
Chicory costs	8
Forage Brassicas	9
Forage Brassicas cont	10
SOPA Associate Members	11
Advertising	12
Nutrients in a Nutshell—N	13
Nutrients in a Nutshell—P	14
Nutrients in a Nutshell—P & K	15
Nutrients in a Nutshell	16
Marvellous Muck	17
Farm Planning	18
Diary Dates	19
Classifieds	20

This newsletter is published by
Scottish Organic Producers Association, SFQC,
Royal Highland Centre,
10th Avenue, Ingliston, EH28 8NF
Tel 0131 335 6606 Fax 0131 335 6601
www.sopa.org.uk info@sopa.org.uk

Scottish Food Quality Certification (SFQC)

has made every effort to ensure that the information contained in this Newsletter is accurate. No legal responsibility is accepted for errors, omissions or misleading statements in that information caused by negligence or otherwise. No responsibility is accepted in regard to the standing of any firms, companies or individuals mentioned in the Newsletter.

The SOPA Board

John Hamilton, Chair

Aikengall

Dunbar

East Lothian

EH42 1SG

Tel 01368 840 342

Stewart Jamieson, Vice Chair

Kirkland Farm

Thornhill

Dumfriesshire

DG5 3AD

Tel 01848 331 231

Richard Allison

Muirburn Farm

Skirling

Biggar

Lanarkshire

ML12 6HL

Tel 01899 860 224

Sandy Smith

Haughton

Glenkindie

Alford

Aberdeenshire

AB33 8SJ

Tel 01975 641 227

Andrew Stoddart

Coulston Mains

Haddington

East Lothian

EH14 4PB

Tel 01620 823 596

Paolo Berardelli

(co-opted in 2007)

Archindaul

Spean Bridge

Invernesshire

PH34 4EX

Tel 01397 712 159

Duncan Todd
Company Secretary
SAOS
The Rural Centre
West Mains
Ingliston
EH28 8NZ

New Board Member

In November 2007, Paolo Berardelli was co-opted onto the Board of SOPA.

Paolo Berardelli – Profile

I am a 41 year old full time hill farmer from the West Highlands. After completing a degree in Agriculture in Edinburgh and a few years travelling I ran an arable/stock farm near Turriff. I returned to the home farm near Spean-Bridge in 2001.

Family

I run the farm in partnership with my Mother and Father and wife Elspeth. Elspeth and I have four children, all under 9 years. My younger brother lives on the farm and is a partner in a biomass heating business - Highland Wood Energy. Family has always been very important to us all and (barring the odd minor fall out) we all get on well and muck in where necessary.

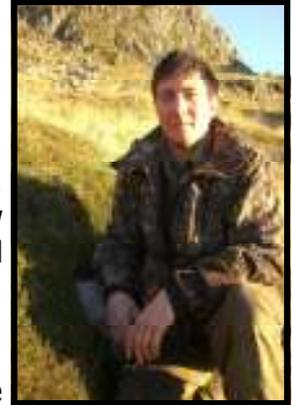


Farming

Here at the Great Glen Cattle Ranch we run 100, mostly pedigree Galloway, sucklers and 400 BF hill ewes. The farm has always been run extensively and conversion to organic in 2007 was fairly straight forward. The stock is well suited to minimal inputs of both bought in feed-stuffs and vet & med. We also run 800 BF 'mountain' ewes (goats!) in Glencoe where the ewes graze up to 3700 ft. This unit has been organic since 2002 and I must say that the OAS and the organic premium have been crucial in keeping this unit viable. I am also responsible for the National Trust's farming interests in Glencoe. We sell all our store calves and lambs direct to A&D Stoddart, Penicuik. This store producer – finisher link has been ongoing for 6 years now and has become a valued relationship. I have become more and more committed to farming organically and I have been trying convince anyone who will listen (and many who will not!) of its benefits.

Stalking – We also run a commercial deer stalk, taking 20 stags and 30 hinds annually with paying guests. This is a job I relish and very much look forward to. The wildness of the West Coast coupled with the challenge of man against beast make for many inspiring and exciting days on the hill.

I feel privileged to have been co-opted on to the board of SOPA. I particularly hope to represent the views of fellow hill and upland organic producers (see page 2 for contact details).

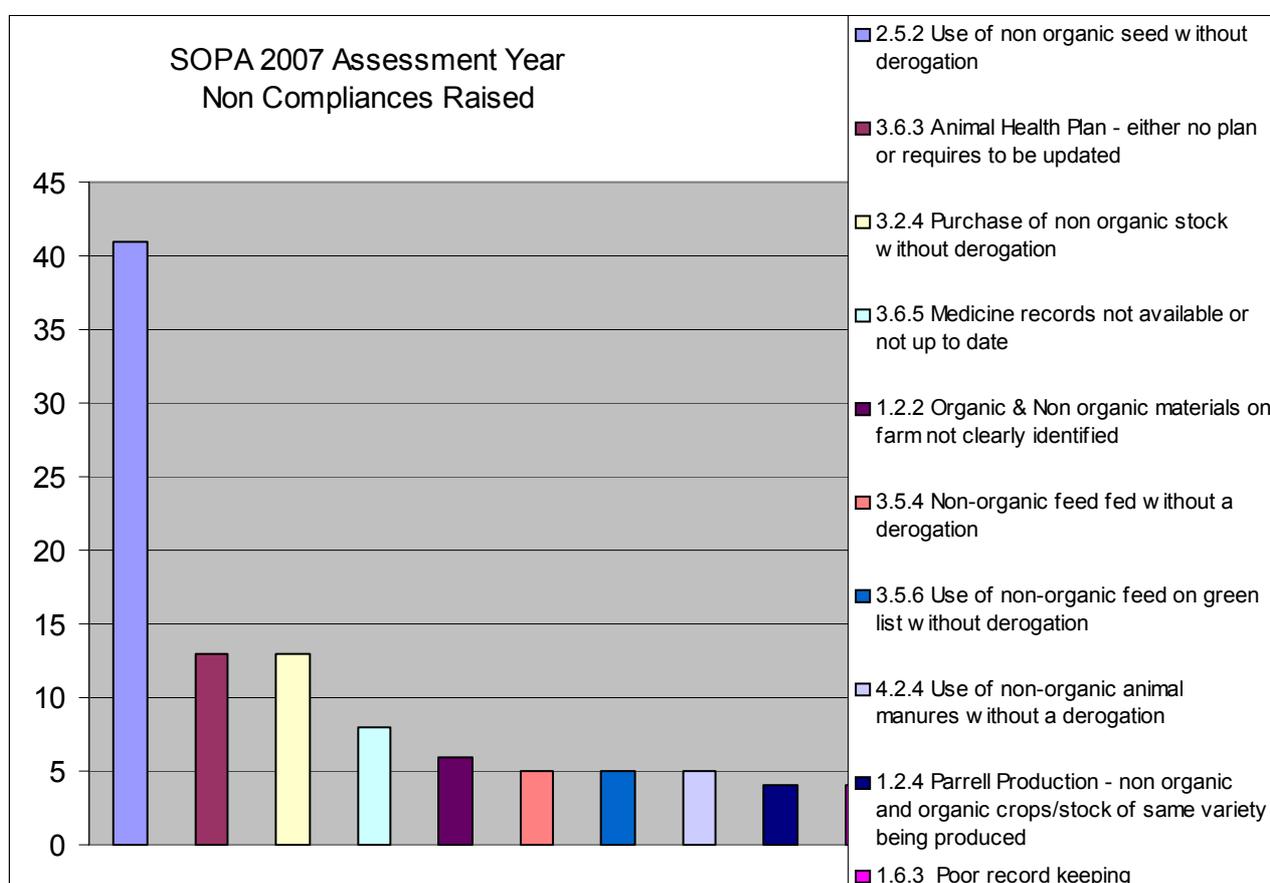


Certification Corner

All SOPA members will be familiar with the annual farm and premises inspection for organic certification, but for Certification purposes the verification process does not stop there!

After the inspection, your inspector will return to the SOPA office the inspection report (all the papers completed at the kitchen table) plus the pink non-compliance form you signed before the inspector left.

These inspection reports are carefully scrutinised by Jane Ellis and David Michie and any gaps or inconsistencies are picked up. Occasionally there are non-compliances which need to be rectified before a certificate is issued.



Every quarter, the TAC (Technical Advisory Committee) meets to scrutinise inspection reports, discuss non-compliances and resolve any technical, standard or scientific issues which may affect the SOPA certification of Organic Food Production and Food Processing.

In addition to this, the SOPA Certification team (Jane and David) and the Inspectors are subject to annual UKAS inspection to ensure correct procedures and full audit trails are being enforced.

As part of continued protocols to improve product integrity and the inspection process, during 2008 SOPA will also be undertaking random residue testing of produce and commodities.

SOPA Standards—Permitted Inputs

Compounded chemical fertilisers are prohibited in organic systems. However it is sometimes necessary to supplement soil fertility status and these permitted inputs are defined carefully. In general, SOPA expects soil fertility to be sustainable within the organic unit which means that recycling nutrients should be achieved through the permitted inputs green mulches, composts and FYM (farmyard manure).

But what else can you use?



PERMITTED INPUTS

PHOSPHATE (P)	POTASSIUM (K)	MINOR MINERALS	TRACE ELEMENTS
Natural Rock Phosphate (e.g. Tunisian Rock Phosphate or Gasfa)	Wood ash as an ingredient to composts and manures	Dolomitic limestone	Stone meal (ground basalt)
Calcined aluminium phosphate rock (eg Redzlaag)	Plant extracts eg. Kali Vinesse	gypsum	
		Calcium carbonate eg ground chalk, limestone, marl, maerl, phosphate chalk	
		Epsom salts (magnesium)	
		Kieserite (magnesium rock)	
		Clays (eg perlite and vermiculite)	

Prior approval is required for

Potassium sources (natural rock potash such as Andalurian, sylvinite, kainite, sulphate of potash)

Sulphur

Trace Elements such as boron, copper, iron, manganese, molybdenum, selenium, cobalt, zinc

Basic Slag

Various other miscellaneous and specific products—refer to Section 4.4.1 in the SOPA Standard

SOPA Approved fertiliser inputs such as seaweed products and other trade-registered soil inputs—check for the SOPA Approved Product logo and you know you can use it.

Quality Animal Feed from Grass and Fodder crops

Andrew Best from Watson Seeds Ltd discusses organic seed varieties and availability...

Trial Plot of Merian Red Clover



Forage finishing lambs

As we begin 2008, the outlook for all farm inputs from fuel to feed is very bleak with no sign of a reduction in prices. This market outlook emphasises the need to produce as much feed energy and protein from the farm, either from cereals, grass mixtures or forage crops.

Formulating a grass mixture to provide energy, WSC (sugar) and high yields is not an easy task as a balance has to be found between availability of the seed and plant characteristics, i.e. D.value, yield, winter hardiness and sward density. In an organic situation a further complication arises from the use of organic constituents in the mixture. This has increased this year to 65% from 60% in 2006 and by 2009 will reach 70%. The atrocious weather of 2007 has also created its own problems with a poor harvest of seed grasses, leading to a shortfall in seed production.

At John Watson Seeds it is our policy to purchase only SAC 1st choice varieties for our organic seed. These consist of varieties such as intermediate PRG's Premium (Diploid), Napoleon (Tetraploid) and late PRG's Foxtrot, Lasso (Diploids) and Tivoli (Tetraploid).

We have ample stocks of all our organic Perennial Rye Grasses (PRGs) for the whole of 2008 and would therefore think it unlikely that derogations will be given for grass and clover mixes this season.

Our organic grass mixtures are based on perennial ryegrass, with the inclusion of white and red clover, with the Tetraploid content having been adjusted to encourage the development of white clover. Tetraploid grasses have a slightly more open growth pattern and this encourages the development of the clover stolons. The white clover can be cut or grazed and is more persistent than red clover, although it is lower yielding. Our aim is to produce a sward containing 35-50% white clover. To enable the clover plant to fix the maximum nitrogen, a gap of thirty days should be left between grazings. This is because most of the nitrogen is fixed in the later stages of growth and early grazing reduces nitrogen fixation.

The dry matter yield of a white clover sward should be around 10-13 tonnes/ha and should be capable of achieving the same production as a conventional sward with artificial fertiliser.

White clovers are classified by the leaf size, i.e. small, medium and large. As a guide the smaller the leaf the more suited to close grazing whilst the medium to large leaf clovers are more tolerant of a cutting regime.

The white clovers we are using for 2008 are as follows:-

Varieties	Leaf Type
Crusader	Small
Action	Small
Avoca	Medium
Merwi	Medium
Barblanca	Large

Red clover is used principally for silage production and is higher yielding than white clover. It has a high protein content of 20% and our experience has shown a benefit in animal performance, particularly when coupled with the high sugar grasses used in our organic mixtures.

Watson Seeds are happy to make up special mixtures to suit specific needs and add herbs such as chicory and ribwort if appropriate.

Forage Crops

As the grass growing season declines the next challenge on the farm is to produce further energy and protein for farm livestock. During 2007 we, in conjunction with the SAC planned a demonstration of forage crops that would provide high quality feed from July to January (See page 10). Five 0.33Ha plots of forage brassicas (kale, rape, stubble turnips, hybrid kale/rape and a rape /turnip mixture) were evaluated in a feeding period from November 3rd to December 12th using Blackface cross store lambs. The trial showed that over a short finishing period good returns are possible with high forage yields and good lamb performance.

Watsons Seeds Ltd, Skateraw, Dunbar, East Lothian,
EH42 1QR Tel: 01368 840655 Fax: 01368 840677
enquiries@watsonseeds.com

Chicory and plantain forage mixture for lamb finishing

The following trials have not been conducted under organic conditions or according to organic standards, but with the results being potentially significant for organic farmers, SOPA is investigating options for organically managed trials in 2008.



This photograph of a pure chicory stand was taken in November 2007

Low prices for hoggets this spring were a big shock to finishers. We need crops that can rapidly finish lambs in a short period – equivalent to putting them inside on barley. And we want to do this early in the autumn while the weather is good and daily gains not affected by bad weather. This way lambs can go away with minimum costs.

Chicory

Not only does a pure stand of chicory finish lambs but also in SAC trials it reduced worm burden by 40% over a short term, so it can save the costs and labour of drenching. It is highly digestible and can be regrazed – look on it as a 'permanent rape crop'. Typically on highly digestible feeds there can be loose dung and dirty tails to dag out before lambs are sent away. To counteract this we looked at adding plantain as a complimentary forage component that will also regrow after grazing.

Plantain

NZ farmers add an improved variety of Plantain (Ceres Tonic) when sowing out grass. This is done to improve mineral status of sheep, reduce scouring during wet weather and reduce dagging. There are no claims for it to have anthelmintic properties – apparently it slows down food passage in the gut due to mucilage production, reducing scour. Recent trials show it significantly improves liver copper and selenium content. Advan-

tages over perennial ryegrass in dry matter production were also recorded in dry North Island conditions and NZ farmers are encouraged to add 20 % Tonic as a complimentary pasture component to ryegrass pasture mixes to improve mineral balance.

Advanta seeds (www.advantaseeds.co.uk) now import Ceres Tonic plantain – a flexible forage herb with a big fleshy leaf. The brochure (www.pggseeds.com) claims it can support gains of over 200g/day.

Working at Auchincruive farm a mixture (90:10) of Grassland Puna 11 chicory and Ceres Tonic plantain was direct drilled on 4th July after Roundup treatment to burn off grass. Costs per acre were estimated and are shown in Table 1 overleaf.

Lamb finishing

On 3rd September 123 lambs, all under 35 Kg were put on a 7 ac. field of the mix and grazed for 28 days. Lambs had a FEC (faecal egg count) going to the sward of over 700 egg but were not dosed to save labour and anthelmintic cost. The lambs were not daggy and most produced formed droppings, although early on some were quite runny. Daily gain for a month was 300g/day, which is an excellent rate of growth at this time of year. At the end of the trial all except 5 lambs (which were less than 40 Kg) were finished, 70 weighed 42 Kg and 58 were 40Kg. Thus the field finished around 18 lambs /ac at a cost of £5.50 /lamb. To do the same job on concentrates indoors would have cost £6.50 for feed alone with the additional costs for labour for feeding, dosing and straw probably coming to well over £10/ head. In addition the chicory /plantain mix has now recovered from the hard grazing and may finish a further 5-10 lambs /ac or could be used to flush thin wormy ewes. It will be also available next year as a deworming and lamb-finishing crop.

John Vipond and Raymond Crerar

john.vipond@sac.co.uk

Costs of Chicory and Plantain Forage mixtures for lamb finishing

Table 1

Description	£/unit	Area	Total Cost/ac
Puna 11 Chicory Seed	£13/kg	3.6kg	£46
Ceres Tonic Plantain Seed	£8.50/kg	0.36kg	£3
Spraying Contractor			£4
Roundup	£4.71/l	0.81l	£4
Direct Drilling			£19
Fertiliser		75kg/ac	£10
Fertiliser	£140/t	75kg/ac	£11
TOTAL COSTS			£97



**Approved Organic
Animal Feed Supplements**

**Made from seaweed harvested from
Shetland's cool, clear waters**

Feeding seaweed may

- Reduce mastitis in cows
- Result in less wool shed on sheep
- Give better lamb growth
- Reduce intestinal parasites in pigs
- Give your animals overall health and wellbeing

www.seaweedproducts.co.uk

Free Delivery for Bulk Orders

AVAILABLE IN
20 kg *Sea-Lik* Seaweed Feed Lick Buckets (Fully Organic)

Organic Seaweed Liquid Extract in 210ltr and 1000ltr
containers

Organic Seaweed Granules/Meal for direct in-feed

**Also available are Organic
Seaweed Extract and Granular
Fertilisers for plant feeding**

Böd Ayre Products Limited
'Hamnavoe' Lunnans Vidlin Shetland
ZE2 9QF
Tel/Fax: 01806577328
Mobile: 07776070028



FORAGE BRASSICAS FOR LAMB FINISHING: TRIAL RESULTS

John Vipond, SAC, reports on the forage trials at Sunnyside Farm, Midlothian

(nb the trials are non-organic)

Rising cereal prices show outdoor finishing systems on forages have a new role but with rising fertiliser costs we need high yields from low cost palatable forage crops that achieve high lamb growth rates and maximise output /ha of crop. SAC trials supported by Watsons seeds, Advanta and Rumenco give some pointers to varieties and usage.

Five 0.33Ha plots of forage brassicas (kale, rape, stubble turnips, hybrid kale/rape and a rape /turnip mixture) were evaluated in a feeding period from Nov 3rd to December 12th using Blackface X store lambs (32-36Kg). Whilst on the crop lambs had free access to minerals with the correct composition to balance for trace element deficiencies and access to water and an area of grass runback. Prior to slaughter lambs were belly clipped, in the abattoir carcass weight and MLC grade for fatness and conformation were recorded. Estimates of daily gain between two weights measured 30 days apart and carcass daily gains were estimated.



Crops sown	Fresh yield Tons /Ha	Varieties used (crop yield shown by variety)	Preference shown for	Lamb Daily Gain (g/d)	Carc Gain (g/d)	Killing Out %
Forage rapes	40	Hobson (34) Stego (45)	Hobson	185	128	46.7
Stubble turnips	114	Samson (116) Delilah (112)	Samson	209	133	45.4
Hybrids	51	Swift (71) Pulsar (31)	Pulsar	246	143	45.1
Kales	58	Maris Kestral (68) Caledonian (48)	No preference	210	132	45.7
Mixture of Hobson, Stego and Massif turnip	44	Rape +-turnip	Within mix no preference –leaf eaten first	251	135	44.2
sed	na	na	na	24	9.8	0.84
Level of significance	na	na	na	p>0.05	NS	P=0.05

FORAGE BRASSICAS FOR LAMB FINISHING: TRIAL RESULTS

Crop yield for the stubble turnips was exceptional – these were sown around 3 weeks earlier than the normal date. Kale yields were lower than expected- here the crop was sown later in the year than ideal (May) for a full crop. With no replication differences between varieties are unreliable and differences between plots in yield could be different in different years.



The mixture (Hobson/Stego/Massif) and the hybrids gave significantly higher daily gains, kale and stubble turnips were intermediate and rape the poorest. All these growth rates are high for forage brassicas - possibly because lambs were weighed empty at the first weighing and full at the second. Estimates of daily carcass weight failed to reach significance. There were significant crop effects on killing out % reflecting possibly gut fill or other non- carcass components. Because of the high yields and lower seed costs the stubble turnips gave the highest return but the yield was exceptional and there was difficulty in utilising all of them.



When sowing out a forage brassica crop on underperforming pasture it is necessary to account for some of the increase in future grassland performance that will accrue from a reseed. Price movements of finished lamb often heavily influence profitability from lamb finishing, but it is risky to rely on this. This trial shows that over a short finishing period of stable prices good returns are possible with high forage yields and good lamb performance.

Dr John Vipond , SAC Sheep Specialist, Bush Estate EH26 0PH , Tel 0131 535 3215



Local Food Apprenticeships part-time or full-time

Highlands and Islands Local Food Network is a group of 200 farms and crofts, that work together to grow and sell fresh food direct to the public. We are looking to recruit more farmers, crofters and gardeners who would like to become growers of vegetables and fruit for sale in the Highlands and Islands.

You will learn the trade from people already doing it, and cover both the technical skills needed to grow great food, and the business skills to make a living at it. Training for 2008 season starts February; and we offer a nationally recognised certificate.

Places available for both full time apprentices, working on one of our member farms; and for part-time, working on your own land.

For full details and an application pack please call Gail on 01381 600525

email gail@hilocalfood.net or download from www.hilocalfood.net/training



ethos

range of minerals

Organic approved livestock feeds and minerals

Friendly, professional service throughout Scotland



mobile mill/mixer

Norvite

Wardhouse Insch

Aberdeenshire AB52 6YD

Tel: 01464 831261 Fax:01464 831400



email:

sales@norvite.com



Spring Seed
Grain, Grass
Seed Mixtures
and Root Seeds
for the
Organic Grower

Telephone: Haddington (01620) 823305
Fax: Haddington (01620) 824406
Email: dodseed@lineone.net

Rockdust® is the NEW ORGANIC! !!

ANGUS HORTICULTURE LTD

Scotland's leading supplier of plant nutrients to the
AMENITY, GARDENING and FARMING markets

420 million year old volcanic dust

> 50 minerals & trace elements for
better soils, compost, crops and
our health

Carbon off-setting & reduced
pollution



SEER® Rockdust® - top dressing

SEER® Rockmix™ - top dressing

SEER® Rocksoil™ - full growing

See website for testimonials and more info

www.angus-horticulture.co.uk

BULK LOADS SUPPLIED
20kg bags /4kg buckets /450g sachets

LOCAL STOCKISTS REQUIRED

Contact Jennifer now on

M: 07715 707009

jen@angus-horticulture.co.uk

Polmood, Guthrie
FORFAR, Angus DD9 2TW
Tel: 01241 829049 / F: 01241 829043



- ✦ Organic feed blends made to your requirements
- ✦ Organic livestock pellets & rolls
- ✦ Other Organic raw materials
- ✦ Organic molasses and soya in stock soon
- ✦ We also buy organic cereals and pulses

Malcolm Johns
Kinnairdy Organics,
Mains of Kinnairdy,
Bridge of Marnoch,
Huntly, Aberdeenshire, AB54 7RX

Tel. 01466 780 856 Mob. 07803 142 167

johns@kinnairdyorganics.freemove.co.uk

Future Farmer
Award



The Future Farmer Award

Promoting practical ideas for improving the environmental sustainability of farming in Scotland

The Future Farmer Award is a new initiative funded by the [Elizabeth Murray Trust](#). Each year a trailblazing Scottish farmer will be given £4,000 and a package of practical support to help them promote their ideas to other farmers and land managers. Applications for the Future Farmer Award are welcome from anyone farming in Scotland who is keen to inspire others to try practical ideas for improving the environmental sustainability of farming. The type of approach which the Future Farmer Award seeks to promote include:

- Minimizing downstream flooding by managing soils and vegetation to slow rainwater run-off;
- Using traditional breeds of livestock with characteristics which make the animals well adapted to the particular farm;
- Integrating native woodland management with grazing livestock;
- Reducing the carbon footprint of a farm by reducing inputs and developing local markets to minimize the food miles of produce sold;
- Developing new ideas for productive and sustainable management of hill land;
- Creating the right conditions for commercially useful 'wild' plants to grow;
- Other ideas, new or old, which could improve the environmental sustainability of farming in Scotland.

Applications by email should be sent to anna@futurefarmer.org.uk

Postal applications should be sent to:

Anna Ashmole, Future Farmer Award, Forresthill Cottage, Broughton, Biggar, ML12 6QH.

**ORGANIC
FEEDS & SEEDS**

Harbro
ANALYSTS LIMITED - 181, BATHURST ST

Now available

**Livestock Feeds –
full range available**

**Grass Seeds – 6 mixtures to
suit your requirements**

**For more information, contact your
Harbro sales specialist or sales office**

Inverness

01463 701990

Lesmahagow

01555 820358

Turriff

01888 545200

Yorkshire

01430 432121

**Harbro Limited
Marlothill, Turriff, Aberdeenshire AB53 4PA**



**The Growing
Seed Company Ltd**

**WE SPECIALISE IN ORGANIC FARMING
to supply:**

- ✓ Organic Clover Blends
- ✓ Fertility Building Mixtures
- ✓ Organic Herbage Seed Mixtures
- ✓ A wide range of Organic Green Manures
- ✓ Delivery throughout the UK
- ✓ All forage mixes have 85 % organic content as per UK requirements for 2008

For orders, enquiries, advice call

07875 239608

or email growingseedcompany@yahoo.co.uk

PO Box 8716, Oakham, LE15 0DB

NUTRIENTS IN A NUTSHELL

Nitrogen

Biological Nitrogen Fixation

Legume	kg N/ha/yr
White clover	250
Red clover	240
Lucerne	500
Field beans	200

The main source of N in the organic system is through biological nitrogen fixation (BNF) by legumes. pH is also important for certain legumes (lucerne has a lower tolerance to acidity than white clover for instance). N mineralisation will only occur once soil temperature reaches 6°C. Soils with a lower water content will have lower levels of micro-biological activity because moisture is needed for the micro fauna to survive, yet water-logged soils will lack oxygen and micro-organisms will asphyxiate. Microbiological activity can be increased by applying composted FYM.

The Scottish PEPFAA Code and NVZ Regulations state the limit of soil N applications should be 170kgN/ha/yr. Although it is not likely that organic systems will exceed this rate, keep an eye on high clover swards.

The organic farmer can to a greater extent control leaching losses through timing of N supply. This generally involves the use of catch crops over wet months where increased rainfall would otherwise drain away soluble N. The aim should be to immobilise or trap soluble N in the soil or increase take-up of the excess N through plant requirements.

Crop Off-takes

Crop	Grain N Off take (kg/ha)	Straw N Off take (kg/ha)	Total N Off take (kg/ ha)
Wheat	130	17	147
Barley	100	25	125
Oats	100	15	115
Beans	176	-	176
Potatoes	150	65 (haulms)	215

Figures published by Watson, C.A., Atkinson, D., Gosling, P., Jackson, L.R., Rayns, F.W., 2002 *Managing Soil Fertility in Organic Farming Systems*, Soil Use and Management, vol 18, 239-247

TOP TIPS FOR NITROGEN CONTROL

1. Legumes are the single most important source of Nitrogen. Look after them.
2. Monitor offtakes so that you know how much N is being used
3. Reduce N-losses by keeping the soil in green cover especially over winter
4. Breakdown of green matter is related to the Carbon:Nitrogen ratio of the green matter. Too much woody, stemmy carbon products and nitrogen is actually used up to break down the carbon and so not available to the growing plant.

NUTRIENTS IN A NUTSHELL

Phosphorus

Generally, organic soil inputs are based on long-term solutions and this is certainly the case with phosphorus which is a nutrient of very limited quantity, mobility and solubility in the soil. It is essential for photosynthesis and energy formation. It is also crucial to legume nodule growth and can therefore affect the availability of N.

Inherent soil status of P ranges between 0.5 to 4t P/ha in the top 20cm of UK soils (quite low). However, availability will be restricted if these reserves are subject to heavy cropping, silage or grazing as high yields generate high P off take, especially in straw and silage. Increased root surface area, e.g. hairy roots, are more efficient at taking up nutrients due to exposure in the soil. Root growth is important for P uptake so situations which affect root development must be considered – for example soil compaction, poor structure, waterlogging, and soil temperature.

Rock phosphate is applied as a ground powder and can supply 27-32% P₂O₅. This is released slowly over several years. It is suitable for acid soils in high rainfall areas and shows best results on grassland.

There is also a soft ground product from Gafsa in northern Africa which is of a finer grade and is more soluble therefore is more readily available after application.

Crop P off take

Crop	Grain P ₂ O ₅ kg/ha	Straw P ₂ O ₅ kg/ha	Total off take kg/ha
Wheat	60	7	67
Barley	50	6	56
Oats	50	9	59
Beans	24	-	24
Potatoes	75	8 (haulms)	83

Figures published by Watson, C.A., Atkinson, D., Gosling, P., Jackson, L.R., Rayns, F.W., 2002 *Managing Soil Fertility in Organic Farming Systems*, Soil Use and Management, vol 18, 239-247

Continued over...

NUTRIENTS IN A NUTSHELL

Phosphorus Sources

Basic slag is a by-product of the steel industry and is not commonly available. It is a slow-release product and contains Ca and some trace elements so has a liming and basic nutrition benefit. It supplies 5-22% P_2O_5 .

Fresh seaweed has excellent properties including phosphate of 0.89kg/fresh tonne and many trace elements. In recent years there have been great developments in the availability of seaweed to inland areas and all SOPA Approved seaweed products are sustainably harvested.

Deeper rooting crops invade deeper soil profiles and draw up otherwise inaccessible P. Soil pH also affects P uptake through P solubility. In low pH (acid) situations aluminium (Al) and iron (Fe) lock up P, whilst in high pH soils calcium is the main reactant with P to form soluble calcium phosphates. Generally P is most available in pH range 6.0 – 7.0.

Potassium

Potassium is essential for healthy photosynthesis and protein production. Without K, protein transfer from leaves to seeds or root is hindered and the transfer of nutrients from cell to cell is slowed. Plant growth and crop quality is therefore directly related to K supply. FYM and hen pen are the best sources of K in organic systems. The lush green patches you see in grazed fields show the high K levels in urine, so these patches often indicate possible low soil K status in the rest of the field.

There is also a concentration of potassium held in the soil – either in solution, as 'exchangeable' or 'non-exchangeable'. It is a complex relationship of chemical reactions, but the important principle is that the organic matter content of soil and the soil type are important. Dry, sandy soils will have inherently lower K reserves due to basic mineral composition and poor structure, and a lower available water content which affects the availability of K. Also, if root growth is poor or soil structure hinders root development, plant uptake of K will be restricted. It is therefore important to maintain good soil structure with good amounts of organic matter, and to avoid waterlogging and compaction. Straw is also a valuable on-farm source of K.

Wood ash is a traditional K input but is of limited supply and is difficult to handle. If sourced, it must come from non-chemically treated wood. The K_2O content can be as much as 7% K_2O .

NUTRIENTS IN A NUTSHELL

Potassium Continued

Other K sources need permission from SOPA

Potassium salts such as sylvinite and kainite.

These products are compound salts of potassium chloride and magnesium sulphate. The chlorine components can be damaging to some soil microbes. Potassium sulphate is more useful because it is more soluble and therefore more immediately available. The inclusion of sulphur may also be valuable if soil analysis indicates S deficiencies.

Shale products – rock potash and Highland potash which contain other nutrients such as magnesium, calcium, silica and aluminium. These shale products are long-term activators with lower K₂O values (~10%) than potassium sulphates (~50%).

K loss in crop off takes

Crop	Grain kg/ha K ₂ O	Straw kg/ha K ₂ O	Total kg/ha K ₂ O
Wheat	42	40	82
Barley	33	46	79
Oats	33	74	107
Beans	80	-	80
Potatoes	300	143 (haulms)	443

Figures published by Watson, C.A., Atkinson, D., Gosling, P., Jackson, L.R., Rayns, F.W., 2002 *Managing Soil Fertility in Organic Farming Systems*, Soil Use and Management, vol 18, 239-247

Luxury uptake of K occurs particularly on grass, where all available K is taken up by the plant and soil reserves are left very low.

When designing rotations or the timing of K inputs, it is important to consider the effect of luxury uptake. Do not apply K inputs prior to grass and design rotations to suit the crop K requirements after grass. Potatoes are especially K-hungry so should be timed in the rotation after any K input.

Soil pH has a strong influence on the availability of K. In strongly acid soils where aluminium is the dominant exchangeable element, potassium is not firmly held and it leaches. If lime is applied aluminium is replaced by calcium and K is more strongly held in the colloids and soil particles.

K is inextricably linked to the plant's ability to take up N so yields can be affected by the supply of K. In addition to exploiting K reserves in the subsoil, greater attention to soil cultivation and improved soil structure will allow plant roots to explore a larger volume of soil for nutrient acquisition. It is therefore advisable to apply K in autumn or winter on heavier soils where time is needed for the nutrient to disperse through the soil. On lighter soils do not attempt to build-up levels but replace anticipated off-take. Applications should be timed in advance of critical growth periods on the principle of "little and often" rather than larger, less frequent applications.

Marvellous Muck

FYM is the organic farmer's single most important resource. **ADAS** publishes the following table for the nutrient supply in **FRESH FYM**. These figures will drop during the composting process. If you really want to know the nutrient status sample the stack prior to spreading.

Type of FYM	Nitrogen (N) kg/t	Phosphate (P ₂ O ₅) kg/t	Potassium (K ₂ O) kg/t
Fresh Cattle FYM	6	3.5	8
Pig FYM	7	7	5
Layer litter	16	13	9
Broiler litter	30	25	18
Dairy slurry	3	1.2	3.5
Pig slurry	4	2	2.5

SOPA would advocate the following

Best Practice Principles

for FYM Management



Midden on hard standing with a high stack with steep sides to minimise run off and leaching of nutrients

Turn the midden regularly to ensure even composting

At least three days at 55deg C is the target midden temperature for destroying weed seeds and potentially harmful pathogens

Cover the midden to reduce ammonia (N) loss to the atmosphere (volatilisation)

Midden for at least 6 months—Reserve run-off to spread as 'dirty water'

Apply in the spring under dry conditions and incorporate as soon as possible

Analyse the FYM and don't overapply (usual application rates are in the region of 8t/ac;20t/ha)

DO NOT exceed 170kgN/ha/yr

Farm Planning

Did you know we keep a Farm Plan on file?

And that we ask you to keep it up to date?

See Section 6.4 of your Production Standards

To help our members comply with this, we will shortly be issuing a template to guide you through completion of the Farm Plan.



The information we require...

- **Overview of the Farm** including location, size, fields, housing, infrastructure, security protocols and environment. This includes maps.
- **Enterprise Plan** which is a simple outline of existing and planned business enterprises
- **Soil and Nutrient Management Plan** which includes soil inputs, soil status, nutrient budgets and manure management plans.
- **Environment and Biodiversity Plan** to show what environmental habitats and species are present and how these are protected and enhanced. Map included.
- **Crop Management Plan** showing the crops grown, rotation design and husbandry techniques to control pests, diseases and weeds.
- **Animal Health Plan** to show past, present and future health issues and what actions are taken to prevent incidence of ill-health in the herd/flock. This includes housing capacity and design, feed regime, stockmanship and handling systems. Particular attention should be applied to the use of vetmeds
- **Marketing Plan** to illustrate how, when and to whom produce is sold off the farm and should demonstrate innovative and secure business strategy, and should also give an indication as to the financial viability of the business.

Diary Dates

Scottish Rural Development Plan

Opportunities for Organic Farmers

ORGANIC CONVERSION

ORGANIC MAINTENANCE

OTHER BOLT-ON MEASURES



To register your interest please call Debs on 0131 335 6619 or email deborah.roberts@sfqc.co.uk

If there is sufficient demand SOPA will run SRDP workshops before the end of March

SAC Organic Events—Dates for your 2008 Diary

Farm Walk and Seminar

Profitable Organic Beef Production

Breed selection, nutrition, preventative health management, gross margins

Tuesday 12 February 2008, 1.00pm – 4.30pm

East Mains, Auchterhouse, Dundee (Courtesy of Mr John Skea)

Speakers: John Skea, Douglas Gray (SAC), Colin Dargie (SAC), Euan Hart (SAC)

Contact David Younie for further information
tel 01224 711072 or david.younie@sac.co.uk

Supporting the
land-based industries
for over a century



Farm Walk and Seminar

Preventative Animal Health Management in Organic Livestock;

Making Animal Health Plans Work

Thursday 21 February 2008, 1.00pm – 4.30pm

Barnside, Abbey St Bathans, Duns, Berwickshire (Courtesy of Mr & Mrs C&A Walker)

Speakers: Charlie Walker & Duncan Shell (Producers), Douglas Gray (SAC), Certification Body speaker (OF&G)

Soil Association Events



Growing your business by supplying restaurants and caterers

7 February, Edinburgh

A day looking at the practical experiences of chefs and producers. Our Food for Life manager will also be available to answer your questions on supplying your local schools with produce. Come along and find out what is involved in supplying this growing market. Cost will be £34.00 plus VAT.

River Swale, Northallerton, North Yorkshire

Wednesday 13 February

A chance to visit River Swale in North Yorkshire a newly established box scheme, showing how farmers work collaboratively to supply over 65 different types of fruit and veg. Looking at all different aspects from growing, collaboration, packing, how to achieve quality specs by attention to both production and handling of produce and anything other topics you would like to discuss. Cost will be £34.00 plus VAT

<http://www.riverswale.co.uk/>

Growing your business by supplying multiples and food processors

Thursday 28 February, Jamesfield, Perthshire

A day when a processor and multiple will discuss their requirements and producers give a practical view point on supplying these outlets. Cost will be £34.00 plus VAT.

Contact Lyn Matheson 0131 666 0847 for further information

CLASSIFIEDS

FOR SALE

100 tonnes of 2ic spring barley for sale. 20 tonnes of 2ic spring lupins for sale. SOPA certificate. Telephone 01835 863332 (Borders)

* * *

90 bales organic straw (spring wheat), available to uplift. Contact Mike Sutherland 07889395455 (Aberdeen)

* * *

40 lleyn tupp ed ewes 2nd year conversion to reach converted breeding stock status on 10th September 2008. If tupp ed after this date, all progeny will be fully organic. genuine reason for sale mob 07974781770 St Andrews, SOPA Member

* * *

Suckler cows (14) and bulling heifers (20) for sale. Non-organic stock but from SOPA in-conversion farm. The cows are all off Holstein dams put to either Limousin or Angus bulls, so 50:50 dairy:beef breeding. The cows are all in calf to the Angus, due Feb/Mar. The oldest is 5 years (third calver). Also approx 20 bulling heifers of 3/4 beef 1/4 Holstein breeding. Telephone 01343 547 082 (Aberdeen)

* * *

organic round bale silage for sale in Pitlochry area. SOPA Member. Tel 07979 852 491

* * *

Fully Organic Lucerne. Dried, chopped, protein rich 11 tonne approx AND Fully Organic Hay. Dried, chopped, bagged and palletised. 10% protein, 10% moisture. Can be stored outside. SOPA Certified contact James Halley's Feeds Mobile; 07703 528100 Telephone: 01738 840394 Fax: 01738 840830 Email: james@halleysfeeds.co.uk Web: www.halleysfeeds.co.uk (Perth)

* * *

Fully Organic Malting Barley (Optic) 10 tonne approx for sale. SOPA Certified. Contact James Halley's Feeds 07703528100 (Perth)

* * *

900 4x4 bales of 2IC red clover silage, also 400 fully organic 4x4 bales of red clover silage. Good quality. Contact Sonya MacPherson (Soil Association) on 01467 671207 or mob 07796 322 137. This silage is also offered for sale at ANM Thainstone Mart Friday Fodder Sales. Private sales considered in any size lot; alternatively contact Thainstone.

* * *

round bale organic silage, well wrapped. SOPA member. Pitlochry area. Tel: 07979852491

FOR SALE

approx 700 tonnes pit silage, 2IC, SOPA member near Berwick. ALSO 18000 sq ft court for B&B live-stock. Good straw available on farm. Happy to discuss options. Tel Mr Pennington 07881 77 77 91

* * *

68 big bales of wrapped haylage. SOPA member in the Borders/Jedburgh. Tel 01835 840 337 Mob 0777 990 8346

* * *

Organic wheat and barley for sale John Guthrie Ltd 01307 462561 (Forfar)

* * *

Very good organic hay and straw for sale in 4x4 bales. Delivered all areas John Guthrie Merchants (Forfar) 01307 462 561

* * *

500 small square bales of organic hay for sale. Dunkeld area. Telephone 01738 710522.

* * *

Location Argyll 40 blackface store lambs. Soil Assoc. Reg E: charltonlaggan@talktalk.net Mob 07749848611

* * *

2 Luing pedigree bulling heifers 3 year old. Hi health and exposed to ticks. Soil Assoc Reg. E: charltonlaggan@talktalk.net Mob 07749848611

* * *

Non-organic LLamas for sale. 2 young males "Jimmy" born July '06 and "Solly" born June '07. Very friendly and good temperaments. £600 the pair. Tel: 01988 700518 SOPA Member

WANTED

Scottish Grown organic potatoes and all other veg to supply organic wholesaler in Ireland. Regular supply wanted for secure retail markets. Please call Debs at SOPA for further information 0131 335 6619

* * *

14 tonne Feeding Barley required (Aberfeldy) Tel 07515280036

* * *

all organic and i.c. cereals and pulses required. All areas. John Guthrie Ltd 01307 462561 (Forfar)