

Issue 4 - Winter 2005

# menterra



## The Gwynedd Agri-Innovation Initiative Newsletter

### Welcome and Introduction

*As the Senior Portfolio Leader for Development in Gwynedd Council, it is my pleasure to welcome you to the fourth issue of the MENTERRA newsletter.*



project attempts to achieve its aim of creating a culture of agri innovation amongst the County's farmers.

In the new year, MENTERRA faces a challenge as it takes its first steps with the mushroom triallers. The team are also continuing to assess the value of Sea Vegetables. Exciting times indeed, and I will follow the developments with interest.

In the first newsletter, published during the Summer of 2004, it was noted that a thriving agriculture industry is essential to sustain a strong economy and community in our rural

Since the project commenced in November 2003, a variety of crops have been – and are being – trialled in Gwynedd; such as Linseed, Naked Oats, Camelina and Soft Fruits.

**Councillor Dafydd Iwan**  
*Senior Portfolio Leader – Development  
Gwynedd Council*

During this time, the team have been working in partnership with a number of Gwynedd's farmers as the



The MENTERRA exhibition at the National Eisteddfod of Wales, Eryri and District 2005



*It has been a particularly busy time for the project since the publication of the third issue. The Soft Fruit trial is developing well on ten farms across Gwynedd and an update is given in this issue by two of the triallers.*

Unfortunately, the Organic Naked Oats crop being trialled at Bwlch Gwyn farm, Arthog was destroyed by the storms at the end of August. However the University had a good quality sample; and with the aid of BIC Innovation it was arranged for it to be roasted by the Lincoln & York Ltd company . The first results received were positive and suggests that the crop has potential.

In order for as many Gwynedd farmers as possible that have declared an interest to receive an opportunity to trial mushrooms, two meetings were arranged - one at the Agri –Innovation Centre at Henfaes and the other at the Oakley Arms, Maentwrog – by the Agri-Innovation Officers. In these meetings we had the pleasure of the company of Mr. Richard Edwards and Mr. Mark Wassell, Humungus Fungus (Llangadog). They gave presentations and the farmers were given the opportunity to question them. The next step in the process will be to arrange an informative tour of the Mushroom Factory in Llangadog before the project selects the triallers in mid December.

We are continuing to assess the value of Sea Vegetables and now hopefully we will be in a position to commence a trial soon in January 2006.

We had a successful week at the Royal Welsh and two busy days at the Anglesey Show. For the second year in succession Meirionnydd Show was very unlucky with the inclement weather when a number of stalls were destroyed by storms which struck Harlech –and the rest



**Aronia, Nasareth**

of Gwynedd - on August 23rd. We certainly hope the organisers will have more luck next year. Despite the mud our exhibition of alternative crops at the Eryri National Eisteddfod in the Faenol was also extremely popular with eisteddfod goers.

With regard to the University Team, Dr. Lorna Lueck (Research and Development Manager) left her post and we were joined by Becky Snell as a part-time Administrative Officer. We wish them both well.

Lastly, MENTERRA takes this opportunity to wish you all a Merry Christmas and a Happy New Year.

*For further information, contact the Agri-Innovation Officers,*

**John Roberts or Hazel Jones: (01766 512300).**



**Some of the stalls blown over by the storm, Meirionnydd Show 2005**

# *Camelina – a new source of omega-3 oil*

Consumption of omega-3 fatty acids have been shown to have many benefits, including promotion of cardiovascular and neurological health. These compounds have also been linked with control of behavioural problems such as attention deficit hyperactivity disorder (ADHD) in children. The current major source in the human diet is fish oil, but supplies are limited by declining fish stocks, and recommended consumption of oily fish is also limited as a result of problems with heavy metal contamination. Work within MENTERRA at Bangor University is seeking to address these problems in several ways.

Alongside our work feeding high omega-3 linseed to lambs to improve the nutritional properties of their meat, we have also been investigating a new vegetable source of omega-3, camelina, sometimes called gold of pleasure. Camelina is a short-season, low-input crop, which despite having a very small seed size (each less than 1mg in weight, compared to about 50mg for wheat or barley) is highly competitive against weeds, even at early growth stages. Recommended nitrogen application rate is 70kg per ha (compared to 200kg for wheat) and the only chemical application usually needed is a pre-harvest desiccant, either diquat or glyphosate. Initial promising results in field experiments at Henfaes in 2004 led to successful commercial-scale

trials on Dwyfor farms in 2005. Camelina was grown near Aberdaron, where the problems in drilling tiny seeds were overcome by broadcasting. This crop yielded just under 2 t/ha.

Camelina seed contains about 35% oil, of which 40% is omega-3 fatty acids. Unlike linseed, camelina oil can be refined to have a neutral flavour and therefore is suitable for a wide variety of culinary uses, including salad dressings, mayonnaise and even shallow frying.

As a source of omega-3 in the human diet, camelina oil offers major sustainability advantages over fish oils. As a low-input crop it is capable of providing for a growing omega-3 market whilst eliminating much of the environmental damage that other sources might cause.

**Dr Jim Dimmock**

*University of Wales Bangor*



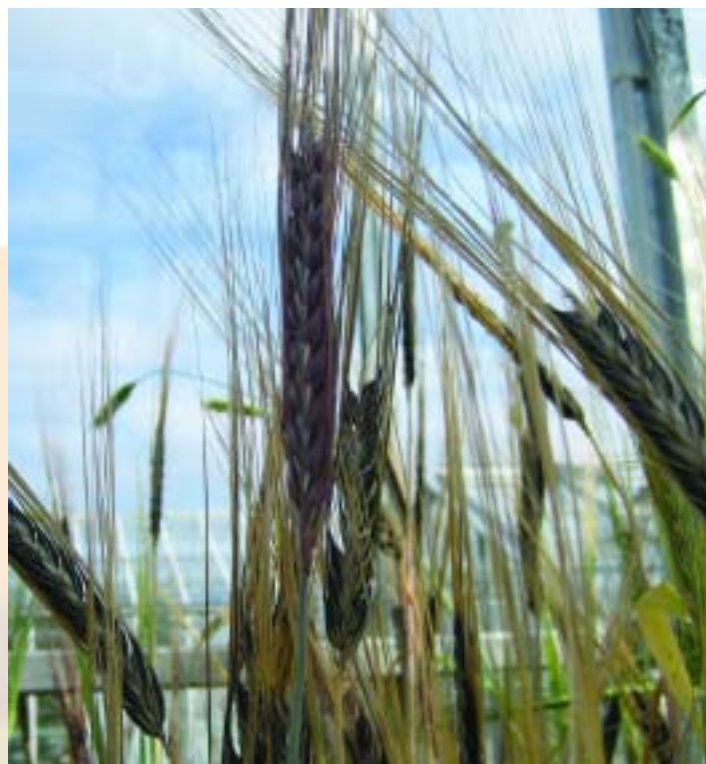
**Dr. Jim Dimmock standing in a field of camelina, near Aberdaron**

# *Naked Barley – A Bright Future for an Ancient Crop*

*Barley with free-threshing grains, or naked barley, originated in Iran several thousand years ago and spread throughout Asia, Europe and North Africa.*

In Europe barley, together with rye, was used for bread production in areas such as Wales where conditions were marginal for growing wheat. However improved agricultural techniques meant that wheat bread, once only an expensive luxury, became available to all.

After centuries of neglect, there is renewed interest in Europe and North America in naked barley as a health food. Naked barley may be used without the need for pearling – an abrasive treatment that removes the husk, along with the bran layer underneath. Soluble fibre such as b-glucan in whole grain barley can help decrease cholesterol and control blood sugar levels, protecting against heart disease and diabetes. Varieties from Sweden, Germany and the Czech Republic were tested at the Henfaes Research Centre, achieving yields of around 70% of conventional spring barley. This suggests that the crop would be viable with a suitable premium over husked varieties. We hope to trial some of these varieties on farm for harvest 2006.



**Black Tibetan Barley in the research glasshouse, Henfaes**

Although it was succeeded by wheat as the staple diet of Europeans, naked barley thrived in the Himalayas, as barley can cope with thin soils, short growing seasons and high altitude. Here it hybridised with Asian wild barleys and the isolated conditions produced a rich diversity of forms. We are currently multiplying seed of some of these varieties, kindly donated by the John Innes Centre. These will be grown at Henfaes in 2006, along with experimental lines from ICARDA/CIMMYT in Aleppo.

**Dr. Edward Dickin**  
*University of Wales Bangor*



**'Lawina' Naked Barley, UWB Farm, Henfaes, Abergwyngregyn**

## ***“TOWARDS COMMERCIALISATION – real progress”***

*That cup of naked oats coffee I mentioned to you earlier this year, has taken a further step forwards. We have conducted a set of roasting trials with a coffee roasting company in Lincolnshire. This was arranged with the help of Michael Squires of Dwyfor Coffee who has been a great help to us in this project.*

We were able to produce a variety of roasted versions from light to dark but felt that the flavours were not complex enough or exciting enough, to make a real impact on coffee drinkers. So we are going to be doing some pre - treatment of the grain to see if we can improve the flavour on roasting. So some more trials are planned for this year, with some crop in the ground now to produce larger quantities for a full scale trial run post harvest in 2006.



What was also interesting to us was how quickly people ate the samples of roasted grain saying it made a good snack – so this has led to the opening of further development strand that will see the production of some trial quantity of a clustered snack product by the end of 2006.

So two products with commercial potential are emerging from this trial crop.



Visit to Humungus Fungus, Llangadog

## ***“Mushroom growing – exotic mushrooms at that – will soon be a reality in Gwynedd”.***

*That statement we made in the last newsletter, has not changed but the intensive growing trials will now be concentrating on making two participants self sufficient by combining growing facilities with a block production facility in Gwynedd. Added to this project a further 8-10 people will be participating in a longer term growing trial on a greater range of species, based on oak log inoculation.*

Farmer selection is well underway with initial meetings and discussion sessions behind us and awareness raising sessions to a real production site to be completed in the

first week in December. Final selection of the triallers will then be dependant on a site assessment visit to their farms in December.

Soft Fruit production developments are moving ahead with netted bushes envisaged for next year; we might see more of the crops next year than the birds !!

However what was harvested was good. One of our team, Jon Stephens has completed a grower's commercialisation manual for Soft Fruit which was presented and discussed at the last growers meeting; so that post MENTERRA anyone wishing to exploit this crop will have a comprehensive guide on how to proceed.

MENTERRA's life as a project is now starting to transform into its beginning as a brand name – so we can see that products bearing the MENTERRA brand will be ready to emerge from the project as it draws to a conclusion in early 2007.

**Chris Price-Jones**

*Technology Director – BIC Innovation*

## *Mushroom Trial*

During the last few months the MENTERRA project has organised two meetings, the first at the Agri-Innovation Centre, Henfaes, Abergwyngregyn on 11 October, 2005 and the second at the Oakley Arms, Maentwrog on 3 November 2005. These meetings were the first stages towards choosing two farmers to trial mushrooms in Gwynedd.

MENTERRA invited farmers who had expressed an interest in the project to attend these meetings. These meetings were also attended by Mr. Richard Edwards and Mr. Mark Wassell of Humungus Fungus; a company based in Llangadog, Carmarthenshire that was established with the aim of developing profitable systems for growing organic mushrooms on a sustainable and low-impact basis. The company, and its associated growers, have been responsible for pioneering a unique mushroom growing system that

utilises old shipping containers. As a result, this makes it possible to place growing facilities in locations where fresh, locally-grown mushrooms are very hard to obtain.

Following two very successful meetings, MENTERRA has now arranged a site visit to Humungus Fungus. The visit has been arranged so that all those who wanted further information about growing these exotic mushrooms could see for themselves exactly how the process of works from fruiting block production to harvesting as well as the level of commitment needed to make this sort of trial a success.

There will be further information about this visit in the project's next newsletter.

**Hazel Jones - Cymad**

## *Are you ready to go Wild?*



*Wild Boar haven't been seen in any significant numbers on UK soil for over 300 years, but their return to Gwynedd could be up to you!*

They were hunted to extinction by our forefathers as their meat was a highly sought after delicacy. Rich in flavour and leaner than our conventional farrowing friend, they feed mainly on various vegetable matter but as with ourselves, need a balanced diet which often includes berries and insects.

Even though there are small pockets of free living wild boar roaming and breeding mainly in southern England, wild boar farming as an enterprise is in its infancy.

The estimated value of the wild boar meat market in the UK is about £2,000,000 and growing! Half of which is being imported in frozen state from Europe as the demand for it clearly outstrips supply. A recent survey conducted with several local chefs concluded that there was plenty of interest in the meat, if only they could secure a reliable supply.



**Wild Boar, Devon**

Naturally, there are many issues to address before establishing a wild boar farm. These range from specific land requirements, regulatory compliance, processing and marketing. Under the MENTERRA project, BIC

Innovation have researched the opportunity and assessed the risks. Dependent on cost of fencing and the most appropriate route to market, wild boar farming has the potential to maximise value from marginal land, creating a real commercial option in a niche market.

**Huw Watkins**  
*BIC Innovation*



**Juvenile Wild Boar, Kent**



## *Tyddyn Meirion, Rhiw*

*Well, what a year it's been for extreme weather ! This has had its effects on humans, animals, and all our trees and experimental bushes.*

While the holidaymaker enjoyed the sun, everybody and everything else, at times, were wilting. Apparently, at the tip of the Llŷn Peninsula, we had even less rain than most places which did affect the MENTERRA project.

The more mature Aronia plants coped better with the weather conditions than the Sea- Buckthorn. The Aronia developed well and produced some berries, we tasted a few and they had a very pleasant apple like flavour. The Blackbirds must have been delighted to see the berried bushes and fast tracked in and stripped them bare. We must put our thinking caps on about that problem, and try to find a solution that is both practical and affordable.

The Sea-Buckthorn really struggled here, being such a juvenile plant on a south-west sloping field; and it wasn't until some liquid refreshment fell out of the sky in late summer that the plants took off with a tremendous burst of growth ! We wonder what will happen to this young soft growth if we have a harsh winter. It will be interesting to monitor the effects.

The Aronia leaves turned a beautiful bright red before the salt laden gales blew in and attacked them. The Sea-Buckthorn is only now in November beginning to show any autumn tints. The mild wet autumn has definitely slowed down the process of dormancy in the shrubs and trees around the farm.



The Soft Fruits plot, Llwyn Gwilym, Llan y Mawddwy

During September we attended a Triallers meeting at the Agri-Innovation Centre, Henfaes, Abergwyngregyn. A very interesting afternoon included presentations on the commercial uses of our berried plants, what we should be thinking forward on and how to investigate the markets. We were offered lots of advice from experts in these fields which gave us plenty of things to think about on our way home. It also provided us with a great opportunity to meet the other Soft Fruit triallers.

### **Sion & Belinda Hughes**

In the article that appeared in Issue 3., it was stated that Mr & Mrs. Hughes' nursery, "Coed Llŷn", produces 2,500 young trees each year. This figure should, in fact, be 22,500.

**MENTERRA apologises to Mr & Mrs. Hughes for this error**



Sea-Buckthorn, Ty'n y Bryn, Trawsfynydd

## *Ty'n y Bryn, Trawsfynydd*

*With over 30cm of rain in less than 4 days and now beautiful clear days with severe night frosts, it is fair to say that winter has arrived.*

Our Blueberries, which were planted in April, have done very well, with all the plants flowering and producing a good initial crop of miniature berries. Although it was suggested that the berries in the first year should be removed to allow all the nutrients to be used to produce plant growth, we allowed a good proportion of our plants to keep their berries to maturity (for obvious reasons). To a large extent, this proved worthwhile because, as a result, a serious problem emerged which needs addressing before the next season – birds. Every berry was taken before fully ripened, so we must look at ways of solving this problem. Now the bushes are dormant but they certainly have grown well during the summer and have become well-established.



Blueberries, Y Bryn, Rhydyclafdy

Our Sea-Buckthorn was also planted in April; all plants were very small initially, with only 12cm height and little lateral growth. During spring there was little movement but during the latter part of the summer and the warm autumn, growth has been considerable, with most plants bushing out and growing to between 70 and 90 cms, although none have flowered or produced berries.

Now both the Blueberry and Sea-Buckthorn plants have become established, we are looking forward to Spring and Summer 2006 when we hope further growth will produce good results with perhaps our first edible crop.

**Peter & Jan Barrett**



Blueberries, Ty'n y Bryn, Trawsfynydd

MENTERRA is pleased to recognise the financial support of these bodies:

