Irish Organic Farmers and Growers Association

# IOFGA

# organic matters

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### ADVERT??



**ORGANIC MATTERS** is now an in-house magazine.

ORGANIC MATTERS COMPILED BY GILLIAN WESTBROOK AND GRACE MAHER

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#### **ORGANIC MATTERS**

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We take a lot of care in the selection of the articles and material published in Organic Matters, we do not accept responsibility for the accuracy of all statements made by contributors, nor do the views expressed represent the views of IOFGA unless specifically stated. This also covers products or services advertised in Organic Matters.

### Contents

IOFGA News
Title

www.iofga.org

3

### IOFGA NEWS...IOFGA NEWS...IOFGA NEWS

#### ANNUAL GENERAL MEETING - 2016

#### IMAGE REQUIRED PLEASE?

This year the IOFGA AGM, will be held on April 19th at Coolanowle Organic Farm in Co. Carlow. We are looking forward to hosting this AGM on a farm at one of our members' premises. Refreshments will be available to members on arrival from 11am. Below is the schedule for the day;

**12 noon** – AGM commences

2pm - Light lunch with refreshments

**3pm** – IOFGA will host a discussion on the Organic Action Plan for Ireland. Starting with an overview from a panel on their many experiences in organic production.

Chairperson: Ella McSweeney (Journalist & Reporter)

Panel: Various IOFGA Producers and Processors

5pm: Organic supper to conclude the day

Please contact IOFGA office on tel: 090 64 33680, or email info@iofga.org to book your place before Thursday 14th April at 5pm.We need to confirm numbers in advance to plan food orders.

We are looking forward to an interesting day discussing ideas for a new Organic Action Plan for Ireland. If you wish to review the current Action Plan it is available at www.iofga.org however, we will have some copies available on the day.

IOFGA would like to encourage all members to come along to the event and we look forward to meeting you. Directions to the farm will be available on **www.iofga.org** or please see **www.coolanowle.com** 

#### FIELD TALK 2016

Building on the success of last year's Field Talk programme IOFGA are delighted to announce a further 6 events for this coming year. Like last year, events will take place on a variety of farms around the country and will focus on specific topics. These events are for IOFGA members and aimed at in conversion farmers, however are open to all members who wish to attend.

At a Field Talk programme, the host farmer leads the walk and discussion on the farm, and the exchange of information is very extensive. The honesty and direct delivery of the varied experiences of the host farmers has been central to the success of the programme to date, and the openness of the subsequent discussions are very useful to farmers keen to learn from other organic farmers.

Most events last approximately 2 hours and we ask members to book in advance, directions to the event are then emailed to people. Light refreshments are offered on the day.

We will remind members about the Field Talk programmes via our newsletter closer to each event, or you can read about them on our website. To book in for a Field Talk event please email **tricia.notley@iofga.org** or **john.seery@iofga.org** and specify which event you would like to attend.



To book in for one of these events simply contact us on the information listed below: **IRISH ORGANIC FARMERS & GROWERS ASSOCIATION** Tel: (+353) 090 6433680 Fax: (+353) 090 6449005 Email: info@iofga.org www.iofga.org

### IOFGA NEWS...IOFGA NEWS...IOFGA NEWS

#### ORGANIC FARMING SCHEME 2016

At the time of going to print due to the political uncertainty IOFGA are not in a position to comment on whether there will be an Organic Farming Scheme in 2016. However as soon as we do know we will notify members via our newsletter. For farmers who finish their current contract in 2016...

Organic Production Courses – If you joined the Organic Farming Scheme in 2015 you will be aware that it is mandatory to complete an Organic Production Course. This 25hour course takes place over 4 days, course dates are now confirmed and listed on our website at http://iofga.org/general/additional-organicproduction-course-announced/

Organic Capital Investment Scheme – In this edition of Organic Matters you can read how to make a successful application to the scheme. Please note that the current scheme closes on ? but reopens on ? for the next round of funding.

#### ORGANIC DATABASES - 2 PROJECT UPDATES

#### **Organic Food Sales**

In the last edition of Organic Matters, we spoke about one of the promotional events that IOFGA are spearheading called Organic Food Sales. This standalone website with integrated database, is in the final stages of completion and will go live in the next few weeks.

The database makes organic food easier to access for consumers, wholesalers and caterers while promoting individual businesses who process organic food. Companies have the flexibility to list products they produce, where it is sold and distributed and the database also has links to the companies own website for buyers seeking more information.

#### DATABASE IMAGE

We will be inviting you to update your company profile onto the site via individual log in details. Below is a screen shot of an example of how the site will look, please be aware that this database is trade only so therefore limited to organic processors and does not include primary producers.

#### Global Organic Certification Directory

This initiative from IFOAM Organics International and BioC, is as the name suggests an up to date directory of certified organic operators worldwide. Organic certification bodies around the world update their data onto the site, and it is essentially a onestop shop for checking organic certificates globally.

IOFGA have signed up to BioC in conjunction with DEFRA in the UK, currently IOFGA clients registered in Northern Ireland are on the website and it is envisaged to have all IOFGA Certified Republic of Ireland clients uploaded to the system in the coming months. The information uploaded to the system is the information IOFGA has on file for members, only products listed on your licence can be included on the website. (insert screen shot here).

#### IOFGA NEWSLETTERS AND CLASSIFIED ADS

If you could like to stay updated more regularly about what is happening in the organic sector you can subscribe to our e-newsletters which are issued approximately once a month. To add your name please send an email to Amanda.doyle@iofga.org and you will be added to the mailing list.

The regulations are currently in the final stages which essentially means it is being discussed at European level between the EU Parliament, Commission and Council to agree on the final changes. Once again we would like to thank our producers and processors who consulted with us on various aspects of the regulations and how they might impact them.

IOFGA will be involved in a host of promotional activities during the year which will be flagged in our e-newsletter and then profiled in Organic Matters, so it is good way to stay in touch with what is happening.

Apologies for any repetition, however we constantly receive emails and calls requesting information about how to post an advert on the IOFGA website. Simply send us an email to **info@iofga.org** stating what you wish to buy/sell, with your contact details and we will post it on the site for you. In order to keep the classified section current, we would appreciate it if you notify us once items are sold so that we can remove them from the site.

### IOFGA NEWS...IOFGA NEWS...IOFGA NEWS

### ORGANIC REGULATIONS

The EU legislative process aimed at developing a new regulatory framework for the organic sector has to date taken three years to complete, and we are not there yet. IOFGA have continually worked with our IFOAM EU colleagues to ensure a sensible regulation, workable for all involved in the sector including smaller countries like Ireland.

The regulations are currently in the final stages which essentially means it is being discussed at European level between the EU Parliament, Commission and Council to agree on the final changes. Once again we would like to thank our producers and processors who consulted with us on various aspects of the regulations and how they might impact them.

#### ORGANIC MARTS DATES 2016

The following mart dates for 2016 have been confirmed, any changes to dates will be listed on our website and newsletters so please check regularly. Also please read the mart protocol, and download the booking form at http://iofga.org/members/marts/

CARRIGALLEN	April 4th, May 2nd, June 13th
CLONES	April 9th
DRUMSHANBO	April 23rd, May 21st, July 23rd, September 17th, October 22nd, November 19th, December 10th
NEWPORT	May 14th (tbc)
KILMALLOCK	May 28th
ROSCOMMON	April 2nd, October 8th

#### TITAN SEAWEED

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#### SMALL ADS...SMALL ADS

If you wish to place a small ad please contact Tricia Notley on tricia@iofga.org or tel: 0906 433680

Add value: Buy Irish organic feed for livestock and poultry from

ROBINS GLEN ORGANIC PRODUCE. Contact Richard and Eleanor Murphy 085 119 9775 or www.robinsglen.ie

#### CASTLEWOOD ORGANIC FARM SHOP

Open Fri & Sat 10-5, Sun 11-5. Join us for walks, food in our tea room and a selection of our meats and other products. Guided farm walks by arrangement. **Open Friday, Saturday and Sunday, 10am – 5pm.** 

## Raw Milk a focus as part of the Wise Traditions Ireland Conference

#### ANNE MAHER GIVES AN OVERVIEW OF THE CONFERENCE

The recent Wise Traditions Ireland conference held in Limerick was the second conference organised under the umbrella of the Weston A Price Foundation (WAPF). The WAPF are keen to bring together people interested in pursuing a nutrient dense diet and healthier lifestyle with the food producers that have a dedicated interest in producing foods such as raw milk, grass fed meats, fermented foods and organic produce.

Opened by food writer John McKenna this years' conference focused on one of WAPF's main messages, a return to diets rich in healthy traditional fats. Speakers such as Nina Teicholz author of the bestselling book Big Fat Surprise, spoke about the poor science that underpins our current dietary guidelines recommending a low fat diet. She argued for the benefits of including full fat meat, cheese and milk in our diets again. Our food pyramid is being questioned as the driver of much of the public health problems of obesity and diabetes rather than solving them. Fears about cholesterol were dispelled by Dr Malcolm Kendricks talk called the Great



Cholesterol Con. Patricia Daly spoke about the ketogenic diet, a very high fat diet that she has used to reverse her own cancer diagnosis. Healing diets such as the GAPS protocol were also covered by Dr. Natasha Campbell McBride. The common theme of the value of good food was well accepted by this unique audience that are seeking answers for their health and eager to locate sustainable food sources that they can trust. Exhibitors were impressed with the attendees who did not need to be convinced about the value of the produce being promoted.

Organic raw milk and cheese were particularly sought after. Elisabeth Ryan (formerly of Raw Milk Ireland) led a raw milk discussion that intrigued the audience.

The consumption of raw milk and particularly organic is a growing area of popularity and one that has huge potential for the farmers involved. For organic producers the Weston A Price Foundation is a not for profit nutrition organisation that relies on membership and provides a wealth of accurate nutrition information. To find out more **www.westonaprice.org** 

Anne Maher is a public health nutritionist, GAPS practitioner and organiser of the Weston Price conference in Limerick.

Anne holds clinics in Lisverrane, Co.Tipperary and can be contacted at tel: 087 7927311

#### ELIZABETH RYAN WHO LED A RAW MILK DISCUSSION AT THE CONFERENCE;

Weston A. Price foundation have always been big proponents of raw milk and as such this featured heavily as a topic at their recent conference in Thomond Park. As an advocate for producers of raw milk, it was a pleasure to attend an event where there was so much genuine support.

When I spoke at the previous conference in 2015, I spent a lot of time explaining the raw milk campaign and its actions since 2010 when we discovered that the government was proposing a ban. The great news we had for attendees this year is that raw milk in Ireland is now in a much more secure position, with none of the previous antagonism between regulators and producers. It was fantastic to be able to speak from this positive position, where we now have 11 producers registered with the Department of Agriculture as sellers of raw milk. We are now working with officials towards developing a set of industry led regulations which will govern the sale of raw milk in Ireland (in addition to the more basic requirements laid out in the EU Hygiene regulations which apply to all milk producers).

The audience, comprised in the main of eager consumers and nutrition professionals but also contained many farmers in its midst. John Liston of the Little Milk Company (an organic farming cooperative) and Peter Campbell McBride, UK raw milk campaigner joined me on the panel discussion and we took questions from the audience afterwards.

John Liston spoke about the unique attributes they have discovered within organic raw milk such as high levels of Vitamin K, John has found it hugely rewarding to be involved in the process of adding value to his milk. His involvement in the Little Milk Company, and subsequently organisations such as Weston A. Price and



Raw Milk Ireland has opened his eyes to the real value and benefits of what he is producing. John told us about his Jersey cross herd, and his quite unique once a day milking system and the benefits of this to the quality of the milk. He also spoke of his conversion to organic farming and the importance of this for his farm.

Peter Campbell McBride explained the UK experience and emphasised the need to work alongside regulators. Peter also made a particularly interesting point in that so much of our Irish milk production is intended for export in different formats, that any increase in consumption of raw milk should raise little concern from the large processors. This is very different to the UK situation where milk sellers rely almost entirely on the domestic market for their milk sales, and thus the sale of raw milk by farmers is viewed as more of a threat.

A fascinating question arose from the audience from a lady who recently moved to Ireland and married a farmer, she wondered why her husband wouldn't drink their own milk? This led to a discussion which highlighted the view of many in the wider population that see the consumption of raw milk not just as dangerous but also as "backwards"; this of course being a polar opposite to those who embrace raw milk as a traditional foodstuff to be revered.

Many expressed a particular preference for organic raw milk, and we heard from consumers and also from Anne Maher, the lead organiser of the conference; they feel that it has benefitted their family's health hugely.

The topic of unpasteurised milk at the conference was not limited to our panel. Professor Ton Baars gave a very compelling presentation regarding the benefits of raw milk with real scientific data to back up his theories regarding its protective qualities. He also spoke at length about various farming models which can produce cleaner milk with a focus on the German quality milk or "Vorzugsmilch" system. Ton also spoke about his work with the Raw Milk Institute who have spread their wings from an entirely US base, and are now working in Europe and Canada providing a risk assessment model for raw milk farmers and working with them to produce the cleanest possible milk.

The conference hosted stalls from an array of different food producers which included raw milk farmers; Sean Condon and John Liston from The Little Milk Company, Frank Shinnick from Fermoy Natural Cheese as well as Derg Raw Milk Cheddar producers.

Events such as this have the benefit of physically providing a link between farmers and their consumers. For me as coordinator of Raw Milk Ireland; this is one of the most positive things about the continued sale of raw milk in Ireland, as it helps to bridge what can sometimes be a disconnect between the farming community and consumers. Raw milk's continued availability and popularity is a symbol for what we can achieve in the artisan food network in this country, the support of organisations such as Weston A. Price that advocate consumption of raw milk as a healthy nourishing food is invaluable.

# Organic Action Plan – PLAN FOR ACTION –

#### BY GILLIAN WESTBROOK

The Department of Agriculture launched the Irish **Organic Action Plan** in 2013, with the objective to provide a basis from which to develop the organic tsector taking into account the resources available.



The Action Plan is now due to be reviewed and since its launch the sector has changed considerably. Increased support for the sector has also changed and as a result a significant rise in the level of livestock production. Horticulture has also increased and members have reported strong growth with new Irish markets opening. With the increase in production comes a renewed interest from processors but there remains some way to go to bridge the gaps that exist within the sector.

The IOFGA meeting (after the AGM) on 19th April will be looking at the Organic Action Plan and collating recommendations from members on how to facilitate sustainable growth which will feed back into IOFGA's submission for a new Plan. Action Plans should not be under estimated, they're an important tool to develop a coherent strategy which may be further incorporated in Rural Development Policy. Individual EU countries place different level of emphasis on their Action Plan, some do not have any Plan at all, while others contain some interesting ideals that may well suit adaption in Ireland.

Recent research from FiBL, IFOAM EU and ORC reviewed European Action Plans (OAPs A Guide for Stakeholders), and provide a detailed analysis of six countries. The design and implementation of Action Plans can vary greatly in each Member State, often created to complement their Rural Development Programme. France, for example, now has a regional development as does Germany, and therefore the regions will place different emphasis on regional plans according to their targets and markets. Providing a summary is complicated, each country has diverse methods for stakeholder engagement, but using the core subject headings below are a useful tool to group the main actions into an overall design. Below is a summary of the core features that some other countries aspire to and could provide useful ideas in Irelands next Plan. (**OAP = Organic Action Plan**)

#### **INFORMATION:**

**SCOTLAND** - Informing consumers about the environmental benefits & climate change impacts of organic production systems. Scottish OAP aims to increase awareness of the economic, environmental and social value to a multitude of stakeholders.

**CZECH REPUBLIC** - Innovative public events such as 'Best Organic Farmer of the Year', 'Best Organic food of the Year', 'Month of Organic Foods' as well as publications 'Organic Farming & Biodiversity' and 'Contribution of Organic Farming to the Quality of Ground Water and Surface Water'. Also actions for promotion and education for the public on the advantages of organic food and farming.

**DENMARK** - Promotes organics in local municipalities and schools, includes consumption and production and its climate change and environmental benefits.

**FRANCE** - Raising awareness of school children, parents and teachers.

**SPAIN - ANDALUSIA** - Promote environmental and health benefits of organic food and consumption with institutional promotion campaigns, support industry publications and social activities.

#### EDUCATION, TRAINING AND ADVICE:

Emphasise on training and education for farmers is common place in many OAPs, to ensure the continued development of the sector, regardless of its size. The need for education should possibly be a main consideration for Ireland. While various QQI awards in organics are offered around the country, there is a lack of third level degree courses available for people who wish to learn more about organic food production. Although an MSc exists for horticulture, there is no available undergraduate degree course, and no under or post graduate course available for organic farming, only an organic farming module, which is not sufficient to provide the level of knowledge required.

Organic farming techniques need to be more widely integrated within agri-education and food processing training if this sector is to progress. The integration of farming with those working in food supply/processing is an important component to ensure the entire food chain has a relevant understanding of organic systems. Interesting, that the non-food processing aspect has not been mentioned in EU OAPs, except for Germany. It may be worth highlighting training on both farm and food inputs in Irelands next OAP, e.g., packaging, fertilisers, soil conditioners, industrial products etc.

#### EDUCATION, TRAINING AND ADVICE:

**FRANCE** - improved integration of organic farming in agricultural education, including vocational training at advanced and specialist courses and continuous educational options in farming and food supply.

**CZECH REPUBLIC AND DENMARK** - improve teaching of organic farming in schools and Scotland also highlights continued support for State advisory services.

**GERMANY** - Improve ecological production and processing to all relevant occupations.

Many OAP seek more on-line information, Scotland suggesting an on-line hub for organic farming and agro-ecological research and to provide high level training and employment schemes for producers and processors.

#### RESEARCH, INNOVATION AND DEVELOPMENT:

The need for focused research on practical problems isn't a surprise. Ireland has virtually no research on organic systems and this is conceivably something that should be addressed in our next OAP, and should not be restricted to farming, production and processing techniques are equally important aspects.

Scotland proposes a more coherent link with research by working alongside universities and research institutes to identify and address the key technical and practical challenges of organic production and distribution. An especially interesting action in the Scottish Plan is to undertake the collection and distribution of biodiversity data on organic farms and habitat management. If something on similar lines could be adopted in Ireland for organic farming it could provide for GLAS (Agri environment schemes) options to be undertaken in tandem with research.

Information gathering about the sector is also in some OAP, including Scotland. This is yet another aspect key to Ireland, as often information is not easily extractable for dissemination to industry. Market information as well as evidence on and for the performance of organic farming to deliver to wider policy goals, such as climate change and habitats. Ireland has an opportunity at this junction to include water quality in this regard, and assess relevant impacts, as well as biodiversity and other environmental deliverables. Czech Republic OAP contains an applied research focus monitoring of the sector, to future improve, amongst other things, animal welfare.

#### MARKET DEVELOPMENT AND SUPPLY CHAINS:

More recent OAPs include marketing and promotion. This important component looks to improve efficiency and market issues. France and Italy include measures to improve the supply chain interactions from production to consumption. Identifying where the gaps are in collecting/distribution and processing resources, uniting the supply with demand. Implementation of this has far reaching gaols, from using careful processing techniques to preserve the quality of organic products to increased production of protein and oil crops. Czech Republic have provided support for target sectors such as catering and other countries (e.g. Denmark) focus on public municipal food supply.

Mindful of targeted marketing, as identified in Irelands OAP; IOFGA provide a monthly advertorial promotion on organic ingredients (Organics Naturally Good for Business) to the catering service and ran the Cater Organic event as a promotion for chefs to increase use of organic ingredients. IOFGA are also due to finalise a directory for organic food **(www.organicfoodsales.ie)** which offers, as the name implies, an online list of all organic operators that have a food product for sale, with a distribution list for trade. This is aimed at consumers and trade sales, both national and globally. Funds were provided from the DAFM Organic Unit to assist with these programmes.

Market research is being done by Bord Bia as well as a lot of support via their Food Academy on product development, support for export products and trade shows. Irelands OAP has identified these areas for development and as already mentioned, a lot of this work is being done. In order to deliver on Irelands OAP other aspects of support are covered in the Rural Development Programme with supports available now, and future funding via National Rural Network and LEADER. Nonetheless, some more thought and clever design is required to address the supply and demand balance from the increase of organic production, as well as innovative solutions in other areas that are not yet being reached. It is worthwhile reviewing the plans and aspirations of other countries to see what works for them and why. It is a case of the right infrastructure or the right market or possibly the right attitude to succeed. One thing is for certain, Irelands organic sector is at a crossroads in which it has to decide in what direction to go and what it needs to bring with it on that journey.

## **All-Ireland Pollinator Plan Junior Version 2015-2020**

The All-Ireland Pollinator Plan was launched on the 17th September 2015. It is supported by 68 organisations and identifies 81 actions to make Ireland more pollinator friendly.

The Plan was put together by a 15 member steering group. Within the steering group we felt very strongly that getting the message to the next generation was vital and that in 2016 we should try to source funding to create a junior version of the Plan.

In fortuitous timing, we were approached by WillFredd Theatre and The Ark in very late 2015. They put on a Bees musical last autumn to teach children the importance of pollinators and had some funding to create resources to coincide with the spring run of their show. It was agreed that those resources could be used to work with the steering group to create a junior version of the All-Ireland Pollinator Plan

#### BY DR. UNA FITZPATRICK

2015-2020. The junior plan is supported by Green-Schools and Eco-Schools (Northern Ireland).

The Junior Plan is a serious document that has exactly the same message as the main Plan but is written in a light way to appeal to kids. It is rich in photos and graphics and explains why pollination is so important, who the pollinators are in Ireland and why they are in trouble. It also has lots of bee jokes that will give any Christmas cracker a run for its money! The Junior Plan has a section at the back that explains the actions you can take in your school to make it pollinator friendly. Within 2016 we hope to try and find a funder to cover a print and distribution run into all schools across Ireland. In the meantime, we could be very grateful if you could promote it to any schools or youth groups that you might have contact with.

While we know it's probably not obvious just yet, efforts are continuing apace with the implementation phase of the All-Ireland Pollinator Plan. We are currently



Ballinabranna NS, Milford © Green Bee Education.

Roíisiín and Eilís O'Neill - Limerick's Buzzing - Veronica Santorum.

preparing detailed guidelines for how different sectors can help implement the Plan. The support and enthusiasm for the Plan has been overwhelming and hugely appreciated, but has meant that within the steering group we are struggling a little to cope with the interest. We are extremely grateful to the Heritage Council and An Bord Bía who have agreed to provide funding for us to employ a project officer to assist this year. That person will start in early April and will focus on supporting those within the farming sector who want to take actions to help.

The organic sector is already doing many things right and we know that organic farms support more insects that those that are not organic. We want to recognise that, as well as make sure you know the exact kinds of things you can do on your farm to make it as pollinator friendly as possible. We hope that in May we will be able to start making those resources and guidelines available, we will have more details on it in the next edition of Organic Matters so please bear with us!

To read more please see http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/all-ireland-pollinator-plan/

## **BREEDING REPLACEMENTS** to suit your farming needs

#### BY AIDAN HARNEY

Its calving time on the farm. Cows and heifers in calf to Friesian have already calved and now it is the turn of the stock bull to yield the fruits of his labour. My herd breeding strategy has taken a major U-turn over the last ten years. I started producing organic milk with a herd of Holsteins and realised fairly early on that something had to change.

I thought long and hard about exactly what it was that I was trying to achieve. I wanted a robust, productive cow that maintained good health and produced a good quality calf. Sounds straight forward enough! I wanted to produce a large volume of milk and the Holsteins I had already met that requirement. In order to breed a more robust animal, I crossed my Holstein with a New Zealand Friesian bull for two years. (I use AI on cows and heifers for six weeks and then use a Hereford bull for 6 weeks.) The results were strong robust heifers, and an overall improvement in herd fertility. Additionally, our advisory service keep telling us that milk solids are all that really matters and if you are not breeding for solids you are not at the races. So to increase milk solids I crossed my cows with an AI Jersey bull. I followed this breeding pattern for two years. Fats and proteins increased quite dramatically but the size and stature of my cows decreased equally. It's amazing how easily these cows calve. Their temperament is good but they are small and the Jersey bull calves were difficult to even give away. The Jersey cross heifers were quite impressive in that although they were small, they were hardy. As soon as they hit the ground, they were up and sucking. I didn't lose any calves and didn't need to call the vet. This is the Hybrid vigour that's often talked about with these animals.

Around the same time I happened to buy some extra cows, Ayrshire, in calf to Ayrshire. Impressed with the calves, I decided to switch to an Ayrshire stock bull. The calves produced were healthy and robust. They had excellent udders, legs and feet and over time have proved to have superb longevity. A little small in stature they may not be to everyone's liking, but their positive attributes surpassed this issue for me.

So overall, I feel I have achieved what I set about doing 10 years ago. I have a herd of cross bred cows that are healthy, hardy,



fertile and long lasting. It has taken a long time but you can see the rewards of good breeding all along the road. In my opinion it is never a waste of time or money.

#### **Artificial Insemination (AI)**

At the moment, I am using British Friesian alongside a Hereford bull. My aim is still to have a robust, productive cow that will produce a good calf. I am using the Economic Breed Index (EBI) as my bench mark when selecting each sire, keeping a close eye on fertility and milk solids. Centurion is the bull I am using at the moment. His EBI is plus ?200, his milk solids are positive and he shows very strong traits for fertility. Irish AI companies have an excellent selection of top quality bulls that suit a variety of requirements.

Having completed a DIY AI course facilitated by Progressive Genetics, I now undertake all my own AI on the farm. The course took five days, one theory day in my local AI breeding station and four practical days in my local beef processing plant. The cost of the course was ?380 and the AI flask and tools cost in the region of ?600. These tools and equipment are available through Progressive Genetics or your local AI station. Approximate costs could be recuperated on an average herd of 60 or 70 cows in a year or two. Progressive Genetics also run refresher courses for people who have completed the initial course but may need technical support. I bought my AI flask and equipment and started on my own herd. When you start AI, heifers can be difficult to inseminate because they are smaller and less inclined to stand still but like anything, confidence is more important than ability. Now, I prefer to inseminate heifers because



they are cleaner and more likely to conceive on first insemination. I find doing my own AI fantastic. If I notice a cow bulling at morning milking I then run her into the cattle crush beside the milking parlour at evening milking time and I can inseminate her in two minutes. The cow can immediately return to the herd and there is no stress on man or beast. When I bring a batch of heifers into the yard I can inseminate one heifer in minutes and return her to the field with her comrades and they all remain relaxed. There is also the benefit of buying straws without the cost of the service.

#### **BEEF CALVES**

As a small herd owner, the beef calf element of my system is important financially. I sell all my bull and beef calves direct from the farm. To produce a big beef calf, I need a strong cow. My beef calf customers are all local suckler farmers looking for replacement heifers or beef bulls. In this instance I find Hereford is the best breed, as there are no issues calving big calves which are then ready saleable. Most important of all, they have a lovely, quiet temperament. I believe that it is important to reflect on systems, practices and objectives and implement change to improve outcome but unfortunately this is not universal across the agriculture sector. Breeding from the dairy herd is and has to be based on sound commercial policies but it is also personal to each farmer and their preferences.

#### OTHER ISSUES FOR ME AT THE MOMENT

Well, as I mentioned in my last article I hoped to sow a pea/ barley mixture into an eight acre (3 hectare) field in March. As I write this article I still haven't ploughed. As you all know it has been the wettest spring on record so I am waiting for the ground to dry a bit and line up my contractor when he is available! I recently attended a soil biology course which has focused my attention on what I am trying to achieve from my soil. Having full and comprehensive soil analysis is the first step so that I can understand what I am dealing with. Producing proper, nutritious compost is my next priority. It is not just a case of dumping a pile of dung in a field, come back 6 months and hey presto you have compost. It takes a little more care than that. I normally store my dung in an outdoor dungstead. This year, I have decided to move it indoors. I plan to pile my dung and add some clay. (No it's not a typo) I'm going to add clay, mix it and cover it in an attempt to create proper humus. It should be nutrient rich, well composted and easily absorbed by the plant as soon as it is spread. I will keep you posted with the results!





# AGRO-FORESTRY IN A HORTICULTURE SYSTEM

#### by Iain Tolhurst

Agroforestry is a relatively new word in my vocabulary, and one which I am still finding out about. So when agroforestry started to get trendy I thought perhaps I could get the trees even closer to my veg crops and perhaps if done properly my veg would grow at least as good as it did beforehand and maybe I would be able to see some benefits to bio-diversity.

My flirtation with agro-forestry (not called that then) in the past had taught me to be suspicious as trees do get seriously large and create masses of shade and their roots invade cropping land. How then was I to integrate trees to my vegetable growing systems without losing half of my precious land? So I spent some time thinking about it and weighing up the pros and cons because at the end of the decade I need to know that my farm will remain as marginally profitable then as it is now, the vegetables have to pay the rent and bills. Having to consider the economics of what we do cramps your creativity and style but for many small growers this is the reality.

The benefits have to at least equal the disadvantages so I spent some time looking into both aspects. I have mentioned some of the cons but what about the pros. Well for me top of the list has to be creating increased shelter from wind. Few growers seem to appreciate just how much vegetables prefer shelter from wind, it is clear to see where hedges protect crops are often superior. Many of the horticultural sites that I have visited in Ireland are exposed to wind some very much so and shelter from wind should be a priority. Increasing predator habitats will reduce pest problems. Then there is reduced disease risk, blight for example has been shown to spread much slower in sheltered plots due to lower wind speeds maybe the same is true for mildews. Materials from the trees will become a useful farm product whether it be woodchip for compost, stakes for beans or firewood. Fruits from trees will be harvested and sold locally and of course the beauty of the whole thing will gladden the hearts of all who visit your farm. And then there is the benefit of the mystical mycorrhiza which will creep outwards from the tree roots and invade my vegetable land with their health giving and fertility building properties. There are lots of other good reasons, too many to get into right now.

#### **COSTS OF ESTABLISHING THE CROP**

In the UK we are lucky to have The Woodland Trust who have paid for all the materials in our agro-forestry planting and are supporting the long term monitoring of the project. We have had to supply our own labour. I have not been able to find similar support for Ireland but there must be some grant aided money coming from EU that could be tapped into. To carry the costs by the farm for many farmers would not be possible and support will invariably be needed. It also helps to have the support of an organisation in respect of giving advice and moral support to such a project.

My plans were for alley cropping with trees in rows running northsouth, the best aspect as it reduces shading and my rows run that way. The tree rows were to go 23 meters apart, this fits my irrigation system and means that I will have 30 rows of vegetables between the trees. Initially I will lose 15% of my vegetable land. Mixed varieties of apples, on dwarf rootstocks mostly M26 are planted 15m apart between each apple tree is an oak tree and the rest of the row is inter-planted with mixed trees such as hornbeam, birch, cherry, maple, alder and some others. These are all trees which grow naturally in the area. The total planted area is 3ha (7acres) with 6 rows 150m long, 1.5 m between the trees except for where the apples are, as they have 3m clear each side. My vision for 100 years from now would be a sparsely planted oak forest with vegetables still growing between the trees but probably only on 60% of the land area. The other trees will still be there in various forms, some pollarded some coppiced but still producing materials for composting and other uses. By this time the fruit trees would have come to the end of their life and be replaced by new ones. The whole system will be working with nature and be self-sufficient in fertility a sort of "forest garden" I hear myself moan at such a phrase as my knowledge of such gardens tend to be places that get overgrown and hardly produce any crop at all, certainly not enough to feed a group of people. But for me the primary role of the system will be to continue to feed people. In an agricultural/arable farm system trees may well be further apart at lower density.

#### OUR AGRO-FORESTRY PLANTING EXPERIENCE

Planting was carried out early spring 2015, we had intended doing this in 2014 but a very wet winter delayed this for a year as we were partly flooded. Three of us got the 600 trees planted and staked in a couple of days. Fresh woodchip was mulched around all the trees, this was a big job and took over 20 cubic metres of material to allow for a decent layer 100mm deep. This has just been topped up, very important to keep weeds down for a couple of years. All trees have survived a fairly long drought early last summer, unlikely to be a problem in most parts of Ireland. Encouraging good establishment and rapid growth is essential to ensure the trees get a good start in life. Do not be tempted to transplant large trees they take too long to establish and have a high rate of fatality. In our experience, I or 2 year old bare root transplants are best, pot grown trees are usually slow to establish and expensive. The wild cherry trees have made exceptional growth in their first year going from ? meter to over 2 metres tall. Most of the other types have stayed the same size but now that they have their roots established will romp away this season.

The six rows of trees look a bit like a motorway road-works as the guards supplied by Woodland Trust are quite large and the trees very small. Guards are essential in the early years. The apples are much taller and have already received their first formative pruning to encourage side branches. We have plans for a variety of different treatments in the tree row to assess the practicality of integrating crops. One row is to be planted with rhubarb, two crowns between each tree. Another row is to be planted with a selection of narcissus and daffodils for early cut flowers. One row will be a selection of herbaceous flowers also for cutting during early summer.

Cut flowers will sell in our farm gate shop just yards from where they will grow. Of the two remaining rows, one will be left with the existing long term green manure which will be allowed to grow and be cut twice per year. The last one is a long term beetle bank containing mixed flora and will continue as such, it never gets cut or managed in anyway except for the removal of self-seeded trees.

#### RETHINKING SOME OF OUR PLANTING AND CULTIVATION TECHNIQUES

We have had a year to get used to the new system in the field, it has meant that we have had to re-think some of the field operations especially the movement of crop covers. This has become more of a chore as the covers were moved sideways to cover different crops at different times of the year, these now have to be removed from the plots and re-positioned as the field is now in effect 6 fields. I learnt in the first year that I had tried to squeeze crops too close to the trees which made the use of our 3m wide steerage hoe impossible, in the end this meant that the last two rows were not hoed effectively. We are prepared to have to wait a few years for the benefits to kick in.

So there is much to be learnt from this trial and the Organic Research Centre (ORC) and The Woodlands Trust have started to monitor its performance with some very interesting data about beetle populations. I'll be back in 10 years' time with my opinions as to how things are developing.



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# HOST FARMING FAMILIES REQUIRED

Language Travel Ireland is the leading provider of Farmstay English programmes in Ireland. The business was set up in 2009 and since then we are working with many wonderful host families throughout Ireland.

Foreign students really enjoy the fresh air and the freedom of the open countryside. They interact very well with the children in the family and some learn to play hurling and gaelic football. Due to strong demand, we want to increase our numbers of host teachers/ host families living on farms throughout Ireland. If you have a spare room in your house, you can be very well paid simply by accommodating and teaching English to a foreign student. While we accept all ages, students are typically between 12 to 17 years old.

A recent email from one of our host families in Co. Limerick said 'We still talk about the two lovely students you sent to us last summer and we can't wait to meet some more great foreign students in 2016.'

#### Requirements to be a Host Farmstay

- Small to medium sized, traditional Irish family farm where the student can get involved in a variety of farm activities. Organic farms are particularly welcome.
- A comfortable spare bedroom in your home with wardrobe and chest of drawers.





- A third level degree (any subject) or a teaching certificate as the student will require one to one English lessons.
   If there isn't anyone in the host family who can provide the English lessons, we will also accept a suitably qualified neighbour/friend/relation to give the English lessons.
- While an advantage, no previous teaching experience is required. We provide lots of ideas and suggestions for lessons as well as suggested material from websites and books.
- Children living in the host family between 10 and 18 years old. The majority of our students are aged 12 to 18 years old and like to have children of same age in the host family.
- We realise that some farmhouses are more traditional and rustic but we do require that accommodation is clean and comfortable.
- A love of countryside and a willingness to provide a warm welcome to a foreign student.
- Equestrian centres or farms with horse are also particularly welcome to apply.

#### What does the job involve?

Having a student live with you (usually 2 weeks) during which time they will be treated as a member of your family and receive 10 hours per week English lessons, taught on a one-to-one basis and 10 hours of farm activities.



Farm activities will vary depending on the farm but some examples are as follows: fruit picking, harvesting the vegetables, collecting eggs, feeding the farm animals, milking the cows/goats, haymaking, preparing the firewood, working in the garden, preparing bedding for the animals etc. Students are not here to do real work but to learn English and to get an experience of life on an Irish farm.

- Earn €1000 to €1500 for a typical 2 week booking.
- Choose when you want to work.
- Accept or turn down each student you are offered for any reason.
- Experience the pleasure of hospitality and open your family's minds.

#### **STUDENT TESTIMONIAL**

Student: Laura Age: 14 Country: Italy (Rome)

"I am pleased to say that the experience of Laura on her Farmstay Plus English Course in Ireland has been very positive. Exquisite hospitality from Mrs Jacqueline O'Farrell, excellent teaching, plenty of activities with animals and visits to other areas of the country.

Laura has great memories of her experience and feels refreshed in the use of her English. She was really welcomed into the host family and was made to feel like one of their own. My wife Serena and I, thank you very much for giving Laura this opportunity and for your great advice."

#### Kindest Regards, Aldo & Maria Valli

FOR FURTHER INFORMATION OR TO APPLY Telephone Mary Commins on 061 334746 or check our website: http://www.englishireland.ie/

### HR UPDATE

### FROM THE SMALL FIRMS ASSOCIATION



by Johnathan Callan

There have been recent changes in employment legislation and as many IOFGA members have employees we asked Johnathan Callan from the Small Firms Association to summarize some of these changes.

The SFA responded to 56,788 queries from members in 2015, 83% of which were employment law or HR related queries. There are usually some common areas that most small businesses struggle with and in 2015 we also saw numerous employment legislation changes, with more on the horizon this year. Below we will outline the top 10 recent employment law changes and most common areas related to the Organisation of Working Time Act 1997.

### Top 10 recent changes in employment legislation

- From August 2015, employees can accrue annual leave while on certified sick leave with some limitations to carrying leave forward for instances of longer term sick leave
- (2 The European Court of Justice ruled in September 2015 that for workers with no fixed office (such as care workers and door-to-door sales teams), time spent travelling to and from work should be counted as working time.
- (3) The Workplace Relations Commission (WRC) was formed in October 2015. The WRC replaced NERA, the Labour Relations Commission, the Employment Appeals Tribunal, the Equality Authority and the Rights Commissioner. The WRC provides advice, inspection and dispute resolution

services for employers and employees. The Labour Court was also reformed to hear complaints on appeal from the WRC and deal with industrial relations matters

- (4) From October 2015, improved framework was introduced for internal collective bargaining, where unions are not present. An internal mechanism for resolving industrial relations disputes must be available, such as employee representative groups
- (5) From October 2015, Employment Regulation Orders and Registered Employment Agreements can be registered with the Labour Court to set higher sector specific terms and conditions, such as higher minimum wage or public holiday benefits for a certain industry
- (6) National minimum wage from January 2016 changed to ?9.15 per hour, an increase of 50 cent
- (7) The Irish government proposed in Budget 2016 to legislate for Paternity Leave. The proposal is for 2 weeks leave, paid similar to maternity leave by social welfare at ?230 per week from September 2016. Until such time as it is enacted, there is no entitlement to paternity leave.
- (8) A report commissioned by the government around zero hours & flexible working contracts in late 2015 proposed to legislate for further protections for employees. It is to be seen if this will be on the next programme for government following the 2016 general election
- (9) The Equality (Miscellaneous Provisions) Act 2015 changed an exception outlined in the Employment Equality Acts for religious, educational or medical institutions that are under the direction or control of a religious body. These bodies can no longer discriminate on civil status, gender and sexual orientation
- (10) The European Court of Human Rights has ruled in January 2016 that employers have the right to monitor employees. This can be in the form of monitoring work emails, electronic messages, internet usage and CCTV footage. However a company policy must be in place to set an expectation of monitoring as Ireland's constitution outlines a right to privacy which extends to the workplace

#### Working Times and Record Keeping

It is important to be aware of the maximum working times and rest periods that all adult employees are entitled to:

- II hours consecutive rest per day
- 24 hours consecutive rest per week

- 48 hours maximum working week (Over a 16 week average)
- Employees are generally entitled to a break of 15 minutes after 4 ? hours work, or 30 minutes after 6 hours work (inclusive of the aforementioned 15 minutes break)

Every employer has a responsibility to record working times, leave and breaks for all employees. These records call be sought in an inspection by the WRC or in a dispute involving a particular employee.

#### Holiday and Public Holiday entitlements

Where an employee works more than 1365 hours in the 12 month annual leave year period, they are entitled to 4 working weeks in annual leave. Where they have joined/leave during the leave year, they accrue annual leave on the basis of 1/3 of a working week for each calendar month in which they work more than 117 hours. Where they work less hours than this, then annual leave is calculated at 8% of hours worked, subject to a maximum of 4 weeks

All full time employees are entitled to public holiday benefits. Part time employees only qualify for public holiday benefits providing they have worked for at least 40 hrs in the previous 5 weeks, preceding the public holiday.

- If an employee is typically scheduled to work on the day that the public holiday falls they receive a day's pay (or time off in lieu).
- If an employee is not normally working on that particular day, they should receive one-fifth of a week's pay (or time off in lieu).
- If their hours/shifts vary then you should use a reference period (an average of 13 weeks shifts) to determine a 'days pay'
- If employment ceases during a week ending on the day before a public holiday, you should receive an additional day's pay for the public holiday.
- Employees on sick leave qualify for public holiday benefits (providing it is under 26 weeks leave normally, or under 52 weeks leave if due to a workplace accident).
- Where a public holiday falls on a weekend, you do not have any automatic legal entitlement to have the next working day off work.

SFA members are offered an IR/HR advisory service and access to our online HR publications, for further information contact Jonathan Callan on 01 6051668, or jonathan.callan@sfa.ie

**18** www.iofga.org

# - a new look at an old crop



BY DAN CLAVIN

Teagasc, Farm Management and Rural Development Department, Athenry, Co. Galway

#### HISTORICAL PERSPECTIVE

Red clover has been grown alone or in forage mixtures for centuries, and occurs naturally in many old permanent swards. In the past it was considered a short-lived perennial forage legume that could be highly productive for two to three years, and its upright growth habit made it particularly suitable for hay and silage making. Its use declined in recent decades mainly because it did not fit in with our streamlined systems of livestock production that are based on long term pastures receiving inputs of mineral nitrogen (N) fertiliser.

#### **USES OF RED CLOVER**

- The main role of red clover is for silage production and soil fertility building in arable/horticulture systems, although it is often grazed by cattle or sheep after the final silage cut in the autumn.
- Red clover will not persist if continuously grazed or cut more frequently than every 30 days due to a combination of excessive foliage removal and plant crown damage by hoof trampling.

#### **RED CLOVER AND NITROGEN**

Nitrogen (N) is in us and all around us, in abundant amounts. Despite this, Nitrogen is one of the elements being singled out as a challenge for future farming and food security. The explanation for this paradox lies in it's level of reactivity: most N is locked up as N2 in the atmosphere where it does not do much. To make it accessible, N must be available in reactive form, that is nitrate (NO3-) or ammonium (NH4-). The shortage of reactive nitrogen in world agriculture was addressed conventionally with technical innovations, such as the Haber-Bosch process in the early 20th century, which greatly increased the availability of reactive nitrogen in conventional agriculture. Organic farmers rely instead on N being made available to plants in natural ways by means of:

- addition of animal manures/composts
- microbial activity in the soil organic matter and
- biological nitrogen fixation by bacteria which live on the roots leguminous plants.

The ability of red clover (a leguminous plant) to naturally fix relatively large amounts of atmospheric N ( $\sim$ 200kg N/ha) and produce high yields makes it worth considering especially for organic farmers who want to increase production. Red clover can

especially make a contribution to the Nitrogen economy of herbage production due to biological Nitrogen -fixation by the legume/rhizobium association resulting in reduced costs and more efficient use of energy in grassland systems.

In addition, there is reason to believe that modified management practices could overcome the previous failure of red clover crops to persist over time.

#### TEAGASC GRANGE RED CLOVER EXPERIMENT

A permanent grassland sward (in grass for 30 years) at Teagasc Grange research centre (see location Map 1) was ploughed and a firm fine seedbed was produced. The soil was an imperfectly drained gley soil. Lime, phosphorus and potassium inputs were based on soil analysis results. A large number of field plots were then sown with early flowering red clover (15kg/ha), intermediateheading perennial ryegrass (30kg/ha) or a mixture of red clover + ryegrass on an equal mixture by weight (10kg + 10kg per ha). During each of the subsequent 6 years, the plots were managed under an annual 4 cut regime to

- (a identify optimal management systems for red clover based swards and
- (b) quantify the response of perennial ryegrass to a series of application rates of N fertiliser.
- c) benchmark the performance of the red clover against the more conventional ryegrass + N system.



#### MAP I - LOCATION OF TEAGASC GRANGE RED CLOVER EXPERIMENT





The red clover experiment was conducted at Teagasc Grange on an imperfectly drained gley soil that was in grass for 30 years.

#### FINDINGS

- A mean annual yield in excess of 15.7t dry matter (DM)/ha over the 6 years of the study was achieved with red c lover/ryegrass swards with a first harvest in late May rather than early June, and which received no fertiliser N. Over the 6 year of the study, applying a relatively small amount of N in mid-March (50kg N/ha or 40 units N/acre) to these swards reduced annual DM yield by 0.5t/ha, while omission of the ryegrass from the seed mixture reduced annual yield by about 1t DM/ha. Delaying the first and subsequent cuts by a forthnight decreased annual yield by 0.5t/ha.
- Annual yields for these swards were better than those of ryegrass receiving 200 kg N/ha/year (Table 1 and Chart 1).

### TABLE I - FORAGE DRY MATTER YIELDS(KG/HA) EACH YEAR (2003 data not available)

Year	Grass + N		Red clover +ryegrass, no N fertiliser, first harvest late May
kgN/ha/year	0	200	0
2002	9311	13505	14401
2004	9488	16852	17369
2005	8720	14042	15146
2006	9083	12381	16269
2007	10542	15022	15740
Average	9429	14360	15785

Source: Teagasc, Grange Beef Research Centre



#### Red clover + perennial ryegrass (+N). Mean annual yield (t DM/ha) over 6 years at Grange.

- Proportion of red clover: While in general the red clover persisted in the sward until Year 6, it's proportion in the sward decreased from Year 1 to Year 6 irrespective of management. It was found that harvesting the first cut late (early June rather than 2 weeks earlier in late May) and applying N fertiliser (50kg N/ha) in mid-March caused a significant decrease in the proportion of red clover in the sward.
- Crop digestibility (DMD) is a good indicator of the energy value of forage for livestock. In this regard there was a consistent advantage of including ryegrass in the seed mixture with red clover because it led to a higher unit DMD per cut (3%, 2% and 1% units higher for Cuts 1, 2 and 3 respectively). Similarly there was an advantage in favour of harvesting red clover ryegrass swards in late May, with a fortnight delay until early June resulting in a decline in DMD of 6% for Cut 1, 3% for Cut 2 and 3% for Cut 3. This is similar to the decline typically found with ryegrass crops subjected to a fortnight delay.
- One of the advantages often claimed for legumes is a higher protein content than grasses. This was evident at Grange where swards sown with only red clover had 17-19% protein at the first harvest compared to 14-16% protein with the red clover/ryegrass mixture. Ryegrass swards receiving 0 or 125kg N/ha in mid-March had first-harvest crude protein contents of about 10% and 16%, respectively.

- Red clover had relatively low DM and sugar contents and a high buffering capacity which has traditionally been presumed to present a distinct challenge to achieving good silage preservation. This has been considered one of the issues with forage legumes and has lead farmers to traditionally wilt crops (and/or apply an effective additive) to ensure good preservation of red clover swards. Under scientific parameters used for grasses, the inclusion of ryegrass in the seed mix with red clover resulted in swards that would be easier to preserve but would still require preservation to be assisted by a practice such as wilting. However, further work in Teagasc Grange has indicated that red clover swards can sometimes undergo satisfactory preservation even with little or no wilting. This outcome may reflect the effects on silage fermentation of special compounds in red clover such as polyphonal oxidase or the relatively low water activity of legumes even at relatively low DMs.
- Swards containing red clover produced more forage in midseason compared to ryegrass swards which received Nitrogen, but they produced relatively little forage after August (Table 2). Under the conditions of this study, red clover sown with ryegrass, which received no artificial N fertiliser provided an annual yield that equalled with perennial ryegrass receiving 412kg fertiliser N/ha but with a different seasonal distribution of yield (Fig. 1). Irrespective of the amount of artificial N fertilszer applied to perennial ryegrass in mid-season (Cuts 2 and 3), red clover which received no artificial N yielded significantly higher:



- Under the conditions of this study, the best management options with regard to yield, quality and ensilability of red clover swards for silage is to sow it with a companion grass, apply no Nitrogen in Spring time and to harvest under an early harvest regime (1st cut in late May rather than two weeks later in Early June).
- The two varieties of red clover used were the early-flowering diploids Merviot (Belgium and Ruttinova (Switzerland), and both fared similarly.

### TABLE 2 - PERCENT OF ANNUAL DMYIELDPRODUCED BY SUCCESSIVE STAGES OFTHE SEASON.

Time of year	Grass	+ N	Red clover + ryegrass
kgN/ha/year	0	200	0
Late May	45	43	40
Mid July	23	24	28
Late August	18	19	25
November	14	14	7

Source: Teagasc, Grange Beef Research Cent

#### **OBSERVATIONS**

- Red clover appeared very sensitive to serious mechanical damage (i.e. heavy machinery under wet soil conditions). This could limit its use on some farms.
- Lime, phosphorus and potassium values in soil should be maintained at recommended level and were not limiting in this study.
- Red clover sometimes looked quite poor during winter (both rabbits and hares seem very fond of it!) but still recovered by the following May.
- Slurry and FYM was not applied to any of the red clover, ryegrass or red clover/ryegrass swards. It remains to be clarified how red clover would respond in such a study.
- Common leaf-spot was the only very noticeable disease, being seen during wet frosty weather in early winter. No other crop pests or diseases were evident.
- The relatively good persistence of the red clover was considered the result of a very good initial establishment of the crop postsowing (the red clover seed is tiny and should be broadcast rather than drilled on the soil surface), good soil fertility and a low apparent challenge from pests and diseases.
- After six seasons of production, red clover still persisted well in the swards when appropriate management systems were used. However, the general decline in the proportion of red clover in swards by the end of the sixth full season after sowing suggests that persistence was unlikely to have continued indefinitely beyond this study. The belief that red clover swards will remain productive for at most three years needs to be revised as they can clearly last much longer than that, albeit under ideal management conditions on a field research experiment.

#### **NEXT STEPS**

The high annual yields, protein and relatively good persistence that have been achieved with the red clover/ryegrass swards managed under a cutting regime, together with the requirement for no input of mineral N fertiliser, has clear attractions in the current agricultural environment and obviously to organic farmers. There is a need for farm-scale research to confirm if such persistence can be repeated where red clover is subjected to the effects of heavy machinery during slurry/manure spreading, and silage harvesting, on a number of occasions during the year and under a range of soil and weather conditions. It will also be important to quantify herbage yield and red clover persistence if some of the lighter yielding cuts (e.g. the final cut) were mulched or grazed by livestock as a lower cost option. Finally, the potential agronomic benefits of red clover must be manifest in more profitable livestock systems and thus an appropriate whole farm economic assessment is required.

MEMBER PROFILE...MEMBER PROFILE...MEMBER PROFILE

### How **Croghan Organic Garden** are using trees to enhance the look and functionality of their site...

#### BY GRACE MAHER

Croghan Organic Garden, Boyle, in Co. Roscommon started out in 1998. It is now 1.5acres covering two plots of land located at either end of the village roughly 800m apart. In 2003, Bill Hestor took over as Manager of the garden and there are now 8 staff members (some of whom are part-time).

Two of the previous managers Brenda Walsh and Padraig Fahey both run their own successful organic horticulture businesses. Croghan Organic Garden is also a Community Services Project and as such receives state funding to provide work placements and training courses for the long term unemployed.

#### HISTORY OF THE GARDEN

The site was previously conventional grassland, and now has approximately 1/3 of the area under trees, 1/3 under grassland and 1/3 cultivated for vegetable production. As Bill outlines, "these

proportions do not owe to design, but partly to topography and partly to the ad hoc nature of the project's development.

The site slopes from south to north and also from west to east, so that the northern and eastern sides tend to sit wet". It was a conscious design to bring trees onto the site, obviously for the environmental benefits such as promoting biodiversity and habitats, but also because the garden contains a lot of polytunnels which some people find displeasing to the eye. The fact that the garden is right in the village of Croghan meant that efforts were necessary to allow the garden to function fully as a productive garden while at the same time blending into the surrounding



Trees integrated into the garden.

environment. This is a challenge faced by many gardens located in built up areas, so the gardeners in Croghan consciously set out to demonstrate how corridors of trees could conceal the polytunnels.

14% of the entire site is currently under tunnels. These were purchased and erected year by year, as any profit made was invested back into the project. Grass and white clover are sown in between the polytunnels. According to Bill, "the soil type is a silty clay loam, sitting on limestone. Soil analyses in the cropping areas over the past 10 years have given wildly different results for the presence of P and K, although these differences could be accounted for by the diverse cropping patterns here. The only consistency in the results has been low boron levels, probably associated with high pH (6.8 - 7.3) over 10 years.

Fertility is maximised in the cropping areas to justify the level of labour inputs. Farm yard manure is purchased locally, although there can be difficulty in sourcing it owing to the predominance of slurry tanks amongst local farmers. The raised areas of the site drain rapidly during any dry spells.

All outside cultivation takes place in these areas on ridges, aligned to run down the slope from west to east. The polytunnels are situated on the only area of level ground at the northern end of the site".

The vast majority of organic growers use polytunnels to some extent in their enterprise and therefore are familiar with the benefits of them. "Polytunnels are particularly valuable in northern latitude temperate climates and especially in the west of Ireland, which tends to be mild, cloudy, wet and windy.

Soil moisture levels often prevent, delay or impede cultivation in the field. Average annual rainfall here is 43 inches, 1100mm. The west of Ireland has traditionally been dominated by grassland farming for this reason. The wind chill factor is frequently the primary cooling factor. The range of crops grown, the speed of growth and the length of the growing season can all be increased by the use of tunnels. As the tunnel excludes the wind chill factor, it can make a significant contribution to temperature increase, despite the relatively high degree of cloud cover experienced here in Roscommon. I find that polytunnels can also facilitate the creation of employment opportunities by enabling work to proceed on days when field conditions make outdoor work impossible, and we get a lot of those kind of days here'' said Bill.

#### ON SITE PLANTING

The first tree planting on the site took place very early on. The southern, eastern and northern boundaries were planted with cuttings from white willow (Salix alba), as this was freely available locally, and could be relied upon to grow rapidly and provide shelter. The western boundary was planted with a translocated whitethorn hedge (Crataegus monogyna).

There are now over 1,700 trees and shrubs, which include the following species, Alder, Apple, Ash, Aspen, Beech, Birch, Bird Cherry, Blackthorn, Cotoneaster, Crab Apple, Elder, Guelder Rose, Hazel, Hornbeam, Horse Chestnut, Lime, Field Maple, Oak, Pear, Poplar, Rowan, Scots Pine, Spindle, Whitebeam, Whitethorn, Wild Plum, Willow and Yew.

#### BENEFITS OF THE SYSTEM

"While it is our subjective perception and belief that beneficial eco-system services in terms of pest and disease control result from the presence of the trees, ideally we are interested in setting up studies and experiments to make objective evaluations on how the trees are performing in this garden" said Bill. "Regarding slugs it is hard to tell as the close proximity of trees may increase slug activity, however it can be hard to determine what attracts slugs into a garden like this as the sheer fact it exists in a built up area offers slugs an immediate food source" he continued.

Bill can supply anecdotal evidence regarding the presence of beneficial wildlife, for example, ladybirds, hoverflies, butterflies, ground beetles, spiders, frogs and worms. "We have made occasional systematic counts of earthworm populations under designated one metre square quadrats, also occasional surveys of small invertebrates, using pitfall traps.

We also monitored evidence of the occurrence of various pests, for example, slugs, leaf feeding aphids, lettuce root aphid, brassica flea beetle, caterpillars, carrot root fly, cut worm, leather jacket and various fungal diseases. Birds are at times a major pest, against which we have to protect seed and seedlings with cloches, but they may on balance be beneficial, owing to predation of slugs'' he said.

Influenced by the work of Martin Wolfe on his agroforestry farm in Suffolk, Bill decided to change the rotation plan in the garden. The intention is to create barriers, gaps and visual distractions to impede pest and disease movements.

The range of horticulture crops grown at Croghan are produced by hand with little access to machinery, therefore the rotation can be a more complex one as it does not have to accommodate machines.

For example; a 150 Sq.M tunnel is divided into 18 blocks, each planted with a different species or variety. A example of a typical summer planting is; lettuce (any of 10 varieties), celery, parsley, tomato (any of 6 varieties), spring onion, cucumber, pea (any of 2 varieties), climbing French bean, squash (any of 3 varieties).

Bill feels that this has been largely successful to date, while some crops are lost each year at various levels this rotation system works well in this particular garden.

"We love the mix of vegetables and trees, as it allows us to grow food easier in a way that enhances the eco-system, and we have succeeded in taking away the industrial look that a lot of polytunnels can give a garden in a built up area.

The future plan is to continue planning more trees on site in so far as there is still space available, and to continue to supply our outlets in Carrick on Shannon, Drumshanbo and Sligo'' said Bill.

# How do you assess the health of your soil?

#### BY ANJA VIEWEGER, THE ORGANIC RESEARCH CENTRE, NEWBURY, UK

Farmers and growers are concerned about the current health of their soils (compared to 30 or 40 years ago), and some of these concerns are supported by soil analysis data collected over the same period.

Most farmers and growers understand the importance of soil health for the productivity, sustainability and profitability of their businesses, but many face significant challenges when interpreting results from laboratory analysis or when choosing suitable tools or methods for assessing the health of their soils beyond the standard lab analysis (e.g. pH, P, K, Mg). To be of value to growers and farmers, methods for soil assessment should not only measure soil health, but should also provide information that can be used to inform decision making in relation to soil management.

After a review of recent literature and soil assessment methods currently available, the second step of this task was to identify the needs and priorities of growers. To find out which soil assessment tools they regularly use, and which ones they find most relevant and suitable for their specific needs, we organised a series of grower consultations across the UK. Levy payers and other growers and advisors were invited to participate and share their experience. The consultations took place during October and December 2015: (1) in Hampton Lucy, hosted by Valefresco; (2) in Fife, Scotland, hosted by Kettle Produce; (3) in East Malling, Kent, hosted by East Malling Research; and (4) in Peterborough, hosted by Produce World. The locations were chosen to represent some of the most important growing regions of the UK, and to allow for different growing systems, soils and priorities of participants. The main focus of the events was to identify which soil assessment methods are most relevant and most useful in practice, to inform decision making on soil management.

The outcomes of the four grower consultations are summarised in the table below. This summary combines the results of the literature review with the results of the grower consultations, and adds some specific comments from the practitioners. Any useful tools and methods that were not yet listed in the review (such as crop health assessment for example) were added to the list. Each regional working group rated the different soil assessment tools and methods in relation to their (a) knowledge or skill requirements (for conducting the test, but also for result interpretation), (b) the time investment needed and (c) the costs of acquisition/lab test.



Rated very highly and used by the majority of growers is the spade diagnosis, as an easy, cheap and quick tool to gain an overview of the soil's health; able to indicate the general status of soil structure or compaction, root depth and health, soil life like earthworms, drainage, etc.. Further, the growers also rated the following methods as being very useful: crop health monitoring (plant health as indicator for soil health); other visual soil health assessment tools; or total organic matter monitoring. Over the following two growing seasons (2016 and 2017), the 4 regional grower groups are conducting field tests of a number of soil assessment methods, or combinations thereof. This aims to identify the different needs of different horticultural systems (e.g. field veg such as leafy salads or carrots, top fruit, large/small scale producers etc.); and if required, will allow the growers to make specific adaptations and improvements to soil assessment strategies, generating accurate and site-specific results for improved decision making. Various field days are planned throughout the two seasons, where other growers and advisors are invited to get involved and share their experiences. Links to the various methods available online are listed at the bottom of the page.



The GREATsoils project (AHDB Horticulture CP 107b is funded by AHDB Horticulture and is a collaboration of the Soil Association, The Organic Research Centre and Earthcare Technical.

#### Soil assessment methods evaluated and rated by growers

1=low; 5=high	Skill	Time	Cost	Suitable for	Not suitable for	Comments from	
rated by growers	required	input	input	ALL STREET, MALE		growers	
Spade diagnosis (depth 30 cm)	1	1	1	E asy, quick, good indication of soil health, fast general impression of the soil statu s	Sub so il assessment , quantitative nutrient levels	Most commonly used method, very easy and informative; 'spade is always with me'	
Soil pit/profile (depth range 30-150cm)	3	3	1	Subsoil assessment, horizonsand exact location/depthof compacted layers	No quick results , is a rather destructive method , location of sampling important	Very usefu I results if done properly, good for structure assessment	and it
Visual evaluation of soil structure (eg.SRUC VESS tool)	2	2	1	S oil structure and compaction detection	Quantitative assessment of nutrients	Somespecific knowledge required	
Visual soil assessment tools (eg.Eblex -DairyCo. Tool)	1	2	1	Good overview of a wide range of soil health indicators (roots, worms, soil structure, colour)	Quantitative asses sm ent o f nutrients	Assessment speed comeswith experience, easy to learn, need the tool only at first	
Earthworm counts	2	3	1	Good indicator for soil structure and health, soil life and activity, soil biodiversity	Quantitative assessment of nutrients, subsoil assessment	Seasonal fluctuations, som e skill required for species identification	S
Plant health monitoring (current and previous crop, weeds)	1	1	1	Early signs of nutrient deficiencies or com paction	Specific or quantitative information	Seaso nal, n eed som e exp erience and add itio nal tests for details	
Standard Lab test (macronutrients and pH )	1	2	2	Soil nutrient content P,K,Mg andpH	Eg.s oilife, structure, compactedlayers , root development	Regularly done, directly informs fertiliser strategy	Reprint Control of Con
Micronutrient test	2	2	3	Trace elements/ micronutrient levels in the soil	Eg. soil life, structure, evaluation of compacted layers	Done only if deficiencies suspected in plants	
Total soil organic matter (SOM) (usually in%)	1	1	1	Total so il o rganic m atter (labile, stable and inert fractions of SOM)	Monitoring labile SOM (providing / releasing energy and nutrients )	No need to do annually, need specific sam p ling technique!	Kez
Soil life suit es (eg. Food Web Test s, enzymaticactivity, basal respiration etc. )	5	2	5	Bacteria and fungi, num ber, species and diversity (no standards yet!)	Eg.soil structure, compaction evaluation	Skill required for adequate sam pling and high skills for interpretation !	
Soil Health Test (NRM)	3	2	3	MeasurespH, avail. P, K, Mg, texture, total SOM and respiration rate	In -depth evaluation and meaningfu l results/conclusions	Skill required for interpretation of overall results, e.g. respiration rates!	
OM balance modelling tool	5	5	2	Input/output estimation of SO M levels on field or farm level	Beginn ers in SOM asses sm ent, basic day - to-day asses sm ent	Not commonly used in UK yet, but might be promising planning tool	
Usefull inks and reference	s						
Visual evaluation of soil structure	eg.S	RUCVESST ool http	x//www.sruc.ac.	k/info/120062/crop_and_soils_syste	ems/412/visual_evaluation_of_soil_s	tructure	cole populational
Earthworm counts	eg.E	w.opalexplorenature.or	g/earthworm	guide www.opalexplorenature.c	org/sites/default/files/7/file/soil	-survey -field -guide -201	4.pdf
Soil life suites	Food	-webt ests, enzymatic	activity, basal resp	irationetc.eg. www.la	verstokepark.co.uk/soil -food	web -testsaspx	
Soil Health Test	NRM	www.nm.uk.com/se	vicesphp?service	-soil -health			

Publication on the tool: orgprints.org/12077/1/Brock\_12077\_ed.doc

OM balance modelling to ol

www.iofga.org 25

# ALBRECHT SOIL

Whites Agri Services Ltd, in conjunction with our partners Glenside have been providing the Albrecht soil analysis to organic and conventional farmers in Ireland for the last number of years. This collaborative article was written for Organic Matters by Padraig Shelvin from Glenside and Noel Walsh from White's Agri.

The Albrecht® soil analysis provides a range of information that allows advisors and farmers to examine the three fundamental pillars of soil health; Physical - Chemical – Biological conditions of the soil.

By measuring and evaluating the cation exchange capacity (CEC) of the soil we are able to make precise decisions on the nutrient applications needed for any crop. CEC measures the ability of your soil to hold and exchange nutrients. They are very dependent on soil type and organic matter levels, the higher the figure the more nutrient holding sites you have. The higher the figure the greater the amount of inputs you need to change this.

Generally, a clay or high organic matter soil will have a high CEC whereas a light sandy soil tends to have a low CEC which means small changes in a farmers' fertiliser programme will make a great change to this soils nutrient profile. This principle is explained in more detail below see chart 1 and 2.

But before the farmer can decide on his nutrient applications he has to identify his levels in the soil whether they are in surplus or deficit in the soil. The Albrecht® soil analysis, clearly indicates these by giving a kg/ha of total reserves, available nutrients and also a base saturation percentage for the major cations:

- CALCIUM
- MAGNESIUM
- POTASSIUM
- SODIUM

Key anions like phosphate and sulphate are also included in the results, shown as kg/ha total reserves and also kg/ha plant available. So what does this mean to the farmer? Traditionally liming applications were calculated off the pH figure which gives little consideration to what is affecting the pH. The pH is affected by all the major cations, Calcium, Magnesium, Potassium and Sodium but predominantly Calcium and Magnesium. It is very important to know which one of these is deficient in a low pH soil to help you



#### BY PADRAIG SHEVLIN (THE GLENSIDE GROUP) AND NOEL WALSH (WHITE'S AGRI)

decide what type of lime (i.e. Calcium or Magnesium lime) to apply. Secondly you need to know how big the soil is (CEC) as this determines how much lime you need to apply. One of the key services the Glenside group soil tests offer is to link pH and soil size (CEC) to lime type and volume recommendations. Right for the soil right for the farmer.

#### Example:

A light sandy soil in Stradbally, with a CEC of 7.98 and a pH of 5.7 but does not require bulk calcium lime.

Volumes get to a	s requir soil pH	ed to of 6.5	1		This soil is only sho of Calcium, not end warrant bulk lime a instead granular ca be a better option.	rt 137kg/ha ough to application, ilcium could	
Malor Flore	ante la	Repo	orted as kilog	rams/hectare e	lemental (kg/ha)	% Base Cation	n Saturation
Elemental	form	kg/ha_ DESIRED	kg/ha Found	Difference	ELEMENTAL kg/ha.	DESIRED	EOUND
Calcium	(Ca)	2359	2222	-137	2938	66.00	62.16
Magnesium	(Mg)	300	78	-222	1190	14.00	3.66
Potassium	(K)	300	208	-92	1608	4.25	2.99
Sodium	(Na)	37	49	13	176	0.89	1.20
Other element	nts	7%	6.00		Minor Importance	6.86	6.00
Hydrogen		8%	24%			8	24
sulphur		28	7.83	-20	338		
Morgan Phos	phate	35	31	-4	992		

In contrast this larger CEC permanment grass ley with a CEC of 12 and a pH of 5.7 does require bulk calcium lime application totalling I ton per acre.

Volu get	imes re to a soi	equired to I pH of 6.5			This soil is short 848 Application of 1 ton Calcium lime is need deficiency.	kg/ha of Cal per acre of led to correc	t the
Malas Firm		Rep	orted as kilogr	ams/hectare e	lemental (kg/ha)	% Base Cation	n Saturation
Major Elements in Elemental form		kg/ha_ DESIRED	hakg/haDifference		ELEMENTAL kg/ha.	DESIRED FOUN	
Calcium	(Ca)	3413	2565	-848	5150	68.20	51.25
Magnesium	(Mg)	354	388	33	3810	11.80	12.91
Potassium	(K)	320	365	45	2012	3.23	3.74
Sodium	(Na)	51	121	70	191	0.89	2.10
Other eleme	nts	7%	6.00		Minor Importance	7.88	6.00
Hydrogen		8%	24%			8	24
sulphur		28	11.60	-16	1040		
Morgan Phos	phate	35	31	-4	1884		

# ANALYSIS...

Mr farmer

HillFarm

Ireland

Field ID: Big Field

Active pH 5.70

6.60

A moderately acidic soil.

Otop dependant responses.

Buffer pH

Priority,

onside

liming.

We then have to look at the other major elements, Magnesium, Potassium, Sodium, Sulphur and Phosphorus. The soil analysis gives us figures for the readily available nutrients and also what is in reserve, this allows us to make informed decisions on what nutrients are needed to be supplied to the growing crop as plant food.

However it also gives a picture to what could be potentially exploited in the soil by stimulating the right chemical, physical and biological elements in the soil. This is especially applicable to organic farmers due to fertiliser restrictions necessitating the recycling of the soil reserves.

Macro minerals are highly important in growing quality crops but micro minerals are equally as important and play an essential role in increasing the plants effective use of the macro elements. Our soil survey examines the following micro elements:

- BORON
- IRON
- MANGANESE
- COPPER
- ZINC
- MOLYBDENUM
- CHLORIDE
- COBALT

When people speak about trace elements the first thought is supplementation for animal health. This is an oversight, as all these elements play the same crucial role in plant health and performance as they do in animal production.

The Albrecht soil surveys give a whole overview of the complex workings of a healthy soil and how this can bolster crop yields and profitability. Soil test-target inputs-boost yields.

# WHITE'S AGRI Sustainable Soi Sustainable Soi C23804 SSM Management Sample DATE 20/20/2015

Padraig She vlin

Padraig She vlin

A key measure of the soil's

soil nutrients.

6=small 40=large

ability to hold & exchange

CROP SOWN:

Solutions for Eco-nomically Sustainable Farming

SSM Soil Advisor

Facts Fertiliser Advisor

Total Exchangable

Capacity (TEC)

0 Ha

Report DATE:

Grass

Dry bulk density tim 3

Estimated Soil Type

Dark coloured Sands, sandy Loa

0 FE/5488

Result

11.17

20/12/2015

0.004

Organic Ma	atter	Min >3%	8.50	) 10	vels helping soil structure and nutrient holding capacity Bining organic Carbon is essential for sustainable farming.				Estimated N	100	kg of NR from O'M	
Organic Ca	rbon	ideal>5%	4.99	9 Maint					T/C/ha Target	75	Found 68 T/C/Ha	
pH		This is a very aci	d soil. The trac	e elements will be	xome har mful t	o roots ifnot ad	idressed. In parti	icular iron and	mangan ese.			
Caldum		Calcium is below	v a critical thre	shold for roots	to function cor	rectly. Increase a	nd maintain calci	um levels as par	rt of a program	£1.		
Magnesium	n	Magnesium cou	Id bereduced	l where possible,	or raise calcium	and potash app	propriately to ad	dress the eleval	ted Mg levels.			
Potash		Potash is high	and should be	ereviewed as part	ofaprogramed	i approach.						
Sodium		Sodium levels a	reaboveourg	uides and should	bemonitored	as part of a proj	gram, ensure Pot	tash is higher in	BCSR%			
Phosphate	5	Applyphosph	atein an accep	table product ty	pefor the soil's	pH; include a soi	il phosphate bui	ld factor if pos	sible.			
Sulphates		Low levels of su	lphate in reser	rve; look to build	soil levels if pos	sible. ?N:Sratios						
		Rep	orted as kilogr	ams/hectare elem	iental (kg/ha)		% Base Cation	Saturation	1			
Major Eleme	nts in	CROPAV	A LABLE NU	TRIENTS	TOTALIN SO	OIL Reserves	Ratios	(BCSR)	30.00	Desired Cator	1% v Found	
Elemental	form	kg/ha	kg/ha	Difference	E EMENT			FOLIND	25.00			
		DESIRED	Found	End dive_	-		Manual	LOVING.	-		. Z -	
Calcium	(Ca)	3413	2565	-848	5	150	68.20	51.25	20.00			
Magnesium	(Mg)	354	388	33	3	810	11.80	12.91	15.00			
Potassium	(K)	320	365	45	2	012	3.23	3.74				
Sodium	(Na)	51	121	70		191	0.89	2.10	10.00	1	_	
Other element	nts	7%	6.00		Minor In	nportance	7.88	6.00				
Hydrogen		8%	24%				8	24	5.00	141		
sulphur		28	11.60	-16	1	040			0.00			
Morgan Pho	sphate	35	31	-4	1	884			Mg	K Na d	ather H	
General con	mment o	n Calcium	The calcium is	critically below t	he acceptable ra	ngefor roots to	function					
		RATIOS:1	Target level	Found	St	ructural comme	nts	1	Plant health	n comments		
Caldium		Ca : Mg	5.78	4.0	Co	mpacting conditions	k:		A calcium low soil.			
Magnesium	n	Mg:K	3.65	3.45	Sticky in wet conditions; hard in dry				Increase solution	magnesium.		
Potassium		K :Mg	0.90	0.94	Few crop Mg pro	blems unless soil o	isficient		Avoid excess potash			
Potassium		K :Na	3.63	1.78	Increased in	isk of disease and p	est.	Considera	mending the potas	hand sodium r	ato.	
			BC	/TDS	Sodium Ads	orbtion Ratio	Estimated	Sodium Pote	ntial (ESP)		Na:K	
Electrica	Condu	tivity&		0.00	Guide <4	0.20	10 Guide result <6 2.10 Na sho				uld be lower than K	
Total	Desolvab	le Salts	This has not i	been tested			Potential dispe	rsible soil surface	in rain.		ratio OK	
Photoboru		1.62	0/5.0	These soil also also	Sectorality Con		in the formation in the				1	
C-D ratio	5	35.9	70 J*0	Poor soil prosprai	a incontainy. L of	SIGH WAN CERSITIA	ILLS IN THE SECTION OF 10	3W.				
oH			the second se	Redredsor fum	us eserves can	lead to mor phospha	te functionality.					
Organic Ca		5.70	40101	A funzal dominate	nus reserves can idenvironment	lead to poor phospha	nte functionality.		Priority: consis	ieclimine.		
	rbon	5.70 4.99	%	A fungal dominate A measure of the	us reserves can id environment. functioning of the si	lead to poor phosphe oil carbon.	nte functionality.	Ai	Ptiority; consis m for soil carbon t	terliming. 1) be above 5%		
	rbon	5.70 4.99	%	A fungal dominate A measure of the	us reserves can xd environment functioning of the s	lead to poor phospha oil carbon	ne functionality.	Ai	Pliority; consid m for soil carbon t	derliming. 10 be above 5%	1	
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This report is based on the soil sample as meived, and labeled by the sender. The company will not be reponsible for any errors in sampling or labelling.

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# Interpreting and Utilising Information from a Comprehensive Soil Test

I am farming with my partner Ann, in Mountrath, Co. Laois on a groundwater gley with a sandy loam topsoil. The land is not free draining and is prone to soil saturation for prolonged periods over the winter. It is a grassland farm with two enterprises – sports horse breeding and calf/weanling to beef.

#### BY DAVID WALLIS

Current stocking rate is 1.3LU/ha. A mixed grazing rotational system is used and I am looking to adapt and improve the management system to suit the farm soil type and grazing potential. The balance between horses and cattle is not ideal: less horses and more cattle would be preferable from a grazing management position, but that is not likely any time soon and the challenge is to make the current enterprise mix work as best as possible. The farm is not registered organic but no chemical nitrogen, muriate of potash or acid phosphate has been used in three seasons. The intention is to implement "biological farming" practices and with this in mind, soil samples were analysed by Sustainable Soil Management(Glenside) Group in February 2015. These tests show the current soil nutrient status and the information provided will help to balance the soil nutrient reserves and improve soil biological activity through the use of suitable amendments and better management practices. The following is my personal interpretation of one of the soil tests I had taken. I am not a soil scientist and comments I make are open to be challenged. I have broken down the test results into sections: I to I4 (red numbers with yellow highlighting). It is very important to note that the soil test is very specific and caution is advised in drawing conclusions for other soils on other farms.

#### **SECTION I**

Active pH - the field had 5mt/ha of high-calcium limestone spread 15 months before the test was taken. This is the pH of the soil sample solution. This soil pH is good and will facilitate the availability of nutrients.

**Buffer pH** - this is the pH obtained in the laboratory by adding a calcium buffer solution to the soil sample solution. This test determines the Lime Requirement for the sampled field and thus the recommended tonnage of lime that should



An open drain was excavated in 2014 and here is a view of the soil profile (photo taken march 6th 2016).



The same open drain showing the amount of iron in the water (photo taken march 6th 2016).

be applied on the basis of specific soil/crop requirements. For this field no lime application is recommended at this time.

#### **SECTION 2**

#### Total Exchange Capacity (TEC) - |

was surprised at this result: the TEC is very low at 6.84. Typical loam soils would have a TEC of 12 to 18. Clay to high Clay soils would have a TEC in the twenties and higher. The TEC figure of 6.84 indicates that the soil has a small nutrient holding capacity.

#### **SECTION 3**

**Estimated Soil Type** - Prior to the test I would have classified the soil as a sandy loam – in fact it is a "light coloured sand". The dry bulk density figure for this soil is 0.908mt/m3. This means that the number of kgs/ha of soil in the top I 5cm layer can be calculated. Knowing the "dry bulk density" of the soil the optimum level of trace elements (in kgs) to be applied per Ha can be calculated.

#### **SECTION 4**

**Organic Matter (OM)** – the total OM consists of plant residues, living microbial biomass, decomposing plant, animal, manure and microorganisms plus Humus. The figure of 8.2% is reasonable for permanent pasture but there is room for improvement and I have a target of achieving 12% OM.

**Organic Carbon** – this is the humic fraction of the OM. Humus is the stable fraction of the OM and contributes to soil structure, tilth, exchange capacity and storage of nutrients for both microbes and plants. The TEC of humus varies from 150 to 250. Compare that to the soil TEC of 6.84. It is clear from these figures that to improve the soil nutrient holding capacity, an increase in the percentage of humus in the OM is necessary. This will also ensure that more nutrients are available "on call" to both microbes and plants as and when they are needed.

The current figure of 4.81% is a little short of the ideal of >5.0%. The figure confirms that more attention to improving soil structure will be needed. I have a target, over time, of achieving 10% humus in the total OM.

#### **SECTION 5**

**Estimated NR** - "NR" is Nitrogen Release". This figure is calculated from the total OM and for this soil it is 98kgN/ha. I consider that it will be feasible to achieve I 50kgN/ha over time as the soil condition and structure improves.

T/C/Ha - Tonnes of Carbon per Ha. In view of how important the issue of carbon sequestration is and will be, it is useful to know the Target Carbon tonnage per hectare: for this soil it is 75mt C/ha. The actual figure is 66mt C/ha at the time of the soil test. I am confident that the target figure will be exceeded as the soil condition improves.

#### **SECTION 6**

% Base Cation Saturation Ratios (%BCSR) - the negatively charged exchange sites on the clay-humus colloid surfaces are where the Cation (positively charged) nutrients are adsorbed (similar to static cling): adsorbed nutrients are "insoluble but available" to plants. In the biological farming approach there is considered to be an ideal % ratio of the four major cations: Ca, Mg, K & Na. If these ratios are in balance, the availability of these nutrients to both plants and microbes is considered to be at an optimum. The ratio is determined by each individual soil's TEC and clay/silt/sand content. The 'desired' ratio %'s for this soil are Ca:65.5%; Mg:14.5%; K:4.95%; Na:0.89%; other elements (includes positively-charged trace elements)6.16% and Hydrogen ion(H+)8.0%.

The 'found' percentages show that the Ca is high (75.69%), Mg is very low (6.42%), K is low (2.79%) and Na is high (1.5%)

#### **SECTION 7**

#### **Crop Available Nutrients** – these figures are obtained using a Mehlich 3 to

figures are obtained using a Mehlich 3 type test where the reagent is stronger that the Morgan's test reagent. The 'desired' figures here are directly related to the Base Cation Saturation Ratio percentages (BCSR%) calculated for this soil (shown in section 6). The surplus/deficits can be seen in kgs/ha for the four major cations (Ca, Mg, K & Na).

The last two Nutrients, sulphur and phosphate are very low and a cause for concern. The figure for sulphur is zero indicating that no available Sulphur was measured. Sandy soils tend to be low in sulphur. Sulphur is the 'activator' or catalyst in soil chemistry and is essential for the effective functioning of soil biology. Sulphur levels must be adjusted first to facilitate the increased availability of all the other essential nutrients.

The phosphate level measured (using Morgan's test) is the amount of phosphate in the soil solution i.e. soluble phosphate. The levels are very low and need to be increased to ensure optimal plant growth.

#### **SECTION 8**

**Total in Soil Reserves** – These figures are obtained using a very strong reagent, aqua regia which is a mixture of nitric and hydrochloric acid. Here it measures the total major nutrient reserves (leaf analysis tests use a similar reagent). This test measures the 'slowly available' major nutrients in the soil. To access some of the less 'available' reserves, a fully functioning soil biology is needed. In this soil the biology is not functioning well enough to tap into these reserves. This is the key issue to be addressed over time. Note that the total reserves are measured in elemental form e.g. the Phosphorus (P) level here is 1,024kg/ha equivalent to Phosphate (P2O5) level of 2,345kg/ha - that is a lot of phosphate!

#### **SECTION 9**

**Ratios and Comments** – The ratios between the four major cations, Ca, Mg, K & Na both 'target' and 'found' are shown and relate directly to the %BCSR's; both 'target' and 'found'. Here the comments on soil structure and plant health are pertinent and should be noted. They reflect the need to work towards balancing the soil nutrients.

#### **SECTION 10**

Summary Statements - it is important that the statements are NOT looked at in isolation: pH level is fine for grassland. Calcium levels are a little elevated but are not too big an issue here. Magnesium levels are low and will need to be increased. Similarly with Potassium - levels need to be increased as K ratio to Na is too low. Sodium levels are elevated – this is likely due to the cold damp conditions at the time of sampling. Available Phosphate levels are very low and this must be remedied as soon as possible. Sulphur levels are very low and again immediate remedial action must be taken. Nitrogen to Sulphur ratio (N:S)? Optimum N:S ratio is 6:1 but here it has to be higher due to the minimal sulphur levels.

#### SECTION II

**Sodium** – Electrical conductivity and total dissolvable salts were not measured. Sodium adsorbtion ratio: it is a measure of the amount of sodium relative to Calcium and Magnesium in the soil solution. Here it is low at a 0.10 ratio. Soils with high exchangeable sodium can have poor structure and low water percolation rates thus potentially limiting plant growth.

Estimated Sodium Potential: this is a measurement of how potentially erodible the soil surface during rainfall is, and is related to the level of exchangeable sodium in the soil. Here the figure of 1.5 and is fine. The K:Na ratio is stated as being ok as the Na is lower than K; but checking the K:Na ratio in section 9 it is clear that this ratio is too narrow for the optimal uptake potential for both of these nutrients.

#### **SECTION 12**

**Biology** – Phosphorus functionality: This is estimate of the potential access to the total soil Phosphorus (P) reserves and the Phosphate (P2O5) availability in the soil. It is a key indicator: the estimate here is a functionality of 0.5% and the target is between 5 to 8%. It is clear from this figure that the soil biology is not working effectively – it is the soil biology in the main



that solubilises Phosphorus (especially important are Mycorrhizae). There are a number of reasons, all interconnected, for this soil having poor biological activity, but too detailed to elaborate on here.

C:P ratio – the minimum C:P ratio that is recommended is 40:1. The figure here is 60:1 and looks good but is it? It is a consequence of the low phosphorus solubilising activity in the soil that the ratio looks good. This is a great example of NOT looking at measurements in isolation. From physically looking at the soil profile at the time the samples were taken it was evident that organic matter levels were very good at or near the surface but below 5cm the soil was tight, had not got a good smell and thus was short of oxygen. The pH and organic carbon have both been referred to in previous sections.

#### **SECTION 13**

#### Predicted availability of trace

elements – The trace element results made it clear that the soil biology could not possibly function at an optimum level without the deficiencies and excesses being addressed. Boron is very low: it is very important for plant sap pressure which affects nutrient transport flow, especially in legumes. Iron levels are excessive: this soil has high levels of iron but the situation is made worse here by compaction and thus poor biological activity. Aerating the soil when ground conditions are suitable will reduce soluble iron levels. Manganese here is fine. Copper levels are very low and thus restricting chlorophyll production, carbohydrate synthesis and root metabolism and other plant functions.

Zinc is low and is limiting phosphate uptake and root function. High chlorine levels reduce biological activity: here they are a little high but are likely to be lower when the soil is warmer. Molybdenum is fine: it is essential for N fixation by rhizobia in legumes. Cobalt levels are extremely low (I inserted the comment in light blue on the soil report) and sufficient levels are necessary for phosphorus-solubilising microbes to function efficiently.

#### **SECTION 14**

These are the Morgan's test results for pH, P, K, Mg and Ca and show the levels of these nutrients that are soluble. Both P and K are low and are limiting plant growth potential.

**Conclusion** – This report has woken me up to the necessity to be more attentive to what is going on in the soil. It is evident that the soil biology is not functioning correctly but I now have a clear picture as to what needs to be done to improve soil structure, nutrient balance and biological activity.

If all the issues raised are addressed over time, better quality forage will be produced and thus stock with better thrive and hopefully better returns!

			Sustainable Soil     Sample No:       SS     Management     LAB No:       Solutions for Eco-nomically Sustainable Farming     Sample DATE:       SSM Soil Advisor     Padraig Shevlin     07836 722533						Q2 44 	3804 1119 2/2015 2/2015
	)		SSM Soil A Facts Fertilise	dvisor r Advisor	Padraig Robert	shevlin Mccoull	07836 72253 F/01146	13		
Field ID	HILL FIELD		4 <u>+</u>	ła	<u>(</u>	CROP SOWN:		Grass (G	Grazed)	
Active pl	<u>1</u> 6.40	Canalidae Dara			A key measu	re of the soil's	Result	<u>Esti</u>	mated Soil Ty	/pe
A slightly ac	idic soil.	Crop pH	Total Exchanget	ole Capacit	/ ability to hold	& exchange soil	6.84	light	t coloured Sa	und
Buffer pl	<u>1</u> 6.80			6 = small, 40 = large.				Dry bulk de	nsity t/m3	0.908
Organic Matter	Min >3%	8.20	Le	vels helping so	l structure and nutrie	nt holding capacity		Estimated NR	96 kg of	NR from OM
Organic Carbon	ideal >5%	4.81	Mair	taining organic	Carbon is essential fo	r sustainable farming	g	I/C/ha Target	75 Found	66 T/C/H
pH adjustment recommendations would depend on the crop type, some adjustment may benefit some crops.										
Magnesium	Magnesium leve	els in the soil so	ulution need to be in	creased to e	nsure adequate a	vailability to the	crop.	20122-01240-02400		
Potash	Potash is low an	id should be in	reased appropriate	ly, this could	affect potassium	: sodium ratios.	is historia PC	<b>CD</b> 9/		
Phosphates	Apply phosphat	e in an accepta	ble product type for	the soil's pl	; include a soil pl	nosphate build fa	ctor if possible.	511.70		
Sulphates	Low levels of su	lphate in reser	ve; look to build soil	levels if pos	ible. ?N:S ratios					
	R	teported as kild	grams/hectare elen	nental (kg/	ha)	% Base Catic	on Saturation	16.00	lead Cation% u	Found
Major Elements in Elemental form	CROP A	VAILABLE NU	ITRIENTS	TOTAL IN S	SOIL Reserves	Ratios	(BCSR)	14.00	ired <u>Cation</u> % v	Found
	kg/ha DESIRED	Found	Difference	ELEME	ITAL kg/ha	DESIRED	FOUND	12.00		
Calcium (Ca)	2007	2319	312	5	748	65.50 14.50	75.69	10.00		
Potassium (K)	300	118	-149	1	292	4.95	2.79	8.00		-
Sodium (Na)	31	53	22		106	0.89	1.50	6.00	-	
Other elements	7%	4.60		Minor I	mportance	6.16	4.60	4.00		
sulphur	28	0.00	-28		964	0	9	2.00		
Morgan Phosphate	35	5	-30	1	.024			Mg	K Na oth	ier H
General commen	t on Calcium	This soil's calci	um level is high and	can potentia	lly lock up other	nutrients. in conj	unction with a	high pH		
Calcium	RATIOS:1 Ca:Mg	Target level 4.52	Found 11.8	Over-	flocculating soil si	<u>nts</u> tructure.	А	Plant health solution magnesi	comments ium deficient so	bil.
Magnesium	Mg: K	2.93	2.30	This soil cou	ld slump tight and	dry out easily.		Increase solution	n magnesium.	
Potassium	K : Mg	1.13	1.41	Some crops	may have proble	m getting Mg.	Consido	Potash should t	be increased.	um ratio
Fotassium	K . Nd	5.57 EC	1.80	Sodium Ar	sorbtion Ratio	Fstimat	ed Sodium Pote	ential (FSP)	N:	a · K
Electrical Conductivity & 0.0 Total Desolvable Salts			).00 ot been tested	Sodium Adsorption Ratio         Estimated Sodium Pot           Guide <4			1.50	Na should be	e lower than K io OK	
						Potential d		urface in rain.	rati	
Phosphorus C:P ratio pH Organic Carbon	0.50% 64.0 6.40 4.81	40 to 1 %	Poor soil phosphate Good humus reserv A good biological e A measure of the fi	e functionalit (es potenti nvironment. Inctioning of	y. Consider why p ally able to supply the soil carbon.	Potential d hosphate is functi amino acids and	ionality is low. phosphates for A	urface in rain. the soil food web. Consider Rec im for soil carbon	rat q: Crop pH. 1 to be above 59	К
Phosphorus C:P ratio pH Organic Carbon Predicted avai	0.50% 64.0 6.40 4.81	40 to 1 %	Poor soil phosphate Good humus reserv A good biological e A measure of the fe	e functionalit /es potenti nvironment. unctioning of Guides	y. Consider why p ally able to supply the soil carbon.	Potential c hosphate is functi r amino acids and	ionality is low. phosphates for A PLICATIONS	urface in rain. the soil food web Consider Rec tim for soil carbon	rat q: Crop pH. n to be above 59	% 'reatment
Phosphorus C:P ratio pH Organic Carbon Predicted avai Boron	0.50% 64.0 6.40 4.81 Iability of trace B	40 to 1 % elements mg/l	Poor soil phosphate Good humus resen A good biological e A measure of the fe Found 0.50	e functionalit /es potenti nvironment. unctioning of <u>Guides</u> 1.2-2.4	y. Consider why p ally able to supply the soil carbon. Low poor N & Ca	Potential d hosphate is functi amino acids and IMI Utilisation, effect o	ionality is low. phosphates for A PLICATIONS on Meristem grow	urface in rain. the soil food web Consider Rec tim for soil carbon ving points	rat q: Crop pH. n to be above 59 <u>T</u>	% ' <u>reatment</u>
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### INTEGRATED CATCHMENT MANAGEMENT (ICM)

#### - A Collaborative Process to achieve genuine sustainability

Water is an essential commodity: human life – and indeed all life on earth – depends upon it. The question is "how will we deal with it such that it sustains us now and in the future?" This article tries to provide some answers.

#### **Our Vision for Water**

According to Proverbs 29:18, "Where there is no vision, the people perish". So, looking ahead not just for our own lifetime, but that of the country's children, what might that vision be for water in our local areas? Some suggestions are given in Box 1.

#### BOX I

#### **Our Vision for Water – Options**

- "A river for people: healthy, accessible and contributing to community well-being".
- "I would like to farm in a way that provides me with a living, benefits the land and the water in it, enhances the community and has a future."
- "A water friendly and knowledgeable end-user community".
- "A healthy, resilient, productive and valued water resource, that supports vibrant communities."

All these options are connected to a greater or lesser degree; as a water scientist in the public sector, the last one attracts me most, but as a citizen, all are appealing and relevant.

But these are not just vague 'visions' or wishful thinking; they are also objectives that we need to achieve to enable a sustainable future. A lot of us have become disconnected from water because of our modern life styles; just imagine how vital water was to people in centuries past where the local well or spring was a crucial component of people's lives, and not just for drinking, but for spiritual purposes as well, as the number of holy wells in Ireland shows. Think as well of how important water is in many other parts of the world, such as the drought-prone areas of Africa, and how its importance will increase as the consequences of climate change and increasing world population impinge on us. It may not be realised fully yet, but we are at a cross-roads in Ireland where water is making, and will make, a come-back as a critical element in the

#### DONAL DALY Environmental Protection Agency

development of Irish society. Why is this?

- Clean, healthy water is needed for drinking. Charging for water is creating a greater awareness of water.
- Healthy water is the basis of the high quality food production on which our health is based and which provides us with commercial advantage in exporting food products. The increased output from farming required to achieve the *Food Harvest 2020* (*FH2020*) and Food Wise 2025 planned outputs is based on the concept of 'sustainable intensification' see Box 2. We have an advantage over most countries in terms of our water quality (and quantity), but there is a danger that our inability to maintain this satisfactory water quality and improve our unsatisfactory water quality could constrain our ability to increase farming outputs.
- Healthy water is needed to maintain or restore, as appropriate, our aquatic ecosystems; this is not only a benefit to Irish society but is a requirement of the Water Framework Directive (WFD). Healthy water is needed for recreation and tourism.

#### BOX 2

#### Farming and Sustainability

'Sustainability' is too often used as a buzzword and is presented as a positive concept only, with emphasis being put on 'economic sustainability' as the primary objective. While, if it is genuinely achieved, it is a positive outcome for society, but achieving it will be difficult. 'Environmental sustainability' must be the basis for 'economic sustainability'; environmental sustainability must come first or we will destroy the 'stocks' (soils, water, ecosystems, geosystems) on which our livelihoods are based. FH2020 is not a 'one-way street'; nor is sustainability. Increased intensification is achievable in some areas without any negative impact on water, provided best management practices are followed. However, it is not feasible everywhere; for instance, where our soils and subsoils are too poorly draining. Therefore, it is necessary to be realistic about the 'sustainability' concept; it represents an opportunity and is necessary for the long-term well being of society, but there will be constraints for some land owners and it will be challenging to achieve.

#### Learning Lessons from the Past

In considering water management in the future, we first need to evaluate the lessons from the past and present. There are many to be learned, but I will concentrate on just one, which can be summed up in the phrase "It is people who save rivers, not plans ......"<sup>1</sup>. Without the involvement, cooperation and co-ownership of water management by local people and communities, the degree of success that is needed will not be achieved. Even though the Water Framework Directive established public participation in legislation, implementation of this element of the WFD has been inadequate and instead, to-date, the main emphasis has been on regulations and on the 'command and control' approach, using inspections and compliance checking rather than seeking behavioural change through community stakeholder awareness and involvement.

#### Where are we now?

The Water Framework Directive (WFD) is the main driver for water management in Ireland; it is a major piece of EU legislation designed to protect, preserve and improve the aquatic environment whilst encouraging the sustainable use of water. It sets specific requirements regarding the protection of existing satisfactory water resources and restoration of unsatisfactory water resources. The deadline set for the improvement of substandard water is 2015, although this can be extended to either 2021 or 2027 where there are good scientific and/or economic reasons. Ireland missed the deadline of 2015 for completion of the 2nd River Basin Management Plan due to the financial crisis and the recession, and 2017 is the new deadline for submission. In the meantime, EPA monitoring continued which is showing there has been a general decrease in phosphate and nitrate in water nationally. However, 47% rivers, 57% lakes, 55% of transitional and 7% coastal water bodies require improvement to satisfactory condition. The two most important suspected causes of pollution in rivers are agriculture and municipal sources, accounting for 53% and 34% of cases respectively. While it is too early to say yet, it is unlikely that the target of 13.6% improvement in ecological status for surface waters from the 2009 baseline by 2015 will be met in spite of significant expenditure by government departments and farmers on, for instance, farm buildings, wastewater treatment facilities and REPS measures. As a consequence, water quality could become the new 'quota', unless the achievement and maintenance of satisfactory water is prioritised and acted upon.

#### Looking to the Future

Thankfully there is progress and a new impetus to evaluate the water resources situation and to arrive at measures to protect or, where necessary, restore our water to at least good status. The EPA has been given additional responsibility and resources; a new Local Authority Water & Community Office has been set up, which will be led by Kilkenny County Council and Tipperary County Council – this will focus mainly on community engagement; and there is now a new body – Irish Water – which can help ensure an integrated approach to sewage treatment and water supply. However, improvements in governance arrangements in the public sector will not be sufficient on their own. The greatest reason for

optimism is that integrated catchment management (ICM) has become the agreed approach to achieving WFD objectives and the sustainable use of our water and land resources. Why?

- 1. It is catchment-based it aims to connect people with their local stream, river, lake, spring or coastal water.
- 2. It integrates all water types, all relevant disciplines, including social science, and attempts to link with biodiversity, flood mitigation and reduction in Greenhouse Gas emissions.
- 3. It uses a broad range of 'tools' in the toolkit', ranging in a continuum from local participation and partnership to enforcement.
- 4. It requires close collaboration between relevant public bodies.
- 5. It requires a combination of 'bottom-up' and 'top-down' approaches.
- 6. It involves awareness -raising, engagement and consultation with local communities.
- 7. It presents a 'new' vision of a healthy, resilient, productive and valued water resource, that supports vibrant communities.

Achieving successful environmental outcomes will be difficult and it would be easy to be dismissive; however, by making ICM a common purpose, by giving it priority in allocating scarce resources, by overcoming or bypassing all obstacles, by collaborating in an open way, and by being determined to 'make it happen no matter what', the utilisation of our waters and associated lands can be undertaken in a sustainable and ethical manner.

#### **Readers of Organic Matters**

One of the issues we are considering at the moment is the role of farming measures to protect/improve water quality and biodiversity; both those in place, such as in the current regulations and as options in GLAS, and possible new ones. If readers of Organic Matters have suggestions and/or comments, please email them to me at **catchments@epa.ie**. Also, follow our work in the Catchment Newsletter, which can be accessed at: **www.catchments.ie** 



encompass and <u>connect</u> all activities, past and present, and all functions and services needed in an area, including water supply, ecosystems, geosystems, biodiversity, food production, recreation, etc.

' Quote from "Saving Eden: A Manifesto" www.savetheeden.org

# How organic beef from the emergence and innovative

According to the 'Associated Craft Butchers of Ireland' many years ago meat sold in local butchers around Ireland was limited to steaks, chops, roasts and mince. Then a growth in foreign travel through low cost airlines allowed the Irish public to experience a great selection of new meat dishes, some of which they would like to recreate at home.



#### BY ULRICH HOECHE Assistant Lecturer in Culinary Arts at GMIT in Galway

In addition, the recent increase of people from many other countries working and living in Ireland has seen a rising demand for a wider variety of beef cuts. The names of many meat cuts vary greatly from country to country and so do the cooking methods applied.

In tandem to the above, there are more and more chefs looking for organic products as well as using beef cuts that



during the Celtic Tiger Years had been nearly forgotten, such as Beef Cheek, Short Ribs and Father Blade. The way in which these tougher cuts are cooked is also changing, with chefs applying a cooking method traditionally associated with food manufacturing called Sous Vide. This cooking method is finding its way more and more into restaurant kitchens. It allows chefs to cook very precisely at very low temperatures over long periods of time,



while minimizing weight loss and shrinkage. The method would be worth exploring for those organic farmers that are processing their own beef and looking to create value added products.

However the fact that could be most relevant in the future to the organic beef sector is the recent trend to increase the use of underutilised beef mussel through the innovative use of new beef cuts. This



# farmers can benefit of new beef cuts cooking methods...

recent trend is coming from the US and will more than likely find its way into Ireland.

The use of these new and emerging cuts has seen big improvements to the carcase value. The cuts are mainly derived from the harder working areas of the animal especially the beef round and the chuck.

The American Beef Innovations Group states that "A stringent, scientific process to analyse individual muscles in the chuck and round identified those with marketable value beyond their traditional use" The Round (known in Ireland as Topside, Silverside, Thick Flank and Leg) broken down into its individual mussels can deliver cuts such as, San Antonio Steak, Round Petite Tender, Braison Cut and Western Tip Steak; while the chuck can provide cuts such as Delmonico Steak, Ranch Steak, Shoulder Petite Tender, Flat Iron Steak, Sierra Cut and Denver Cut, to name just a few. For more detailed information please see diagram below. An increasing demand for organic meat and some of the above named cuts as well as the increasing use of innovative cooking methods, is good news for organic beef farmers and should over time lead to a better return on their product.

Websites worth a visit:

#### http://www.craftbutchers.ie

http://www.beefinnovationsgroup.com



Source: http://www.beefinnovationsgroup.com/Valuecuts

# **FARMING TIPS** for April to July

#### by Mary Lynch



#### SOIL SAMPLING

All farmers who entered GLAS in 2015 will have soil samples and a nutrient management plan drawn up by their planner in 2016. Lime is one of the most important nutrients on organic farms as keeping the pH correct encourages clover growth and helps the release of other nutrients in the soil. Therefore, if your soil results come back showing you need lime it is essential that you try and invest in spreading lime.

Lime can be spread on silage ground once the silage is cut, or anytime on grazing ground once the sward is grazed out and weather and ground conditions are good. Generally, I favour the little and often approach, especially on heavier ground. Therefore, spreading at no more than 2t/acre in any one application on most soil types, and even reducing that to I-1.5t/ac. on heavier poorly drained land.

Make sure ground conditions are good, as usually the contractor has a heavy tractor and the load of lime can cause compaction problems if traffic ability of the ground is poor. Phosphorus and Potassium can be corrected with slurry or FYM, either your own or imported from organic or non-organic farms, once you remain under the 170kg of organic nitrogen (including from your own stock) per ha per year.

If importing from non-organic farms you must ensure the manure/slurry is coming from farms where the stock are outside for some period of the year (not from intensive pig and poultry units where they are kept inside all the time). Whether importing from organic or non-organic farms, you must complete the relevant Nitrates paperwork.

#### **GRASSLAND MANAGEMENT**

Swards should be assessed at the start of the growing season for clover, grass and weed content and a subsequent plan made for the year. This can include swards to be prioritised for topping, stitching in clover and reseeding.

Depending on your budget and stocking rate you will decide on a plan of action. All swards should be topped before any weeds go to seed, this helps to stop more weed seed being dispersed. Swards should also be topped if necessary after grazing to maintain the quality of the grass for the next grazing, this will depend on how well you manage to graze out the sward.

Grazing it too tight may lead to worm problems especially if you are forcing the cattle to graze into the dung pads which they would normally avoid to prevent them picking up worm eggs.

Stitching-in clover is best undertaking after the sward is cut for hay or silage. Seed rates should be 5kg/ha of white clover seed. Make sure you get a seed derogation, if using non-organic undressed seed. Reseeding can take place anytime up until late August. If you plan a new reseed to be under-sown to an arable silage crop you have until roughly late April to reseed. If conditions are good you can be cutting for silage after 10-12 weeks of growth.

#### LIVESTOCK MANAGEMENT

If possible you should use rotational grazing to reduce the risk of your stock getting worms. Ideally stock should be moved every 7-10 days during the summer months onto new paddocks.

As some processors are now insisting on longer withdrawal periods than those set out in the Organic Standards, and are not taking stock treated with some specific veterinary products, it is advisable to make contact with where you intend to sell your stock to see if they have any additional specific requirements that you need to take into consideration when managing your stock.



# Changing from Bedding Slats



Recently an amendment to the Organic Standards was issued to all producers, outlining a new interpretation of the rules on bedding of slats to create a solid area for cattle to lie on. Previously, where a shed was fully slatted, it had been permitted to bed over with straw, half of the slatted area to create a bedding lying area for cattle.

For the coming winter 2016 that will no longer be allowed. One of the main reasons for not allowing the practice any longer is a health and safety one, as slats only have a certain lifespan before they begin to deteriorate and if the slats are covered with straw, plywood or a thin layer of concrete it is no longer possible to inspect the slats and any deterioration would not be noticed.

There are two main options for farmers who previously had been bedding slatted areas, one is to replace the slatted sections with a solid concrete slab, and the second is to extend the shed to provide a solid concrete area that can be bedded. Both of these options can be grant aided by 40% under the TAMS Organic Capital Grants Scheme. Go online to:

www.agiculture.gov.ie/organic to check the Terms and Conditions and also for the next closing/opening date. (For information on applying for a grant please see p? of this magazine). The application is made online and there is no need to have an adviser, but you may need someone to produce drawings of the proposed extension, if that is the option chosen.

### **OPTION ONE** - to replace slats with solid slab over the existing tank

This option of replacing the slatted sections, with solid slabs may seem the simplest. It does not require planning permission, as there is no change to the outside of the shed and the effluent storage capacity of the tank is maintained. While researching this article I spoke to Michael Corbett of Corbett Concrete in Cahir, who has done similar replacements for some organic farmers. Michael says there is no problem replacing the slats where you are replacing Gang slats, as the slats are lifted out and the concrete slab lifted directly into its place. Slabs can be made to fit any length. However, in older houses the tanks and supports should be inspected to make sure they are suitable and in good condition. There may be problems where farmers built the tanks themselves with concrete blocks. You should get the tank and building inspected by your slab supplier before finalising any order. Michael also advised that the slats should be put in at a slight fall towards the slatted area to allow run-off from the bedded area, or there is an option of having perforation/drainage holes, 15-20mm, put in the concrete slabs to allow effluent drain away under the straw and so keep the bed drier, (Please see picture 1).



Solid concrete slab

Most farmers are using timber beams between the slatted and solid area to prevent straw going onto the slats, but there is also the option of using a concrete heel stone kerb to do the same job, (Please see picture 2).



Heel stone kerb



Overlap of roofs



Extension onto double slatted shed

The 40% grant available through the Organic Capital Investment Scheme allows for ?57.10m2 as the cost of the slabs and most quotes should come in below that figure. This would be a cost of ?1600 per bay, costing you ?960 per bay with ?640 of grant aid. Remember, as with most grants you must pay the full cost of the replacement and the 40% is claimed back afterwards. No work should be done, until you get a letter of acceptance from the Department of Agriculture, Food and Marine as any work undertaken prior to the date of the letter of approval will not be grant aided. The DAFM are very strict on this, so if you are going to get work done, you need to get your application in and wait for your approval letter.

#### **OPTION 2 - Extending on to the** slatted area with a solid bedded area

The second option is to extend onto the back, or side of the shed. This doubles the capacity of the shed and provides a solid bedded area for the cattle allowing them to come out onto the existing slatted area to feed. The issues here may be having room around the shed to expand and you may also need planning permission, depending on the size of the existing sheds in the yard. If you do not require planning permission, for grant aid purposes, you will need a letter stating exemption from planning permission from your County Council, this has to be submitted with your grant aid application. A document outlining planning exemption rules is available on the DAFM website under the TAMS section.

Recently, I visited a suckler farmer who began Organic conversion in April 2015 and completed an extension onto the back of the slatted area of his shed in November 2015.



Bedded extension to slatted shed



He had a concrete passage and wall at the back of the slatted shed and he covered over this area and allowed access onto the slatted area for feeding. The extension was 33.25m long and 4m wide, with an overlap on the roof over the existing roof, making the roofed area 5m wide, (Please see picture 4). The steel and sheeting and erection of the shed, with new double guttering (on old and new roof area) and extra pipes to remove water from the overlap cost approx. ?11,500 or ?1650 per bay without the grant. The farmer has put no sheeting on the side of the shed as he has found it performed well over the winter and the cattle were healthy inside the shed, and even though he has an autumn calving system he had no problem with disease in the shed over the winter. He put timber beams between the slatted area and the solid area and allowed access between the two at only one point in each pen, or every second pen when using double pens. This reduced the amount of straw being dragged onto the slatted area and getting into the tank.

#### EXTENSION ON EXISTING SHED AT JOHN PURCELL'S

John Purcell also completed a similar extension onto a traditional "Masstock "type slatted shed, (Please see picture 3). John completed this job in 2014. The shed had a 12' 6" slat and he extended this with a solid area of 35" behind, (Please see picture 5). This was the maximum width that could be achieved without extra supports. Having the bedded area deeper than the slatted area reduces the mucking up of the bed as cattle will be inclined to use the back of the bed more for lying and so naturally keep the bed cleaner. John left the back of the shed above the wall open as he has a straw chopper that blows in the straw into the bed and he has access behind the shed to do this. He says he would not cover it in any case as you need the ventilation in the shed and the wall ensures no drafts when the animals are lying down, (Please see picture 6). He rose the height of the roof extension to be able to allow the straw build up under the cattle, without causing problems cleaning out the shed, (Please see picture 7). The shed is cleaned out twice during the in-wintering period. The pens are divided by double gates, that can be swung back to the wall and the slatted pen for ease of cleaning it out. The cattle can be locked into the slatted pen for the short period while the shed is being bedded or cleaned out. He also used timber beams between the slatted and bedded area and reduced the access area to the slatted area, this in



turn reduces the amount of straw that ends up in the slatted tank. John has had no problems agitating or getting the slurry out of the tank. He estimated that the 6 bay extension on both sides cost around ?19,000 for the shed, not including the concrete work. Water troughs should be kept on the slatted area. An option for farmers with a single slatted unit with a concrete apron out the front, would be to reverse the shed, roof the concrete apron and take out the back wall and put a feed rail in instead. This may only be possible where the existing back wall of the slatted area is not mass concrete and where there is enough space for tractor access to feed the cattle.

If the layout of the side does not allow an extension behind the slatted area, it is also possible to extend onto the side of the shed to provide a bedded area, but it is move difficult to divide the cattle into groups with that layout.

If any farmer has experience of different adaptations of slatted sheds to make them compliant with the Organic Standards, I would be interested in hearing from them and maybe we could feature them in the next issue of Organic Matters.



It is a busy time on all farms at present so I will focus on some of the most important issues for most farmers at this time of the year.

#### **NEONATAL CALVES**

Calf mortality is a big issue, but in addition to keeping calves alive it is important to have a reasonable ADG (Average daily gain). Diseases such as scour and pneumonia reduce this considerably so prevention is better than treatment even when we manage to keep the calf alive.

Calves are not born with any protection or immunity against disease so it is important to reduce exposure to bacteria and viruses from the moment calving begins. Hygiene around calving is very important and long arm gloves should be used when assistance is given to heifers or cows. Iodine on the navel reduces infection through here, and the calving pen should be as clean as possible with some fresh straw.

If you do nothing else, do the colostrum right – it is absolutely essential in protecting against disease as it contains immunoglobulins active against the diseases in the surrounding natural environment. Colostrum can be stored at 4 degrees (fridge temperature) but make sure the container is clean, if left in a dirty bucket at a higher temperature it will grow bacteria and could do more harm than good.

The benefit of colostrum is best for the first 12 hours of life and absorption reduces for the next 12 hours. Most farms now have a stomach tube for administering colostrum, again keep it as clean as possible.



Neonatal lambs.

#### LAMBS

The same general principles apply for lambing, however with multiple births ewes need to be checked for more lambs, and there may be issues with regard to providing adequate nutrition. Vigilance around calving will help avoid fatalities.

#### **USE OF ELECTROLYTES**

When calves or lambs are scouring, dehydration sets in quite quickly and if the skin is pinched and does not immediately return to normal it indicates the need for fluids. As a vet I would normally recommend oral hydration to begin with. Electrolytes are a balanced mix of salts that aim to replenish those that have been lost from the body. It is very important to use the exact amount of water for making them up, so they can in turn be properly absorbed.

As a rule, it is better to use proprietary brands but in an emergency you can use the human versions e.g dioralyte or even google the recipe for the salt and bread soda mix if there are no pre-prepared ones available.

Stomach tubing is also often used for electrolytes as they are not terribly palatable. Electrolytes do not contain any medicines or drugs so do not have withdrawal periods. Paraic Mac Namara is a farmer, vet, and Organic Inspector. He shares some seasonal advice.

#### **USE OF ANTIBIOTICS**

The first important question we need to ask is, is an antibiotic needed? Some scours for example are nutritional and are best controlled by dietary management and electrolytes and probiotics.

Many cases of respiratory infection (in man and animals) are actually viral, and viruses are not killed by antibiotics, instead supportive treatment is needed until the body activates its own immune response. If an antibiotic is necessary then use it and keep in mind the following:

- Use the recommended daily dose.
- Finish the course to reduce resistance to the drug.
- Ensure it is the appropriate remedy
- Check the withdrawal period and adjust for organic farming.
- Make the required entries in your record book.

Some of this information has been covered previously in Organic Matters, but we are aware of the many new entrants and their requests for guidance in these areas.



LAMENESS

After a wet winter and poor ground conditions lameness can be an issue in both sheep and cattle so pay attention to feet, and use footbaths and hoof trimming where appropriate.

# AIRFIELD FOOD GARDEN

119

At first glance Airfield Estate in Dublin may appear to be a sleek and modern visitor attraction but peer a bit longer and you will find an authentic 38-acre working farm and gardens steeped in heritage and natural beauty. Located in the south side suburb of Dundrum, a suburb more synonymous with shopping centres than urban farms, this recently revamped estate can easily be accessed by public transport and the M50.

Airfields most recent history can be accredited to two exceptionally spirited and practical women, Naomi and Letitia Overend, who in 1974 bequeathed Airfield to the people of Ireland, establishing it as a



#### by Kitty Scully

charitable organisation for educational and recreational purposes. Today this busy farm, gardens, café and heritage experience offers visitors of all ages an opportunity to enjoy and learn about plants, food, farming and nature in a natural and relaxed environment. The main focus of this selffunded land based charitable organisation is to inspire people to refresh their connection with food and the land it comes from. And never has a refresher course been so critical in Ireland it appears! Education is to the fore here at Airfield, but in a fun and accessible way, and the Overend sister's legacy and penchant for farming, gardening, vintage cars and Jersey cows well and truly lives on.

#### **A NEW PHASE BEGINS**

My personal awareness of the Overend sisters and Airfield Estate was non-existent until the year I completed my MSc Organic Horticulture, 2013. It was announced at an OGI conference that a Food Grower was required to manage a newly developed vegetable and fruit production area on site. I learned that the aim of Airfields newly designed I.8acre contemporary food garden was to provide a pretty and productive demonstration plot for recreational and educational purposes as well as supplying a steady stream of produce to the restaurant on site.



The job description married a lot of my interests and sounded suitably challenging so now after more than two years working in the beautiful surrounds of Airfield, the food garden is up and growing and has just recently gone into organic conversion.

The layout of Airfields new food garden was the brainchild of Italian born garden designer Arabella Lennox Boyd and when I commenced my role in summer 2013, the gardens were still in construction phase. I must confess that I was rather intimidated by the task to hand. Not only were the large irregular shaped beds daunting but so too was the vastness of the exposed site, not to mention the amount of builder's rubble adorning the many oversized garden beds. Arabella's vision was far removed from the 1m bed system that I had adopted during my commercial organic horticulture days. Without the expertise and practical assistance of Airfield garden consultant and IOFGA certified farmer, Daphne Shackleton, the target for bringing the design to life and converting the building site into a public garden to be



opened in April 2014 would not have been achievable. Joy Larkcom's Creative Vegetable Gardening also proved to be a great aid to a design-challenged, straight lined focused, organic grower like myself!

#### FROM THE SOIL UP

Formerly a farm field which occasionally served as an overflow car park, the area where the food garden is located had been subject to substantial compaction in its former existence The three year closure, and redevelopment also proved hard on the land and Airfields historically good topsoil had been degraded by both compaction and builders debris.

Based on organic principles and my own firm belief in the interconnection between healthy soil, healthy plants and healthy people and to quote organic pioneer Lady Eve Balfour, "the health of the soil, plant and man are one and indivisible", soil health became an obsession in the early days. Working the sod, clearing stones and sourcing soil amendments was hard work but I knew once the soil was right, achieving prettiness and productivity would be easier yet not effortless! The wind coming off Three Rock Mountain proved to be menacing before any crops were even





planted and to this day it is one the gardens most limiting factors. Tonnes of municipal compost, FYM and horticultural grit was imported on site to help loosen the soil and add nutrients. For the months prior to opening, areas were either mulched or sown with overwintering green manures.

With four polytunnels on site (not open to the public), three for production and one for propagation, the first crops supplied to Overends restaurant in late autumn 2013 were a wide range of winter salads and herbs.

#### INFORMATIVE AND EDIBLE

Arabella's contemporary design features several permanent-planting areas and these were the first areas of the new food garden to be installed. A *Corylus* copse and bronze-and-green hedge run along the north boundary and a native hedge along the south field boundary which includes sloes (*Prunus spinosa*), spindle (*Euonymus europaeus*) and dog rose (*Rosa canina*). Once these hedges mature the garden should benefit from increased shelter.

As you enter Airfields food garden, a vineyard of hardy grapes, both black and white cultivars, dominates the space. Grapes growing in the 'north patch' are especially good as dessert grapes, and those in the 'south patch' are especially good for wine. This was rather an ambitious design feature considering the garden is in South Dublin, not the South of France. So let's just say Airfield will not be releasing any first press cabernet sauvignon in the foreseeable future, but we will enjoy the autumn foliage vines provide and help to educate people on viticulture. One of the main permanent planting features in the garden is a challenging maze comprised of espalier-trained Irish heritage apples. This maze is a challenge to both children and gardeners alike!

#### **THEMED BEDS**

At the heart of Airfields food garden is a grid of beds and paths that provide a host of exciting possibilities for planting and perusal. Most beds carry a theme, for example, the 'Heritage beds' are used to grow heirloom open pollinated cutlivars and all seeds are sourced from Irish Seed Savers Association and Brown Envelope Seeds

'Experimental beds' are used to combine food producing plants and flowers in an ornamental planting style highlighting the aesthetic value of many food plants. Eight large rectangular beds sited between a newly planted Damson walkway are dedicated to growing cut flowers with the aim of keeping the restaurant and house in supply all year round.

The bulk of crops for restaurant supply are grown in raised planting beds, clad in woven willow known as the 'Rotational beds'. At the bottom of the food garden an impressive west facing Kitchen building marks the space and it is outside this modern building that the herb beds and salad gardens reside. Adjacent walls are used to train a range of top and soft fruit with all other soft fruit growing under the protection of a bespoke Douglas Fir fruit cage.

An interesting Arabella addition to the garden, which also ties in with our agricultural theme, is the large series of waves called the Grain Waves, comprising of oats, wheat and barley, demonstrating the attractive contrast in textures, colors and life cycles between grains.

In short, in Irish terms, Airfield's new food garden is an incredible resource for showcasing the range of edible crops that can be produced organically in this country. With over 120k visitors to the Estate last year and 160k visitors to Overends 'farm to fork' Restaurant, the potential to outreach and educate children and adults both formally and experientially to organic crop production is huge.

Like all great garden projects, Airfields' food garden is not without its challenges and in the next issue, I will delve deeper into some of the problems and solutions encountered seasonally in the quest to maintain an organic food garden that is both pretty and productive and open to the public all year round.

Kitty Scully is Head Kitchen Gardener at Airfield Estate, Dundrum, Dublin 14 • www.airfield.ie

### Ruminants favour herbs - SOME FARMERS LIKE TO HAVE THEM

#### BY METTE VAARST & ANNE BRAAD KUDAHL

#### Organic agriculture calls for a unique view on animal health and welfare

Organic dairy farming is not just producing milk with a certain label - it is also producing food with an idea, based on some underlying principles. The IFOAM principles of ecology, health, fairness and care call for a view on animals that makes organic animal farming unique. Health is an underlying principle for the whole farm, from soil to plants, animals, humans and the wider ecosystem. And health is so much more than just 'freedom of diseases'. Actually, health can be thought of as 'resilience': the living animal's ability to withstand and absorb shocks and changes in its surroundings. This leaves the humans with a responsibility to take care of the animal among others by creating an environment which can support the animal and minimise shocks and disturbances. For example, we can give the animals good indoor environments where animals can move around peacefully, and give them opportunities to meet the natural needs as much as possible, and timely, appropriate intervention when needed.

'Natural needs' can be met in multiple ways and combinations of actions and

management routines. Sometimes routines have 'documented effects' and are proven as preventive to certain diseases. In other cases – and especially when it is about 'promoting health in general' - it is difficult to actually measure the good effects of a certain action. Often more things and factors play together. It is challenging to prove the good effect of something which is claimed to promote health and welfare when the animals already are 'healthy as far as we can see'.

#### Herbs in pastures for animal health promotion

Adding herbs to pastures belongs to this category of 'actions': a number of farmers find that their animals are healthy and quite resistant, the somatic cell count is relatively low and the animals hardly ever get diseased and in need of treatment, and they eat herbs in the pasture. But do the herbs actually have an effect? A Danish research team at Aarhus University, and the Danish dairy company Thise participated in an EU project about organic and low-input dairying (SOLID; www.solidairy.org), and part of the research was to investigate farmer innovations for good animal health and welfare.



Growing herbs in pastures was one of the selected actions. Some farmers had participated in previous research and trials about herbs, e.g. whether herbs could change milk content of for example fatty acids. This had started their interest in growing herbs. They wanted to continue with the herbs after the trials, because they could see that the cows really liked it, and they believed that it had some good effects.

We wanted to learn from some of these farmers about growing herbs in practice in their pastures, and were particularly interested in the potential health benefits. We interviewed eight farmers, and did plant coverage analyses on seven of the farms.

#### Happy cows - happy farmers

All farmers reported that their cows were happy to eat both fresh herbs when grazing (except the old tough stems of chicory) and silage made from herb-grass fields. Only the silage including sticky chicory and soil was disliked by the cows. Some farmers had the impression that especially in the springtime the cows preferred herbs and leaves from bushes and trees in hedgerows before grass.

The farmer who established bands of herbs on the pasture described how the animals could stand in rows grazing primarily these stripes of herbs. This supported a major argument for using herbs to promote animal welfare: they really liked it.

Several farmers were convinced that the herbs contributed to the mineral supply of the cows, and that especially herbs with deep root systems like chicory could draw up minerals from deeper soil-layers. They emphasised this as a reason. A third reason given by farmers was the expectations of medical effects of using herbs e.g. against parasites and against ruminant bloat/ tympanitis. It was impossible to measure, among others because there had not been a 'beforeusing-herb-situation' for up to 18 years. All farmers generally perceived their cows to be healthy, and the potential good effect on animal health was a major argument for continuing sowing herbs in the grass fields.

### Experiences with sowing and managing herbs

Half of the interviewed farmers had had herbs in their pastures for 15-18 years. Several farmers experimented with keeping their herb/grass pastures for more years before ploughing. The oldest pasture was 6 years old.

Most of them either bought seed mixtures including herbs or mixed herb seeds with grass and clover seeds before sowing. Almost all interviewed farmers used herbs in all of their grass-fields, for grazing and for silage production. Only one farmer was sowing the herbs in 30 cm broad stripes for every 4th meter. He had observed that it improved the survival chances of the herbs and decreased the competitive pressure from grasses and clover. To improve competitiveness and survival of the herbs, some of the interviewed farmers had increased the amount of herb seeds per ha. Most farmers considered following the experiments of the farmers sowing herbs in stripes, and some planned regular stripes all over the field, while other farmers planned broad stripes at the edge of the field.

Silage production worked better than hay Silage production seems to work well in grass fields with herbs. Two farmers had tried to grow pure herb fields as a part of a trial, and especially one of them did not work: the leaves from chicory fell to the bare soil when cut, and when they dry they get sticky and difficult to pick up without soil, with a very poor silage quality as result. In the other pure-herb field, a cover of low grasses (poa annua) had established from the seed bank in the soil. Here, the herbs fell on the grass and were easily picked up for silage making. The herb fields were



normally never used for hay production because the dry leaves crumble away if they are handled more than once. Only one farmer had made hay one time on a field dominated by lucerne and in a period with stable sun and warm weather:

### Some herbs are good survivors - others not!

Farmers had experiences with some herbs surviving better than others. One herb which has been used continuously was Chicory (Cichorium intybus). This herb normally establishes quite well in the field, the cows like it, it is believed to have a medical effect on parasites and on ruminant bloat and to have a high mineral content. Other good survivors (both shortterm and longterm) were caraway, lucerne, red clover and ribwort plantain, which are relatively large plants with deep roots. They have a high competitiveness the year the pasture is established, and they are also the best survivors on a long term basis. Herbs like Lucerne and ribwort plantain seem better suited for cutting than for grazing and chicory and caraway seem to be the only plants able to survive grazing over several years.

However, in general, farmers told that all sown herbs had difficulties surviving the winters, their occurrence were markedly reduced every year and barely existing after 3-4 years. Farmers also experienced that some herbs coped better with drought than grass. Some herbs were desired because they should have good effects, e.g. medicinal effects, like dill and parsley, have been tried but given up again. Dill had a poor re-growth after harvest or grazing and parsley germinated very slowly, lost competition with other herbs, and never really established in the field.

#### Plant coverage analysis

The plant coverage analyses investigated the botanical composition of herbs, grasses and legumes in relevant fields by describing how much % of the ground each species covered in a square of 0.5 m2. Such a square was analysed in each of at least two randomly chosen sites per hectare of the field.

Plant coverage analyses were done at seven farms, two of which had participated in previous projects having one 100% herb field each. Grasses and white clover were dominating all over in different balances, and only ribwort plantain, chicory and especially caraway survived several years in the grass fields although more and more scarce as time went on. While the sown herbs diminished from year to year the wild herbs became more and more abundant – on pastures especially dandelion, different thistles and curly dock.

On the fields used for silage production the grown herbs covered a much higher percentage and seemed to survive better. Especially in one field, lucerne was very dominating. Only chicory and caraway were found in 5-6 year old pastures and only with a few specimens on each field. These findings were very well in accordance with statements from the farmers, as well as with confirmed findings in previous Danish studies.

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### AN UPDATE ON THE REVISION OF ORGANIC REGULATIONS

As many of you may know, the European Commission proposed a revision of the organic regulation in March of 2013. The purpose of which is to allow the organic farming sector to grow and meet the demands of consumers.

From 1999 - 2011 the global market for organic food expanded fourfold, however, during the same period the area under organic production in the EU only doubled. One of the reasons for the slow growth is because the regulatory framework has become too complex and difficult to understand for operators, producers, consumers and public authorities. In short, there is too much red tape which may harm the growth of the sector in the long term.

Since the revised proposal was launched, it has come before the European Parliament's Agriculture and Rural Development Committee. Although I am no longer a member of the committee I have followed this file very closely and submitted over 60 amendments (62 to be exact) to the Commission's proposal, with the aim of improving and simplifying the text.

As of now, the Parliament and the European Council, under the Dutch Presidency, have both come forward with their positions and are now in negotiations to try and finalise an agreed text, which is hoped to be completed by the end of June.

So far, the negotiations are slow and have only touched upon some elements of the proposal. This is mainly due to the technical nature of this file but it is partly due to the Commission insisting on some issues. Thankfully, the Parliament and the Council's position seem to be much closer which is essential for a good outcome.

#### MAIN ISSUES OF CONCERN

One of the more contentious issues between the three institutions has been in the area of thresholds for organic products. The Commission wants to introduce a common threshold of 0.01



#### BY MEP MARIAN HARKIN

milligrams per kilo for non-authorised substances in organic products. If the threshold is breached products would not be able to be sold as organic and in effect damage the sector.

I strongly rejected this proposal on the simple grounds that nonauthorised substances can enter into organic products accidentally via non-organic farms. I was fortunate to receive the support from the majority of the political groups in the Parliament on this issue.

The Council have also rejected this proposal and, like the Parliament, have called for an approach based on the precautionary principle, whereby, if an organic product is thought to be contaminated, it would be removed from the market by operators until the competent authority deems the product compliant. This is a reasonable and balanced outcome, which on the one hand, will ensure the integrity of organic products while on the other not penalise producers for contamination which came through no fault of their own and deter them from further investment in organic farming.

Unfortunately the Commission are not in favour of the Parliament and Council's position but the only option they have is to remove the entire legislative file from the table, which is unlikely considering the amount of time and energy invested.

However, the main sticking point in the negotiations so far has been the issue of controls for organic production and marketing. The Commission is adamant that the regulation of controls should be dealt with in the official controls regulation on food and feed still to be adopted along with this proposal for a regulation. This is in principle a reasonable undertaking. However, some specificities of the organic production need to be taken into account and dealt with. The quality of organic production is not only a matter to be controlled at the level of the final product. It is the entire process of production, including positive impact on the environment, animal welfare, soil fertility, climate mitigation and the sustainable use of biodiversity which need to be taken into account. That is why control regulations for organic production should be kept within the organic regulation. The Parliament and Council agree on this position.

Further negotiations need to take place on this topic but from my discussions with the Parliament team this is a 'red line' issue and one which they will fight for:

In order to uphold high standards in the organic sector, all organic producers will be subject to an annual on-site inspection. However, this may be extended for producers who are not considered 'risky' in the supply chain but this detail needs to be worked out between the Parliament and the Council.

The issue of mixed farming has also been somewhat controversial, with the Commission proposing a ban over a period of time. However, this proposal was rejected by both the Parliament and the Council as there were fears that it would lead to a move away from organic production to more intensive methods. A balance needs to be struck in the negotiations so as to offer organic producers a stable income while at the same time protecting the organic brand. Therefore, I have urged the Parliament's negotiating team to work towards finding a compromise which will clearly define how organic farming and conventional farming can be practiced simultaneously without compromising the organic brand.

#### SUCCESS SO FAR

Like all legislation there are compromises to be made, however, I have been fortunate to succeed in getting flexibility regarding the sourcing of feed for organic farms. Originally, the Commission proposed a narrow interpretation of where feed could be sourced, even for island countries.

Thankfully, my colleagues in the Parliament have agreed with me that stretches of water, such as the Irish Sea, need not apply when calculating where feed can be sourced. Likewise, organic farms situated in the outer most regions, will not be restricted by the I 50km criteria. So far this issue has not been dealt with in the negotiations but I will be following it very closely so that a practical outcome is achieved.

> For further information please contact me at: marian.harkin@europarl.europa.eu Tel: +3222838797



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### Kiernan Milling ad

# The cows about their

Obsalim® is an observation technique that allows you through the knowledge of a number of signs and symptoms on and around ruminants (cows, sheep and goats) to assess accurately how the rumen is responding to the ration.

Bruno Giboudeau, a French vet, spent 15 years discovering how this is possible. It started when he noticed that when cows are given too highly fermentable food they lick an area high up behind their shoulders.(picture) He noticed that when the excess of energy was taken out of the ration they stopped licking and, of course, started licking again when an excess energy was reintroduced. He then noticed that other signs could be linked in a similar way to the digestion but each in their own particular way.

For instance the third eyelids become apparent in the corner of the eyes when there is not enough protein available to the umen flora, (picture) or the hairs on the spine above the shoulders stand up when there is insufficient energy in the ration. Every time Bruno concentrated on a new symptom, through trial and error he learned how this symptom related to energy, protein, fine fibres and structural fibres in the ration.

Years of painstaking work have resulted in 62 symptoms (more when you use the software) that can be seen on either, cows, sheep or goats and for which the degrees of correlation to energy, protein and fibres in the ration have been determined.

The second part of Bruno's work is having developed a way of using this symptom information to 'diagnose' the ration. To do this the herd needs to be observed looking out for the Obsalim® signs. Once three or more signs can been seen on a good umber of animals and these signs are of at least three difference anatomical areas (such as skin, hair, eyes, nose, behaviour, food intake, feet, etc) it is possible to make a diagnosis using these symptoms by adding up their values for the 7 Obsalim criterions. (picture) The 7 criterions are: fermentable energy (energy available to the rumen flora), global energy (energy available to the animal), fermentable proteins (protein available to the rumen flora), global protein (protein available to the animal), fine fibre (roughage the rumen flora will turn into nutrition for the animal), structural fibres (fibres that promote good rumination) and last but not least, rumen stability.

The rumen stability is a reflection of the variation of the rumen PH. Optimal rumen function will go hand in hand with a stable PH . Changes in the PH will cause destruction of the rumen flora which results in reduced efficiency of the rumen function and hence inefficient digestion of the ration. These PH changes are usually caused by too variable food ingestion.

Some of these criterions will sound familiar to those who are well versed in modern ration calculation. Obsalim® has been developed on the backdrop of current knowledge about nutrition in ruminants. What is specific about Obsalim® is that this was done by listening to the animals, and to the animals only. In a way Bruno discovered a 'hidden' language: the language of the rumen which can be 'read' by observing a number of signs on and around the animals. Learning to use Obsalim® is very much like learning a new language: initially it needs a bit of getting used to but once one gets it, it is very easy to do.

Of course the symptoms are real, anybody can see them and you can see how they come and go with the changing of the ration and feeding rhythms; this is the guarantee that the system is based on facts and not on something thought out in a lab. It has been trialled and tested in the reality of the farm and not in the confines of a controlled environment.

When a herd is not under pressure and has free access to good pasture with a healthy mix of grasses and plants, grown on a soil without toxins or bad deficiencies in minerals, the animals will choose which plant or grass to eat at the right time and ruminate long enough at the right time which results in a perfectly regular and balanced rumen function. The grasses will be perfectly digested and nothing will be wasted (perfect food conversion). All the pats will be regular and of good consistency. The animals will act as a perfect group in a perfect daily rhythm. If you were to observe such a herd there will be no Obsalim® signs and everybody will look

# tell us nutrition

shiny and healthy with a normal good body score.

Because of the constraints of the farm , there are pressures on the natural regulation of the eating/ruminating rhythm of the herd. Also, often the ration that is proposed is not exactly what it says on the tin. Whether the food is bought in or its energy and protein values have been estimated based on a reference table or even a sample (which is likely not as representative as one would like it to be) one can never be sure of its exact values. The best way is to ask the animals how we (and they) are doing. That is exactly what Obsalim® does.

Once you get used to Obsalim® you can find out where the biggest stress is in the ration: too much or not enough energy, too much or not enough protein, not enough structural fibre. Often it is the feeding rhythm that needs improving: in this case the result of the Obsalim® observation tell us there is much rumen instability. We then have to look for ways to make sure all the animals can feed together followed by a period of ruminating together without being interrupted in an overall twice daily cycle. Any deviation from this will cause irregularities in rumen function and loss of efficacy of the rumen.

When Obsalim® tells you there is a problem there will be either wastage of food (often much more than one may think) or an insufficiency in the ration. In either situation, your animals are underperforming and you are losing money. Disease, poor production or poor fertility are to be expected.

Of course Obsalim® measures against perfection. Farming often imposes restrictions in comparison to the idyllic perfect life in the perfect field. It is therefore imperative to know how the rumen is doing and have pointers to know how one can improve things. Whatever the type of the ration you offer to your animals, the Obsalim® technique will always allow you to know exactly how the animals and their rumen respond to what is on offer.

Your Obsalim® observation will often make sense in relation to what you already were thinking but often the findings will prove to be surprising.

#### http://www.obsalim.com/en/index.htm



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# ORGANIC CAPITAL INVESTMENT SCHEME (OCIS)

The Organic Capital Investment Scheme (OCIS) is part of the Targeted Agricultural Modernisation Schemes II (TAMS II) group of schemes. The Scheme came into operation on 7th August 2015 and will be closed for receipt of applications on 31st December 2020.\*

#### **OBJECTIVES OF THE SCHEME**

The objective of the Scheme is to facilitate the development of the organic sector so as to ensure a regular supply of high quality organic produce to the market.

### Financial assistance will be directed towards projects which:

- Improve the organic sector and provide the producers of the basic product with an opportunity of enhancing income.
- Help to guide production in line with foreseeable market trends or encourage the development of new outlets for agricultural products.
- Help to improve production, handling and preparation of organ ic produce
- Facilitate the adoption and application of new technologies.
- Help to ensure the adoption of "best practice" within the organic production/processing sector.
- Develop facilities for preparation, grading, packing, storage, distribution, or the sale of organic products as part of a wider organic operation.

It also aims to provide an incentive to organic young farmers to upgrade their agricultural buildings and equipment by providing



them with an increased level of support to meet the considerable capital costs associated with the establishment of their enterprises.

#### FUNDING

The Scheme is jointly funded by the European Union and the national exchequer. The funding for the Scheme is limited and all applications are subject to the operation of selection criteria. The financial allocation to the Scheme shall not exceed ?8m subject to review by the Minister.

Grant aid for licensed organic operators will only be paid on approved, complete and eligible expenditure and shall be paid at the rate of 40% up to the maximum investment ceiling of ?80,000 per holding.

Grant Aid for qualifying young farmers will only be paid on approved, completed and eligible expenditure and shall be paid at the rate of 60% up to the applicable maximum investment ceiling of ?80,000 **per holding**.

The minimum amount of investment which is eligible for approval under this Scheme is ?2,000.00 per applicant. A full list of all available investments is available on the Department's website at http://www.agriculture.gov.ie/farmingsectors/organicfarming

#### **HOW TO APPLY**

Clients are not required to employ an approved agent. Clients can apply directly themselves or can employ an approved advisor to act on their behalf if they so choose.

Applications must be submitted online through agfood.ie.

Applicants who wish to apply online or through their agents must first be registered for online services (OLS) with the Department. Instructions for registration can be found online at www.agfood.ie <u>or</u> you can contact agfood online services helpline in the Department's Portlaoise office: Locall 1890 25 21 18 or 0761 064424 or email agfood@agriculture.gov.ie

Applicants will not be able to amend applications following submission online. For this reason applicants are advised to ensure that the application is completed fully and accurately prior to submission. Applications must include all required supporting documentation.

#### WHEN THE APPLICATIONS ARE RECEIVED IN THE DEPARTMENT

Applications for aid will be assessed in accordance with the following criteria in order of priority:

- Age of applicant (priority will be given to younger farmers).
- Payment under TAMS | Dairy Equipment Scheme, Sheep Fencing and mobile equipment & Farm Safety Scheme and previous Organic Schemes of Grant Aid.
- The proposed cost of the project by the applicant as set out in the Costings Section of the application. For this purpose applicants will be given preference where the proposed costs are lower than the Department's Reference Costs.
- Size of holding.
- Any part of a holding in an Area of Natural Constraint.

Copies of the most up-to-date marking sheet used by the Department for this purpose are available on request from"

#### Organic Unit,

#### Department of Agriculture, Food and the Marine, Johnstown Castle Estate, Co Wexford

and are also available on the Department's website at: http://www.agriculture.gov.ie/farmingsectors/organicfarming

Where a valid application does not receive approval in the course of the first assessment or tranche which is carried out by the Minister after the receipt of the valid application, the application



will be carried forward to any subsequent assessment(s) or tranche, unless withdrawn by the applicant.

#### PAYMENT

Grant aid per investment item will be calculated on the basis of the lowest of the following amounts:

- The Department's Reference Costings applicable at the date of approval.
- (ii) The total of the invoices marked "paid", net of VAT, together with costs of own contribution in terms of labour and machinery, deemed to be eligible by the Department, and
- (iii) The cost of the investment proposed by the applicant indicated on their application form.

Grant aid will not be paid in respect of new equipment or investments unless full ownership thereof has been transferred to the applicant prior to the lodgment of the payment claim. Full ownership is defined as when the applicant has fully paid for the investment. All works must be completed and a valid claim for payment received by the Department within three years of the date of issue of approval or by a date specified in the letter of approval, whichever is earlier.

In accordance with EU regulations, all EU scheme payments to farmers can only be made to a bank or building society or credit union accounts held with the State. A copy of the relevant form is available from Direct Credit Section, Department of Agriculture, Food and the Marine, Farnham Street, Cavan or on the Department's website.

Full details are available on the OCIS Terms & Conditions which are available on the Departments website at: http://www.agriculture.gov.ie/farmingsectors/organicfarming

\*Please note that the scheme is closed at the moment but is due to open in a couple of weeks.



In organic tillage we have very few ways of correcting mistakes, or making up for poor weather or even counteracting poor growth, late spring etc., so what we do have control of we must do well.

Crop establishment is very important for this reason as a good start in the right seedbed will give your crop a much better chance when facing problems later on in the growing season. In some cases it would be better not to drill than to sow the crop badly as there will be no financial return or very little, and poorly worked soil could lead to loss of nutrients which are difficult and expensive to replace.

The vast majority of organic crops in Ireland are sown using the same plough followed by power harrow one pass drill the same as conventional crops. In the UK on the continent and the Americas they are using other methods a lot more like min till and no till but we will come back to that.

#### PLOUGHING

To start with we will concentrate on the plough method. The first thing to make sure of is that your plough is set up properly as a badly set plough can leave a lot of problems behind it. It must be running level behind the tractor with sods at the same depth you may need to spend some time at the start of the season getting in and out of the tractor to get this right but its time well spent. Don't forget to make sure the back wheels of the tractor have the same tyre pressure and the link arms are the same length. Also make sure the front furrow is taking the same width as the rest. If you are using a contractor you need to make sure his plough is set properly and is doing a good job. When you do get started ploughing make sure your forward speed is about 7kph as a maximum, above this speed trash burial can be compromised and soil structure can be adversely affected neither of which is desirable.

After the plough, a run of a furrow press or a roller if you don't have a furrow press, will help to consolidate the soil again which will help with root development when the crop is sown. This should only be done if the soil conditions are right as compacted soil will have the opposite effect on root development. Again and for the same reason keep the forward speed down or you can cause soil structure problems in the wheel tracks. In autumn the plough is usually followed directly by the one pass, although in some years it is possible to plough some ground ahead of time. In the spring you should be aiming to plough about 6 weeks before you plan to sow, this is the ideal situation.

#### LETTING NATURE HELP YOU

Ploughing ahead of time gives the soil time to settle down again, and all the soil life to get their house back in order after being turned upside down before you need them to work with the plant. Ploughing ahead of time also gives nature time work to the soil for you and help to create a tilt (another reason to use the furrow press/roller is to keep this tilt on the surface). There are a number of advantages to this, less diesel and time will be required to make a seedbed, also you will reduce wear and tear on your machinery but the not so obvious benefit for organic farmers in particular, but really for all farmers is the reduction in nutrient loss. Every time you move the soil you are losing nutrients, but if you don't move it enough to create an acceptable seedbed your crop will not thrive so you should use nature to assist with this as much as possible.

#### SEED GERMINATION

If you plough ahead of time it should also be possible to use a stale seedbed to help cut the weed pressure and also cut the weed seed numbers in the soil (a stale seedbed is when you create a seedbed about 2 weeks before you plant your crop, and then till the weed seedlings that germinate back in just before you plant the crop). When the time comes to plant your crop whatever machine you use to create a seedbed try not to overwork the soil. The aim is to have the seedbed as even and uniform as possible so germination is even and uniform. A run of a ring roller after sowing is also very helpful to consolidate the seedbed and get good soil seed contact as long as soil conditions allow, sometime in the autumn the soil never really dries enough after sowing to allow for rolling. It is also important to be aware that rolling can cause severe soil structural damage and adversely affect crop germination and growth. The seedbed will naturally consolidate over winter but birds and other pests may be more of an issue when seedbed is not rolled, this is still a much better situation than causing soil structural problems.

#### COMPACTION

Compaction is also a problem that cannot be ignored. The increase in machinery size has been necessary but the effect this has on Irish soil needs to be monitored and addressed. I have a neighbour who will only allow the combine down the field and chops all the straw to avoid compaction and this strategy is giving good results for his particular farm. If you think you have a compaction issue you should dig a few trial holes to check (or get your advisor to do it). Any problems identified should be dealt with as compaction will adversely affect root development. This is usually carried out in the autumn. Now min-till and no-till are two methods that have obvious advantages in organic farming. The minimal movement of soil will lead to less nutrient loss for a start as mentioned earlier. This will also mean the soil life the bacteria fungi etc. are not being disturbed so much and therefore will work better with you. It is hard to move away from literally getting to turn over a clean slate each year as the plough can bury all sorts of problems. It is hard to know how these systems will work in an Irish setting, but I think they are well worth further investigation and trialling. I will return to this in a future article in Organic Matters.



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July 13th	Patrick Frankel CORK	Organic vegetable and orchard production
August 3rd	Garreth Whitmore DONEGAL	Field scale vegetable production, and mixed enterprises
September 7th	Brian O' Regan CORK	Cereal production and mixed enterprises
October 5th	John McHugh LAOIS	Dairy herd nutrition and health, soil management

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