

Issue No. 3 - Summer 2005

menterra



The Gwynedd Agri-Innovation Initiative Newsletter

Welcome

Welcome to the third edition of MENTERRA's newsletter.

Since the publication of the second edition during the winter of 2004, the project has progressed and the work of trialling three different types of Soft Fruit has begun – Sea Buckthorn, Aronia (Chokeberry) and Blueberries – on ten farms across Gwynedd. The story of two of those who have been involved in the trials is included in this edition.

We are trialling organic naked oats on the farm of Bwlch Gwyn, Arthog near Dolgellau and crambe and camelina on two farms in Harlech and Pen Llŷn. At the University farm at Henfaes, Abergwyngregyn, minor trials are being undertaken; including work on naked oats (last year); naked oats (both the winter and spring variety); crambe; camelina and different types of naked barley. This is agronomic research work that is necessary for advising farmers. Also we are continuing to assess the value of other possible ventures, such as exotic mushrooms and sea-vegetables.

As for summer events, MENTERRA will be visiting the Royal Welsh Show, the Anglesey Show, Meirioneth County Show and the Eryri and District National Eisteddfod that will be held at Faenol Park, Bangor. A busy – but exciting summer !

Finally, a few new faces have now joined the MENTERRA team. Since the last edition, Geraint Hughes (Research and Development Manager, UWB) and Dylan Williams (Cymad's Agri-Innovation Officer), have left and they are wished every success in their new posts. In their place, Dr. Lorna Lueck (Research and Development Manager) and Hazel Jones (Agri-Innovation Officer) have been appointed as well as Dr. Edward Dickin as the project's new Technician.

For more information, contact the Agri-Innovation Officers,
John Roberts or Hazel Jones : (01766 512300).



Sea-Buckthorn plant, Ty'n y Bryn, Trawsfynydd



ADDING VALUE TO LAMBS – UPDATE

In our last edition I introduced the work that we've started here at the University of Wales Bangor looking at ways of increasing the omega-3 fatty acid content in lambs, following the example of Deans Farm 'Columbus'-branded high omega-3 eggs.

The lambs in our recent experiment were fed on a series of different diets based on a standard finishing diet for either 4 or 7 weeks, with supplements of whole linseed, linseed presscake and a commercial linseed supplement 'Valomega'. We also used a new source of omega-3 fatty acids, the novel crop *Camelina sativa*, sometimes called 'gold of pleasure'. A straight concentrate diet was also included as a control so we can fully determine the effects of each treatment.

Following slaughter of the lambs we've taken samples of meat and have been busy analysing results to date. So far things are highly promising; we've had chops from each treatment taste-tested by a specialist panel at Manchester Metropolitan University, whose testers reported no significant differences for any of the treat-

ments. Some of the panel even thought that linseed-fed lambs tasted better than the grass-fed animals we'd included in this test as the 'gold standard'.

We are now running detailed chemical analysis of all the meat samples to confirm that omega-3 levels have been significantly boosted by our supplements with a view to commercialising the most effective treatment in the near future.

Dr. Jim Dimmock
University of Wales Bangor

The first months of this year have been busy at Cymad.



We have been securing resources for developing further the organic naked oats project at Bwlch Gwyn Farm, Arthog and beginning on the work of developing a project to grow Soft Fruits on ten various farms, in terms of land and climate, in Gwynedd.

Regarding the exotic mushrooms project hopefully we will be looking firstly at growing Shittake and then developing the initiative to include other kinds of mushrooms that offer additional value. As well as growing mushrooms, we will be producing fruiting blocks by aiming to transfer this technology to the tri-alls. In the end this will enable the farmers to produce fruiting blocks themselves by securing that any initiative that originates from MENTERRA is completely sustainable and, with luck, creates additional income for the farmers by enabling them to provide blocks to other mushroom growers.

We are assessing an exciting new initiative to develop Sea Vegetables as a crop to be grown on Gwynedd coastal farms. At the moment the Sea Vegetables in

question are available to be collected by the length and breadth of our coast but there isn't a continual supply available. If we could grow these plants successfully, it would be possible to supply the market consistently and so develop and expand the current market by creating new markets.

Another factor is that the plants take their fertiliser from the water inside sandy shingle soil that opens the opportunity of using water that is loaded with high levels of nutrients, such as nitrates and phosphates, as fertiliser for the plants. The plants will extract the nutrients from the water (and use them to create growth) and as a result, the water will be cleansed. An interesting development in a period where there's more monitoring than ever of water that goes from farms to the rivers and then to the sea.

John Roberts
Cymad

Alternative Cereals

– New Opportunities for Welsh Farming

As farming in Wales has specialised in favour of livestock, the growing of cereals has declined.

Reversing this decline in mixed farming has benefits for wildlife in increasing habitat diversity, and for the visual appeal of our countryside – imagine a field of barley, gently rippling in the breeze of a summer evening, against the backdrop of Snowdonia. Looking anew at cereals such as oats, rye and barley, which have been neglected in the cereal growing regions of the UK, could provide exciting opportunities.

Last year, as part of MENTERRA, farmers in Gwynedd grew naked oats. These contain beta-glucan fibres, which are valuable for the health food market as they can lower blood sugar and cholesterol, and boost the immune system. Both winter and spring varieties are being grown again this summer at Bangor's Henfaes Research Centre, together with naked barley and Einkorn wheat. Naked or hullless barley also contains beta-glucans, and we are testing varieties from Germany, Sweden and the Czech Republic, to see how they perform in the Welsh climate. Einkorn wheat was the first type of wheat to be domesticated around 10,000 years ago. It is high in beta-carotene, and has a different type of gluten, so may be eaten by some people with an intolerance to bread wheat. In the autumn, we plan to test a golden rye variety from Germany, and Triticale. Triticale, a hybrid of wheat and rye, is familiar to farmers as a feed grain, although it contains a better balance of amino acids than wheat, and could be used to make healthier bread.



Rye, University of Wales Bangor farm, Henfaes, Abergwyngregyn

All these crops can be grown with lower inputs of fertilizer and pesticides than bread wheat. They are also better adapted to some of the poorer soils found in Gwynedd, and to the possible effects of climate change. For example rye and oats can grow on acid soils, and barley and rye are more drought tolerant than wheat.

Dr. Edward Dickin
University of Wales Bangor.



Triticale, University of Wales Bangor farm, Henfaes, Abergwyngregyn

MOVING TOWARDS COMMERCIALISATION

It was whilst I was sipping a cup of naked oats coffee earlier this year that I realised that we had started to take some real steps towards commercialisation of some of the trialled crops planted last year. It was some of the crop from Bwlch Gwyn Farm, Arthog that I had conducted some fairly primitive roasting trials on, just to see what we could expect, and I have to say, I was pleasantly surprised.

Not anywhere near a finished product yet, but enough encouragement for us to start to set up some proper roasting trials with naked oats off the field this year. We won't be giving "Costa Coffee" a run for their money any time soon but there is enough promise to suggest that entry into a niche sector of this market might be possible.

Further research over the last few months has moved us closer towards establishing additional trials.

Mushroom growing – exotic mushrooms at that – will soon be a reality in Gwynedd. Plans are being made to set up four trial sites at different locations in the county. Using expert mycological ("fungi growing") assistance from an established grower and the University, we intend to establish growing rooms on a small number of farms.

The growing rooms are based on the adaptation of 20ft insulated containers. These are seen as potential second enterprise activities that are farm based, and may then lead to the formation of a marketing co-operative offering crops to some of the leading restaurants in the region and perhaps, more importantly, the UK and Europe.

This activity will involve all project partners pulling together to make this extensive trial successful. As knowledge and information becomes available, scheduled workshop sessions and on site will ensure that we are all pulling in the same direction, towards a commercially exploitable product or products !

Exotic mushrooms as food are only the first step, but a really useful one to give us real growing experience. Perhaps the really exciting prospects for the mushrooms are not in food based endeavours, but lie in us being able to extract or prepare active ingredients for use in topical creams, lotions and potions. These are the areas we are exploring to see how much real potential exists in marketing natural remedies and cosmetics based on the traditional properties claimed for some of the mushrooms here and in the rest of the world.

MENTERRA is seeing a range of potential commercial outcomes starting to emerge from some initial trials undertaken. A combination of astute targeting and a comprehensive effort by all the project partners will support the development of new products and also identify more potentially commercial ideas for farmers to exploit.

Chris Price – Jones
Technology Director – BIC Innovation



Ty'n y Bryn, Trawsfynydd

Six years ago Jan and I purchased Ty'n y Bryn, a 2.4 hectare holding nestling some 900 feet up in the hills of North Wales.

In terms of livestock, we have now successfully completed 6 lambings and augment the sheep with chickens, ducks and at the appropriate time of the year turkeys which we buy in at 4 weeks and fatten up resulting in birds of between 20 – 24lbs.



Blueberries growing at Ty'n y Bryn, Trawsfynydd

Having, via the freezer, a ready supply of meat all year round we have also established a very viable vegetable patch growing root crop such as potatoes, carrots, swede and parsnips through to salad crops such as beetroot, tomatoes, cucumbers and lettuce and staple vegetables such as cabbage, cauliflower, sprouts, runner beans and peas. We have failed to produce fruit, except Soft Fruit which we have put down to the very high winds we experience all year round.

Whilst self sufficient in meat and vegetables we have failed to realise an income from our small farm, so when we learnt of the MENTERRA project we immediately expressed interest.

Today, a 75 square foot plot of land has been fenced off, making it rabbit and sheep proof and planted out with 48 Blueberry plants and 48 Sea-Buckthorn plants. The Blueberries have only been in the ground 8 weeks but are already doing very well, flowering and showing signs of fruit. The Sea-Buckthorn were planted later but also appear to be doing well.

Blueberries could be a most useful cash crop; these sweet succulent berries are delicious and, more importantly, fetch high prices. Sea-Buckthorn is grown for its' oil which is used in the cosmetic industry and again it is believed to be a good cash crop.

Come late summer we will learn how successful the first year has been but who knows, instead of sheep grazing the fields we could be looking at fields of Blueberries and Sea-Buckthorn !

Peter & Jan Barrett



Peter & Jan Barrett, Ty'n y Bryn, Trawsfynydd



The Soft Fruits plot, Ty'n y Bryn, Trawsfynydd

Tyddyn Meirion, Rhiw

Four hundred feet up on a southerly sloping mountain in Rhiw, Pen Llŷn we farm 20 acres on a small holding. Due to the problematic state of farming, in 2003 it was decided to start a tree nursery for local provident sourced trees called “Coed Llŷn”, which had full backing from the AONB Board. On average, the nursery produces 2,500 young trees each year, and customers include the National Trust, Gwynedd Council, Forestry Commission schemes, local farmers and the general public.

We contacted MENTERRA after reading about the project in the local paper. The trials came under different categories and we chose Soft Fruit or Berries because we believed this would better suit our soil conditions and location. After soil analysis, the best options for us was Aronia and Sea-Buckthorn. The trial commenced with the appropriate area being fenced and rabbit proofed and 76 Aronia and 42 Sea-Buckthorn bushes were planted. The Sea-Buckthorn plants were imported from Germany, as the ordinary ones growing in this country are not suitable for the commercial growing of their berries.

In Germany, where some farms are growing up to 50 acres of these plants, Sea-Buckthorn has been grown on a commercial basis for a number of years.



Aronia / Chokeberry growing at Tyddyn Meirion, Rhiw

It is hoped that these bushes will crop well and with the backing and support that MENTERRA will provide, we will be able to source a market for the berries.

Sion & Belinda Hughes



The Soft Fruits plot, Y Bryn, Rhydyclafdy

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

